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# Climate Resilience in Local Plans

ADAPTATION AND MITIGATION IN  
LOCAL DEVELOPMENT

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By Sandy Forsyth

# About Localis

## Who we are

We are a leading, independent think tank that was established in 2001. Our work promotes neo-localist ideas through research, events and commentary, covering a range of local and national domestic policy issues.

## Neo-localism

Our research and policy programme is guided by the concept of neo-localism. Neo-localism is about giving places and people more control over the effects of globalisation. It is positive about promoting economic prosperity, but also enhancing other aspects of people's lives such as family and culture. It is not anti-globalisation, but wants to bend the mainstream of social and economic policy so that place is put at the centre of political thinking.

In particular our work is focused on four areas:

**Decentralising political economy.** Developing and differentiating regional economies and an accompanying devolution of democratic leadership.

**Empowering local leadership.** Elevating the role and responsibilities of local leaders in shaping and directing their place.

**Extending local civil capacity.** The mission of the strategic authority as a convener of civil society; from private to charity sector, household to community.

**Reforming public services.** Ideas to help save the public services and institutions upon which many in society depend.

## What we do

We publish research throughout the year, from extensive reports to shorter pamphlets, on a diverse range of policy areas. We run a broad events programme, including roundtable discussions, panel events and an extensive party conference programme. We also run a membership network of local authorities and corporate fellows.

## Contents

	Introduction	2
<b>1</b>	Climate change, resilience and planning	5
<b>2</b>	Adaptation in local plans	12
<b>3</b>	Consolidating and strengthening local resilience	25

## Introduction

As climate shifts worldwide, councils across England are being hit by increasingly extreme weather patterns including violent storm surges, unbearable temperatures, and widespread flooding. Even under the most minimal of warming scenarios, infrastructure, public health, and GDP will all worsen due to the weighty pressure of extreme weather events. If action is not taken, the UK might see economic damage of up to 7.4 percent reduction of its potential GDP by the end of the century, alongside devastating shocks to its agricultural sector and to the health of its population. Yet with suitable upstream mitigation and preventative measures in place, that figure would drop to a predicted 2.4 percent.

Local authorities have the capability to enact necessary resilience measures for both the built and natural environment. Different areas are undergoing their own unique changes, and specialised adaptation is necessary. At the level of place, our local authorities are best situated to understand and to act upon individual resilience requirements from city to country to coast. However, the current funding landscape for local government to deliver resilient places is far too piecemeal and insufficient. Furthermore, the system is overwrought with complexity - the division of responsibilities between local, central government and industry are too fragmented and disconnected for this to be addressed as a whole place agenda.

### The Local Resilience Act

To address these problems, Localis proposes a **Local Resilience Act**. The act would serve to:

- Ensure funding for place resilience to meet a statutory duty upon local authorities, as a core service line, to provide the best adaptation measures for the built and natural environments in the coming generations.
- Streamline existing legislation to allow the necessary changes to happen at the local level.
- Provide a workable and clearly defined conception of 'resilience' to be adopted in place.

The level of place is where climate change adaptation is most able to mitigate the risks of dangerous weather changes. Changes to transport, buildings, local businesses, land use and biodiversity are all required and can be enacted by local authorities. These changes, however, can only be affected at the level of place if the role of local government in directing resilience is consolidated, and if the necessary funding and revenue streams are provided.

## **This report**

This report is the first in a series looking at various dimensions of a Local Resilience Act and begins with the basic question of what impact duties placed on local government of the kind proposed have on the outcomes of local development plans. Local Plans form the backbone of the planning system and the basis for development across the country, providing the requirements that must be met whenever planning permission is sought for new development. Following the National Planning Policy Framework (NPPF), Local Plans make up the fundamental strategy from which sustainable development can be achieved. They provide a system via which people, communities, and businesses can prosper alongside the natural and built environment under well-established strategies and policy considerations.

As such, Local Plans can play a substantial role in the country's response to climate change: the NPPF, although it does not hold legislative control over local authorities, ostensibly provides a framework that holds planning authorities responsible for ensuring climate commitments are met, including biodiversity goals and improving the usage of renewable and low-carbon energy sources. The purpose of this short report is to evaluate the role that Local Plans currently play in driving climate change resilience across England, and where the planning system falls short of providing the protection necessary for people and communities against the impacts of a changing climate.

## **Methodology**

To analyse how adaptation to climate change is factored into contemporary local plans, the research for this report involved reading 88 Local Plans, all adopted after 2018, and drawing out instances where climate change impacts have been included as informing the development strategy, either in a background

or primary manner. The year 2018 was selected as it would include all plans published contemporaneously with and following the publication of the second National Adaptation Programme (NAP). Information on the nature of weather change and other threats to resilience arising as a result of climate change was built up through desk research and formed the framework for the local plan analysis.

# 1. Climate change, resilience and planning

This first section considers how local government and its planning role factor into the national push for net zero emissions and the need to adapt now for the already unavoidable and escalating impacts of global heating.

## 1.1 The role of local government in mitigation and adaptation

The Climate Change Act of 2008 (CCA), updated in 2019, lays out the carbon target for the UK for 2050 and legislates commitments to greenhouse gas levels and objectives for net zero across the country, alongside detailing the role of the Climate Change Committee (CCC) as an advisory body for the government's action against climate change. In 2020, the CCC emphasised that carbon targets are only viable under the assumption of collaboration between local, regional, and national authorities<sup>1</sup>. The current Net Zero Strategy published by the Department for Business, Energy and Industrial Strategy (BEIS) highlights that 82 percent of UK emissions are within the scope of influence of local authorities<sup>2</sup>. However, The Countryside Charity (CPRE) has noted that even though housing, transport, business, and industry generate 62 percent of our carbon emissions, only one out of 24 local plans developed outside Greater London since the 2019 update to the CCA introduced a "quantified, strategic-level carbon reduction target"<sup>3</sup>.

Although there are no net zero statutory requirements placed explicitly on local authorities, the government stresses that local authorities have an important role to play in helping the UK meet current carbon budgets – with analysis suggesting that more than 30 percent of emissions reductions targets rely on local authority involvement to some degree<sup>4</sup>. Local authorities also hold the power to provide the public investment required to develop net-zero strategies such as the provision of green jobs and to ensure public engagement in climate-focussed decision-making. Overall, the planning system is a highly significant aspect

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1 Climate Change Committee (2020) - Local Authorities and the Sixth Carbon Budget

2 BEIS (2021) - Net Zero Strategy: Build Back Greener

3 CPRE: The Countryside Charity (2022) - Planning to fail: net zero is impossible without urgent changes to planning

4 BEIS (2021) - Net Zero Strategy: Build Back Greener

of the drive to net zero but faces criticism that it is currently hindered by more barriers than aids to appropriate climate change mitigation.

While local government is often included in the conversation on mitigating the effects of climate change, through their role in achieving net zero emissions, this cannot be the extent of councils' duties. Climate change resilience – our ability to deal with the already existing and continually increasing impacts of global heating – is often a secondary consideration in discussions of the role that local authorities and local plans have in the fight to combat climate change. Yet resilience will be vital to the continued well-being of communities.

This is not to say that there is no consideration of adaptation in the planning system – there are elements of resilience which are well established. Certain aspects of climate change adaptation have already been recognised as very much reliant on local planning: flood mitigation, the development of green infrastructure, and coastal resilience. The CCC have noted the role of local planning particularly in the production of flood risk assessments and in the development and renewal of Shoreline Management Plans. Guidance from central government on the role of the planning process in fighting climate change notes that there is the capacity for planning to avoid the risks of climate change impacts through appropriate allocation of development sites, responding to flood risk, supporting suitable water infrastructure, and the promotion of adaptation approaches in design policies, alongside engaging with partners<sup>5</sup>.

What these elements lack is a clear binding thread of place-based climate resilience, which would also allow for the incorporation of other, currently ignored aspects of resilience and provide a basis for vital funding for capacity. The planning system can have a positive impact on both resilience to and mitigation of climate change. However, the present planning framework is seen by most local authorities as only to “some extent” enabling the implementation of policies relating to climate change<sup>6</sup>. Given the ability for the planning system to enact many forms of climate change resilience, there should be total capacity

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5 DLUHC (2014) - Guidance: Climate Change

6 Town and Country Planning Association (2022) - Rising to the climate change challenge: The role of housing and planning within local councils



provided by the planning framework for such resilience to take place.

## 1.2 The NPPF

The National Planning Policy Framework (NPPF) is a document that outlines the planning policy statements and guidance for all development that occurs in England. It provides the foundations upon which planning authorities can build the economic, environmental, and social landscape of the country. Since its inception in 2012, the NPPF has seen multiple revisions, including a revision in 2018, an update in 2019, and a further revision in 2021. Planning authorities across England are currently awaiting a delayed additional update to the NPPF, following the publication of, and subsequent consultation on, the central government's Levelling Up and Regeneration Bill in 2022.

Despite the relative frequency of revisions, the NPPF has faced criticism for the efficacy of its approach to climate change. Multiple stakeholders have argued that it falls short of aligning government's ambitious goals for net zero with the efforts of the planning system and its chapter on climate change has seen little modification since its first appearance in 2012. The Town and Country Planning Association<sup>7</sup>, the Climate Change Committee<sup>8</sup>, and the Centre for Sustainable Energy<sup>9</sup>, alongside other experts and stakeholders, are in agreement that the NPPF, as it stands, fails to provide planning authorities with the capacity to enact the necessary combatting of climate change.

Although the NPPF is not in and of itself a legislative document, its proposals find their basis among the various Acts instituted by Parliament that are concerned with the remit of local authorities. As such, the NPPF acts as a kind of intermediary for legislative concerns, although it remains ambiguous in many of its actual recommendations for strategic planning – and significantly, in its approach to climate change. Local authorities adhere to the NPPF, in the manner set out below, and in doing so follow the restrictions and accommodations set out in formal legislation.

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7 Town and Country Planning Association (2021) – Guide for responding to the draft NPPF

8 Climate Change Committee (2022) – 2022 Progress Report to Parliament

9 Centre for Sustainable Energy (2021) - Our response to proposed changes to the planning policy framework

Adhering to the NPPF, planners are required to follow an increasing number of obligations and tests as part of the process before the allocation of development sites, although there has been a recent movement away from an excessively technical methodology in planning. The Royal Town Planning Institute has pointed out in a response to the current proposed changes to the NPPF that these obligations and tests are obliquely under-utilised in terms of climate change. The RTPI states that the “long delayed amendment of the NPPF to put the climate emergency centre stage” is “already seriously overdue”<sup>10</sup>. As such, there is evidently great demand for the introduction of strengthened and consolidated environmental obligations for planners that will tie the government’s ambitious climate policies into the concrete realm of development.

### 1.3 Finance and capacity

Throughout the period of austerity, local authorities have seen significant cuts in funding from a number of different avenues, leading to a reduction of almost 30 percent in real spending power from 2010 to 2018<sup>11</sup>. Local authorities have increased council tax rates consistently since the 2016-17 period but removing council tax from the equation reveals that government-funded spending power dropped in real terms by more than half from 2010-11 to 2020-21<sup>12</sup>. Some local authorities rely on central government funding to a greater extent than others, and as such have seen greater relative spending cuts over the austerity period – although there are many factors that influence how resilient local authorities can be to funding cuts, including relative levels of deprivation or local property values.

Additionally, funding to local authorities has been consistently provided via short-term and one-off streams of income that do not lend themselves to appropriately long-term decision-making and strategic planning and have led to local authorities turning to funding reserves to keep on top of their

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10 Royal Town Planning Institute (2023) response to the NPPF consultation

11 Rex and Campbell (2021) - The impact of austerity measures on local government funding for culture in England

12 National Audit Office (2021) - The local government finance system in England: overview and challenges

budgets. Expenditure for planning and development services covers economic development, environmental initiatives, community development, development control, building control, and planning policy. While economic development saw the greatest reductions in expenditure from 2010-11 to 2016-17 within planning and development services, planning policy still saw a 14 percent reduction within this period; housing strategy – within housing services – saw a 36 percent reduction; and transport planning, policy and strategy within the sphere of highways and transport services saw a 33 percent decrease in spend over the same period<sup>13</sup>.

Although spending cuts were intended to improve the relative efficiency of local government, under-resourcing is seen as a major barrier to climate change adaptation and mitigation by many local authorities<sup>14</sup>. Financial uncertainty due to cuts in funding has a detrimental impact on value-for-money considerations, and local authorities have warned that further budget cuts in the coming year will have negative effects for local service provision. Local authorities cannot meet planning targets without appropriate funding and support<sup>15</sup>.

One facet of these negative effects on service provision is the disintegration of the skills base among local authorities, and particularly among planning departments. Inadequate funding over the past decade has driven councils to efficiency measures including “multi-skilling” – in other words, substituting losses in the workforce by providing additional training for surviving staff members<sup>16</sup>. 17.4 percent of councils surveyed by the Association for Public Service Excellence stated that they had committed to the upskilling of existing staff, while 12.6 percent had uprated pay in order to remain competitive in the current recruitment market for jobs across the workforce<sup>17</sup>. Such measures alone cannot, however, account for the growing skills gaps across local government.

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13 National Audit Office (2018) - Financial sustainability of local authorities 2018

14 Town and Country Planning Association (2022) - Rising to the climate change challenge: The role of housing and planning within local councils

15 Green Alliance (2021) - The local climate challenge: a new partnership approach

16 LocalGov (2021) – Is a multi-skilled workforce the future of local government?

17 The Association for Public Service Excellence (2021) – Local government: Skills shortages and workforce capacity

The TCPA has noted that the shortage of skilled professionals has had a significantly detrimental effect on councils' responses to climate change. A survey they carried out of 65 local authorities revealed that "only two percent of local authorities are considering future insurance availability and affordability when making planning decisions, and only a third of local authorities are seriously considering the impacts of climate change when deciding whether to grant planning permission"<sup>18</sup>. Only 12 percent responded to the TCPA that they felt their skills and expertise were sufficient to take account of flood risk in current and future planning decisions. The dearth of skills due to budgetary pressures on local authorities is having an immediate and negative impact on how resilient development is to climate change.

If properly resourced, local development planning can produce binding net-zero standards for new development and maximise emissions reductions, prevent unnecessary extraction of fossil fuels, and set requirements for sustainable buildings and transport<sup>19</sup>. Yet this requires a long-term view which is difficult to establish when in a position of just about managing to meet immediate requirements. The Royal Town Planning Institute states that "used effectively, planning can help frame and deliver the place-based pathways to a net zero future that underpin low carbon living"<sup>20</sup>; the TCPA believes that "A resilient and sustainable future is achievable, but only if we act now"<sup>21</sup>; and the Association for Public Service Excellence argues that "the UK will not meet its ambitious carbon reduction targets without tackling emissions from homes".

Change to the planning system is necessary if the UK's ambitious goals and essential adaptation are to be realised, but there is general agreement that under suitable management, both net zero and climate change resilience can be recognised across the country. Local authorities will play a large role in ensuring

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- 18 Town and Country Planning Association (2020) – Loss of skills and power: is local government critically unprepared for the climate crisis?
- 19 Town and Country Planning Association (2021) - The Climate Crisis – a guide for local authorities on planning for climate change
- 20 Royal Town Planning Institute (2021) - Place-Based Approaches to Climate Change
- 21 Town and Country Planning Association (2021) - The Climate Crisis – a guide for local authorities on planning for climate change

that emissions targets and adaptation processes are enabled while providing an integrated approach that ensures collaboration between partners, support for stakeholders, and a just response to climate change. Both the quantifiable capacity for local authorities to reduce emissions and protect development from climate extremes and their soft influence over residents have the potential to produce resilient, informed, and sustainable communities. However, full potential will not be realised until appropriate funding is provided and legislation is instituted to enable local authorities to enact positive change through the planning system.

## 2. Adaptation in local plans

This section is based on our analysis of local plans, looking at how councils assess the potential impacts of climate change and then build adaptations to these shifts into their development policies. Measures to improve resilience are split into those where clear rules are laid out with some degree of quantification, and those where suggestions are given but interpretation is at the discretion of individual local authorities.

### 2.1 Assessing impacts at place level

The impacts of climate change are variable depending on several factors, and local authorities are ideally placed to carry out holistic risk assessments that survey both current risks and projected impacts at the level of place. In order for the UK to address the impacts of climate change to the best possible level, adaptations must be tailored to local, micro-climatic, and community-based solutions.

#### 2.1.1 Localised forecasting

For the impacts of climate change to be written properly into local plans, projected shifts in temperature – both high and low – need to be understood at place level for every area in England. Associated changes which must be considered include:

- Rainfall
- Sea level and the coast
- Storm frequency and severity
- Water supply
- The frequency of further extreme environmental incidents such as wildfires and subsidence.

The importance of place-based analysis is at its most evident in the assessment of climate change impacts. Additionally, with assessment, there must be consideration of every level of risk: short-term to long-term, and to every kind of factor from public health, infrastructure, and supply chains to the risks for the economy and to natural capital and agriculture.

Many local climate change and environment strategies already consider projections unique to the areas of interest for the respective local authorities. Greater Manchester, for example, benefits from a Climate Change Risk Assessment for its critical infrastructure that contains a detailed and easily accessible survey of the most relevant impacts of climate change on the area, including flooding, overheating, and water scarcity<sup>22</sup>. However, such a comprehensive survey of impacts is not always available, with the costs of production a major impediment.

This is not to say that each local authority would need their own bespoke report, in such a scenario there would be vast replication across regions – it is a question of the availability of accurate information and the requirement for councils to use it. The Met Office provides projections for temperature and rainfall on a localised level and some local authorities communicate the potential risks well in their climate change reports: the London Borough of Richmond upon Thames, for example, utilises the Met Office UKCP18 projections for South West London as the inception of their responses to climate change<sup>23</sup>. The utilisation of this level of in-depth knowledge should be the norm for local planning.

Extreme heat, as evidenced in 2022, may also need to be considered in development planning. The Urban Heat Island effect (UHI) is a measurable additional factor to rising temperatures and as such needs to be considered by authorities of urban areas and, significantly, internal temperature modelling must include climate projections that allow for UHI<sup>24</sup>. In future, UHI may account for 21% of heat-related mortality<sup>25</sup> – as such, urban areas need to be especially scrupulous in planning for the impacts of temperature increases in the summer months. Sutton, in its Environment Strategy, provides a map of heat vulnerability across the borough<sup>26</sup>. This detail in mapping allows a more tailored response to specific vulnerabilities across community and place.

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22 RESIN (2018) - Climate Change Risk Assessment of Greater Manchester's Critical Infrastructure

23 Richmond upon Thames Council (2020) - Climate Emergency Strategy

24 Islington Council (2019) - Islington Local Plan Proposed Submission (Regulation 19)

25 Taylor et al. (2018) - Comparison of built environment adaptations to heat exposure and mortality during hot weather, West Midlands region, UK

26 Sutton Council (2019) - The Sutton Environment Strategy

Water stress, linked to changing rainfall patterns and increasing temperatures, is evaluated thoroughly at the local government level, with drought conditions expected to become more frequent and longer lasting under all climate change scenarios. 54.5 percent of surveyed plans emphasise water stress as a potential pressure, and many authorities in areas of serious water stress as defined by the Environment Agency make note of this factor – although not all do.

It is also possible to map out localities that have higher risks from storm surges – particularly due to coastal change and the effects of sea level rise, and because some areas experience higher than average wind speeds. The 2020 Merseyside Community Risk Register, for example, recognises that Liverpool city due to its higher-than-average wind speeds is at greater risk due to storm surges from the Irish sea and high winds<sup>27</sup>.

Local environment strategies are supplementary planning documents that outline policies for sustainable and climate-focussed development, with many climate action plans published following the individual climate emergency declarations by a good number of councils - 291<sup>28</sup> in England. Some of these strategies appear as influencing factors in the local plans published since their inception: for example, the London Environment Strategy is used as an evidence document for the Barking and Dagenham local plan. As such, climate strategies form a key part of the development process regarding climate resilience, although many include a primary focus on the net-zero strategy and climate change mitigation rather than adaptation.

### 2.1.2 Flooding and coastal erosion

Coastal change is perhaps the most evidently place-based risk, wherein those areas at highest vulnerability to the impacts of climate change are those at the most risk from coastal erosion and sea level rise. There are projections available that predict the effects of sea level rise and storm surges on all coastal areas, potential damages to infrastructure, and the risks to people and public health.

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27 Liverpool City Council (2019) - Liverpool Net Zero Carbon 2030

28 CAPE (2023) - Find a council



Coastalresilience.uk<sup>29</sup> is a resilience index for coastal authorities via which they can measure elements such as response time, risk exposure protection, and habitat loss.

For some local authorities, it is vital that coastal change is measured and addressed swiftly and with as much support as possible. Portsmouth, the only island city in the UK, is in a state of great vulnerability to coastal change and flooding: appropriately, it considers these risks in detail in its Climate Strategy and its Seafront Masterplan<sup>30</sup>. The impacts of coastal change, by clear necessity, must take the forefront in many adaptation strategies across England. In deference to this, many coastal authorities utilise a Shoreline Management Plan (SMP). Copeland Borough Council, for example, adheres to the North West England and North Wales SMP. Coastal authorities also, as in the case of Fareham Borough Council, develop strategy in consideration of Coastal Change Management Areas, in order to keep track of coastal change and the potential impacts of sea level rise and coastal erosion on development.

Furthermore, flooding of all kinds – fluvial, pluvial, and coastal – is widely recognised as one of the major sources of risk for many areas of the UK, and as such legislation pushes all local authorities to provide Flood Risk Assessments for their areas. Projections indicate that summer rainfall events will increase in intensity across the UK, and average precipitation will increase by up to 39% in the winter under a high emission scenario from the current baseline<sup>31</sup>, with flooding predicted to cost the UK up to £3.3 billion in annual damages<sup>32</sup>. Appropriate adaptation will mitigate risks and costs. Flood Risk Assessments, which are factored into local plans, account for the fact that severity of flooding might change over time and due to climate change, however only 39.8 percent of surveyed plans note the possibility of increasing precipitation rates or rainfall severity due to climate change.

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29 The University of Southampton (2022) - Coastal Resilience Model Portal

30 Portsmouth City Council (2020) - Seafront Masterplan

31 Met Office (2018) - UKCP18 Science Overview Report

32 National Farmers' Union of England and Wales (2018) - The Flooding Manifesto

### 2.1.3 New and emerging challenges

Wildfires are not predictable in themselves but are linked to periods of low rainfall and higher temperatures, and therefore local climate projections can be utilised in assessing risks associated with wildfires. As became apparent in the summer of 2022 when extremely high temperatures resulted in frequent and intense blazes across parts of London, places across the UK must become more resilient to the dangers of wildfires<sup>33</sup>. The risk of subsidence, although it does have several underlying causes, and other damages to infrastructure is also exacerbated by high temperatures and dry soils.

The 2022 UK Climate Change Risk Assessment (UKCCRA 2022) states that the next CCRA, due for publication in 2027, will provide an ambitious “enhanced spatial perspective to risk assessment” that it hopes will allow better support for localised responses to climate change. The UK Climate Resilience Programme has also funded the development of an expanded set of climate projections in addition to the 2018 UKCP, including more than 60 climate indices for use by anyone carrying out climate research<sup>34</sup>. The first step to localised responses must be analysis of the impacts at a local scale.

## 2.2 Building adaptation into local plans

The following section sets out the spheres of adaptation that must be addressed by local authorities, emphasising the relative level of legislative power that supports resilience in each case.

### 2.2.1 Quantified provisions

Much of the legislation concerned with the role of local governments in the fight against climate change, as in the 2008 Climate Change Act, is, for good reason, focused on the drive towards net zero, achieving sustainability, and waste reduction, all of which contribute to resilience to some degree. More specifically targeted at adaptation, the requirements set out in the NPPF ensure

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33 The Guardian (2022) - UK cities need to prepare for future wildfires, say fire chiefs

34 UK Climate Resilience Programme (2023) - EUROCORDEX-UK: An Expanded Set of Regional Climate Projections for the UK

that there is a thorough response in place to certain risks associated with climate change – namely, flooding, water supply, and coastal change management.

While this is necessary work to be undertaken at the level of place, it is only half the story. The coverage given to climate resilience in the NPPF is minimal considering the magnitude of the work required to adapt to all the impacts of climate change. Our analysis of local plans reveals that the majority of planning concerned with climate resilience follows only what is required by the NPPF and the CCA. The NPPF's first requirement concerning adaptation is that planning authorities "minimise vulnerability and improve resilience". This is a good fail-safe prerequisite, although ultimately provides none of the detailed guidance required to actually ensure either of the actions it presents. Every local plan will give mention to the importance of climate resilience, but genuine and worthwhile resilience requires more holistic action than this minimal recognition.

### Flooding, drainage, and erosion

The most thoroughly anticipated impact of climate change is that of flooding. This is unsurprising, given that one in six properties in the UK are vulnerable to some degree of flood risk and under less conservative projections for climate change it is expected that by the 2050s flooding will cost the country £3.3bn in annual damages<sup>35</sup>. The NPPF devotes itself to ensuring suitable responses to flooding and coastal change and this is reflected by local plans, which all provide guidance on flood risk response, to varying degrees. There is a requirement for planning agents to provide a sequential test to consider flood risk and avoid developments in areas of highest risk, provide site-specific flood-risk assessments and produce an exception test in the few cases where development in areas of flood risk might be necessary.

Guidance supporting adaptation to flood risk is provided by both DEFRA and the Environment Agency. Additionally, Sustainable Drainage Systems (SuDS) are a requirement where possible when development is at risk of flooding, and as such local plans devote attention to the use of SuDS. Some plans – for an example, the Chelmsford City Council local plan – provide an attentive site-by-site analysis

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35 Vardoulakis et al. (2015) - Impact of climate change on the domestic indoor environment and associated health risks in the UK

for the suitable use of SuDS.

Coastal authorities, as well as those impacted by tidal flooding, take account of coastal erosion and sea level rise, referring to these and associated risks in their local plans. The NPPF ensures that planning agents take account of the UK Marine Policy Statement and marine plans and utilise integrated Coastal Zone Management. Coastal Change Management Areas are used particularly to ensure that development is limited to areas that will be unaffected by future coastal change. Because of the attention devoted to coastal change in the NPPF, there are even councils of non-coastal areas that broach the topic in their local plans – for example, North West Leicestershire. Furthermore, councils of low-lying areas or those located on estuaries and other areas affected by tidal change despite not necessarily being considered as coastal authorities – such as those on the Thames Estuary – will consistently ensure that preparations are made for the consequences of climate change.

While the NPPF doesn't dwell on the issue of water supply, particularly in the face of rising temperatures and increasingly frequent drought conditions, the government's 25 Year Environment Plan (25 YEP) does introduce requirements for water supply measures alongside the National Adaptation Programme's focus on drought. The 25YEP provides measures for drought, ensures water use per person remains efficient, and legislates the role of water companies in maintaining the UK's environment. Water supply is considered in local plans, however of those plans surveyed in this report, just under half did not detail the risks of water stress in reference to the changing climate.

### Biodiversity and green infrastructure

Net gains for biodiversity and protection of the natural environment are both given significant attention by the NPPF. New and existing developments must place as little risk as possible on the environment, and pollution is heavily regulated. Air quality, for instance, is dealt with in terms of quantifiable resistance measures, including within the new Environment Improvement Plan, and as such appears as a point of concern in one hundred percent of local plans – although, the occasional local plan only provides minimal attention to potential provisions for the mitigation of air pollution. Planning authorities rightfully consider and minimise any risk of land instability or contamination.

As such, adaptation to climate-related risks such as subsidence and damage to biodiversity becomes an auxiliary benefit to well-conceived planning strategies.

Green infrastructure is both heavily legislated for and brought into effect by local plans, to the benefit of climate resilience – particularly regarding the mitigation of flood risk and high temperatures and the UHI. Defra and Natural England, as part of developing a National Green Infrastructure Framework – a commitment of the 25 YEP – have produced an England-wide green infrastructure mapping database to monitor the uptake of green infrastructure across the country<sup>36</sup>. All local plans surveyed include green and blue infrastructure strategies, however not all make note of the impacts that this development can have on mitigating the effects of climate change.

### The National Adaptation Programme

The National Adaptation Programme goes into much greater detail about the necessary steps to be taken across the country in the face of climate change. However, the NAP is only mentioned in two of the surveyed plans and some of the adaptation matters that it raises – food security, raising the public profile of adaptation, safeguards to protect communities and businesses in the face of the climate crisis – are few and far between among local plans and even local environment strategies. The NAP does, however, laud the good work of the mayoral combined authorities, the Core Cities Climate Resilience and Adaptation Working Group, the London Councils and Greater London Authority, and Local Resilience Forums, providing examples of best practice that pave the way for future possibilities of strategic responses to climate change.

The NAP further refers to the government's 25 YEP, which provides strategy for the protection of biodiversity and landscapes. The 25 YEP was published at the beginning of 2018 and appears in 14.8 percent of plans published since that year: a good number given the time required to develop local strategy. Five years after the publication of the 25YEP, the government has set out a framework entitled The Environmental Improvement Plan 2023, which provides quantifiable goals for environmentally conscious development across the country.

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36 Natural England (2022) - Green Infrastructure Mapping Database and Analyses - Version 1.2

Significantly, it also provides focus on increasing the country's resilience against natural hazards and makes note of the necessity for preparing communities against the changing climate. Furthermore, the NAP surveys the work of the Local Adaptation Advisory Panel (LAAP), whose work will be discussed below. Additionally, in December 2022 the government made available a National Resilience Framework, which outlines the role of national government in all forms of resilience, focussing its emphasis on investments, community, skills, and partnerships, all of which can play a part in the adaptation plans of local government.

Where climate action plans and environment strategies are in place it is easy to see where local authorities have utilised good practice guidance and formulated appropriate measures in response to the climate emergency. However, the analysis of local plans shows that there is a gap between what is presented in these additional documents and what appears in the major development strategy for authorities. For the work of local authorities towards sustainable and environmentally beneficial development to be realised, integration is needed between all supplemental and fragmented systems of planning. In order to achieve an efficient response to the climate emergency, planning must be streamlined and cross-cutting in a manner which can only be achieved by the wider scope of local plans, rather than relying on siloed strategies for net-zero or the environment alone.

### 2.2.2 Non-quantified provisions

Beyond the impacts already laid out in this report, there are further risks associated with climate change that are not laid out with clear quantifiable tests or targets in the NPPF, despite the need for communities to adapt to these risks. However, the groundwork has absolutely been achieved that highlights where local authorities can have the greatest impact on climate resilience. The LAAP has made good effort since its formation. Alongside the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) and Defra produced in June 2019 a "Good Practice Guidance for Local Government" concerned with "Preparing for a changing climate". This document provides comprehensive information for local authorities by laying out areas of action for adaptation including business and industry, natural capital, and infrastructure.

The guidance, however, is not necessarily reflected in local plans, which are particularly lacking when it comes to considering community resilience to climate change, this may often be down to these measures being considered as part of a separate strategy which has not been integrated with the local plan.

Local plans need to present multi-faceted approaches to climate change that include especially place-based solutions, accounting for more vulnerable communities and opportunities for investment and the positive impacts that resilience measures can provide at the level of place. Clearly, there is current guidance and research that is available to planners that can support the adaptation to climate change at the level of place. However, where this guidance is unsupported by formal duties, there is an evident lack of reflection in the plans provided by local authorities. As a result, action that might be taken by local government is stymied by obstacles that would be reduced given a statutory requirement for adaptation.

### The built environment and transport networks

One of the cornerstones of local planning is in the provision and improvement of the built environment, and having resilient buildings is one of the key elements of ensuring a community is adapted to climate change. However, only 40.9 percent of the plans surveyed consider the use of building regulations such as Passivhaus for housing or BREEAM standards for construction as potential solutions to climate change, which safeguard, for example, water efficiency, in order to ensure that development remains resilient to the various impacts of increasingly extreme climate conditions. Relatedly, a vital aspect of ensuring adaptability to climate change is the provisioning of green skills and jobs that are steered specifically towards adaptation. Only four of the surveyed plans explicitly interlink their planning strategies with the provision of green skills. The London Borough of Southwark, for example, evidences a good drive towards green jobs. Additionally, Central London Forward intend to share a definition of 'green jobs' among central London boroughs, which will enable this drive for green sector jobs.

Transport is a necessary consideration for local plans, however the impacts of climate change on transport infrastructure – bridges, the highways network – are relatively overlooked. SuDS certainly form a large part of the work that enables

a road network resilient to flooding, however additional pressures such as fluctuating temperatures and other extreme weather events are less considered in local plans despite the detrimental impacts to infrastructure that they can bring. Subsidence, similarly, despite the damage that it can affect upon physical infrastructure and housing, only appeared in 6.8 percent of the surveyed local plans as a potential point of pressure due to climate change.

In the aftermath of heatwaves, there appears a high frequency of subsidence claims due to damages, which suggests a necessity for local authorities to consider the possible mitigation of subsidence within planning policies. Wildfires, similarly, need to be addressed in order to mitigate potential damages. Although wildfires have now been brought to the attention of policymakers by the Environment Improvement Plan, there is still a lack of acknowledgement of the danger of wildfires to communities and infrastructure in the country's legislature. Only one of the surveyed plans even mentioned the risk of wildfire: Rushmoor Borough Council notes in passing that wildfires can damage the natural environment. Wildfires can cause severe damage to public health and local infrastructure, and authorities can certainly work towards preparing against damaging incidents.

### Heat and buildings

It is worth drawing attention to the NPPF's focus on the risk of overheating from rising temperatures. Rising temperatures are rightfully considered to be a key risk by the Climate Change Risk Assessment, given the severe impacts to public health and infrastructure that events such as heatwaves and drought can bring to the country. Although this significant risk is outlined by the framework and as such there should be an expectation for local authorities to make appropriate measures against it, only 63.6 percent of the surveyed local plans make mention of strategies to adapt to either temperature change or to mitigate the UHI. This is potentially because, unlike flooding, there are no clear tests laid out for how decisions should be made around the risk of UHI.

Certain councils of urban areas pay particular attention to possible modes of resilience in the face of increasing risk from heat – the London Boroughs of Islington and Tower Hamlets, alongside the work of the London Environment Strategy, and the town of Harlow all provide examples of good practice in the



actions and effort necessary to mitigate this risk. However, there are some, even some urban, councils that don't directly address rising temperatures as an issue. While retrofitting and resilient buildings are a primary factor of extreme temperature adaptation, a focus on resilient buildings in reference to climate change resilience only appeared in 39.8 percent of surveyed plans.

While energy efficiency is a necessary and statutory element of development, these matters only tend to be emphasised in regard to the effort for sustainable and low-carbon living. Increasingly extreme weather in winter seasons and risks to energy infrastructure from other sources – such as the rising gas prices that have descended across Europe in the wake of the Russian invasion of Ukraine – mean that homes must be resilient to climate year-round, and furthermore that more vulnerable members of society must be fully supported at this time of climate crisis.

It should also be acknowledged that building regulations, enforced by local authorities, have been updated in 2023 to include more stringent measures on heat prevention. Embedding these measures into local development planning – and enforcing compliance – is a further challenge for resource-depleted councils trying to apply a comprehensive approach to climate resilience in place.

### Agriculture and land use diversity

Local plans, as necessitated by legislation that appears in the NPPF, do note the important of planting and protecting trees, shrubs, and other vegetation for the stability of soils, biodiversity, and particularly for flood adaptation. Some local plans go further and note the connection between green infrastructure and vegetation in mitigating rising temperatures. However, there is room for a greater focus on the use of land diversification to ensure the resilience of the agricultural sector to climate change. The local plan from Bath and North East Somerset Council provides an example of how local authorities might approach a strategy of land diversification, particularly given that the classification of land use is expected to change across the UK due to temperature fluctuations<sup>37</sup>. It should, however, be noted that there is a role for central government particularly

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37 NERC, Living With Environmental Change (2016) - Climate change impact on forestry and agriculture

in ensuring a resilient agricultural sector, for example in the role of Defra's Environment Act in the endorsement of environmental improvements.

### Working within communities

Although the NPPF does grant a wide-ranging requirement for resilience to climate change in planning, it is worth noting that not many local plans include strategies for enabling the more vulnerable demographics in their communities to be adaptable to a changing climate. As has been recently made evident by the impacts of the cost-of-living crisis, at times of emergency there are certain communities at higher risk of damages, often those of lower socioeconomic status or people, such as older people or those with existing health conditions, who are greater impacted by risks to public health. Local authorities should be making provisions for how, also, emergency services can adapt to the increasing severity of weather extremes and ensuring that public health is minimally impacted by climate change. Similarly, there is a lack of planning for how local authorities might act to improve the awareness of communities of ways in which they might act to become more resilient. Legislation and associating funding should exist to support the widespread dissemination of information that will ensure communities be as resilient as possible to climate change.

### 3. Consolidating and strengthening local resilience

It is evident that where there is a duty place on local authorities to enact adaptation to climate change, adaptation will occur. Adaptation currently takes the form of flood mitigation, water supply, biodiversity, green and blue infrastructure, mitigation of pollution, and adaptation to coastal change. Temperature change, particularly warmer summer temperatures, is a significant outlier to this pattern, as it presents a great risk to a great number of people and to infrastructure across the country, is recognised by the NPPF, and yet has seen a lack of uptake in local planning documents. Other potential risks such as wildfires, subsidence, and extreme storms similarly seem to take the backseat in local plans, with potential mitigating strategies going unconsidered. While it is often the case that local plans approach wider aspects of community resilience – for example, in the provision of green infrastructure as a multifaceted solution – there is often a lack of distinct connection between local development and impacts, both current and projected, of climate change.

Much work is already being done in the drive to net zero and reducing carbon emissions, coming off the back of the Climate Change Act of 2008 alongside efforts to reduce waste and support sustainability. Local authorities are devoted to ensuring the best possible strategies for development and the highest quality of life for constituents and as such will enact as much change as possible for the benefit of people, communities, and the environment, provided there are the resources and support available. As a result, there are plenty of examples of best practice when it comes to adaptation to environmental change and climate extremes. However, when guidance, no matter how practical and detailed, is vague and in need of balancing with multiple other obligations, it is difficult for all local authorities to respond substantially to potential risks. The NPPF does not provide the best level of in-depth instructions for what is needed to be resilient to the changing climate, and the CCA falls short of being comprehensive enough for the most necessary degree of change. This lack of detail is reflected by the inconsistency seen across local plans and local climate or environment strategies in the sphere of adaptation: the consistency seen in efforts to mitigate climate change, reduce emissions, and reach net zero needs to be reflected in efforts to adapt.

Every part of the country should be allowed the highest level of multi-dimensional resilience to the risks of climate change. The new UK Government Resilience Framework recognises the many means that the country has in its toolbox to deal with risk and recognises that resilience must require suitable preparation in addition to just emergency response, although does not necessarily provide information especially for use by local government. However, a strategy focussed on the risks of climate change alone is, at this stage, necessary. The inconsistencies in adaptation must be eliminated in order that best practice becomes common practice across the UK.

Local authorities are placed in optimum position to provide tailored adaptation to the impacts of climate change. There needs to be open-access climate risk data that considers risk at the level of place, consideration of risk at all levels and of all kinds, and there needs to be suitable responses to risk – alongside the funding and opportunity to enact these responses. Guidance stresses the importance of collating information, ensuring that public awareness is increased and that further research is undergone that will ensure the most efficient responses to the changing climate. Legislation must be able to ensure that action is being taken in all required aspects of climate adaptation, in a way which is readily available for public scrutiny. This is a case of consolidating and strengthening what exists, whilst raising the baseline across local authorities for a consistent national approach.

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