planning for the climate challenge?

understanding the performance of english local plans

tcpa

full report

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Planning for the Climate Challenge?
Understanding the Performance of English Local Plans

Town and Country Planning Association
17 Carlton House Terrace
London SW1Y 5AS
020 7930 8903
tcpa@tcpa.org.uk
www.tcpa.org.uk

acknowledgements

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executive summary

The spatial planning system provides for the democratic regulation of the built environment in the public interest, and has the potential to make a major contribution to both reducing carbon dioxide emissions and preparing for the growing impacts of climate change. This report reveals that the planning system is failing to fulfil this potential.

Despite the increasing intensity and frequency of climate-related impacts, local plans are not delivering on the basic standards set out in national law and policy for either mitigation or adaptation. To deliver the fundamental change required, climate change must be placed front and centre of the policy priorities of the spatial planning system. Only a radical refocusing of the system will meet the challenges of climate change, now and in the future.

The study underpinning this report explored how local plans published since the National Planning Policy Framework was produced in 2012 are addressing climate change. Drawing on a sample of 64 local planning authorities in total, and based on an analysis of local planning documents, a survey of local authority planners and four more-detailed, area-based case study examinations, the study established the extent to which climate change mitigation and adaptation are reflected as priorities in local plan policy in England.

The study found that local plans in England are not dealing with carbon dioxide emissions reduction effectively, nor are they consistently delivering the adaptation actions necessary to secure the long-term social and economic resilience of local communities. There was a wide variety of practice: there were some examples of positive responses, but, taken as whole, it is clear that since 2012 climate change has been de-prioritised as a policy objective in the spatial planning system. The large-scale failure to implement the clear requirements of national planning policy is a striking finding, as is the reduced capacity of the local authority planning service and the reduced capacity of Environment Agency to support the long-term plan-making process.

There are complex reasons for this situation – ranging from perceived contradictions in national policy to political signals from Ministers in the Department for Communities and Local Government and HM Treasury about the overwhelming priority to be given to the allocation of housing land. In addition, in many cases local plans do not meet national policy requirements on climate change but are still judged sound by the Planning Inspectorate. Underlying all of this is a crisis in resources in the local planning service which inhibits effective local policy-making.

The failure to use the planning system's capability to help mitigate and adapt to climate change is inefficient, and is likely to lead to long-term avoidable costs to the economy. Conversely, there is a real opportunity to harness the system as a key local part of the national response to climate change. Fulfilling this potential requires, above all else, a signal from national government that climate change is a primary political, legal and policy priority for the local plan process.

This report recommends ten actions for national and local government that could significantly and cost effectively improve the performance of local plans in relation to climate change.

key findings

Finding 1
Climate change has been de-prioritised as a significant local planning policy issue.

Finding 2
Policy and legislation on climate change are poorly understood.

Finding 3
National policy as set out in the National Planning Policy Framework and in National Planning Policy Guidance does provide for a clear approach to climate change. However, it also contains policy on viability which prevents some key actions from being delivered. In addition, changes made by subsequent amendments to energy, zero-carbon and sustainable urban drainage policies have made action on many climate change responses more difficult.

Finding 4
The evidence-gathering, methodologies and policy-making used to address flood risk were far more sophisticated than the equivalent for climate mitigation or any other aspect of adaptation. Local plans deal with carbon dioxide emissions reduction vaguely, often without an explicit methodology for measuring reductions.

Finding 5
LPAs are failing to plan for future climate change and therefore are not planning for the adaptation measures necessary to secure long-term social and economic resilience.

Finding 6
The governance of climate change issues at the local level is complex and sometimes contradictory. LPAs are not supported by a national agency to secure national carbon dioxide emissions reduction objectives, while the specific challenge of flood risk is reliant upon the support of the Environment Agency.

Finding 7
Planning requirements do not apply to a wide range of land uses, which affects local responses to climate change.

Finding 8
Specific approaches to dealing with climate change are still novel to many local authority planners, and access to affordable training is a major issue.

Finding 9
Climate-change-related policy outlined in local plans is generally short term and not sufficiently future-facing to deal with climate risk.

Finding 10
The duty to co-operate among LPAs is overwhelmingly focused upon housing growth, with little to no emphasis placed on cross-boundary climate change issues. However, strategic co-operation on issues such as evidence-gathering is a major opportunity area for climate change work.

recommendations

Recommendation 1

Re-prioritise climate change in the local plan system

The dominant pre-condition for improved outcomes on climate change mitigation and adaptation in the local plan process is a clear political signal from central government that such action is a priority outcome for the local plan. Ministers have the opportunity to clarify the place of climate change through an urgent parliamentary statement or through a chief planning officer letter to local authorities.

Recommendation 2

Provide clarity on the legal requirements on climate change

The Department for Communities and Local Government should issue a clear statement through a chief planning officer letter to make clear the nature of the requirements of Section 19 of the 2004 Planning and Compulsory Purchase Act, and in particular that all local plans must contain policy on mitigation and adaptation. Such policy must be in conformity with the National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG) requirements on climate change.

Recommendation 3

Provide clarity in national policy

Four key changes to policy set out in the NPPF are required:

- The imperative, set out in paragraph 6, that NPPF policy should be 'taken as a whole' needs to be reinforced.
- Paragraph 99 should set out a fuller range of adaptation impacts and should, along with further detail in the NPPG, reinforce the role of green infrastructure and make explicit the link between social exclusion and the impact on human health of particular aspects of severe weather resulting from climate change, such as high temperatures.
- The current definition of viability for plan-making, set out in paragraph 173, needs urgent reform. The main aspect of this reform should be to include as part of the assessment of viability not only the profitability of a development project to the developer and landowner at that time, but the wider and long-term benefits of, for example, climate resilience measures for wider society and ultimately the public purse.
- The review of the implementation of sustainable urban drainage systems (SuDS), to which the Government is committed, should focus on providing a clear indication of the current level of SuDS delivery and the split between 'normal' SuDS and 'green' SuDS.

Recommendation 4

Define the scope of climate evidence in local plans

For mitigation, scope guidelines should make a clear link between the work of the Committee on Climate Change, carbon budgets and the required action to be taken by LPAs through planning, to provide an articulation of what the NPPF currently requires in terms of 'radical reductions in greenhouse gas emissions'.

For adaptation, it is vital to set a national standard for the scope of evidence. This should include issues beyond flood risk, including temperature and a wider range of public health risks.

Recommendation 5

Deal clearly with risk

Proportionate 'rules of thumb', clearly defined as such, would be useful inputs in planning the built environment. The example of the Environment Agency flood risk allowances for climate change provides a useful starting point. Since all the impacts of climate change play out as complex probabilities (related always to aspects of local conditions), and given the scarcity of skills and resources on the ground, it would be useful to:

- Ensure a greater national determination of the probability of risk factors based on current emission trends.
- Support a simple plan-making methodology that combines nationally agreed approaches with an assessment of locally agreed circumstances.

Recommendation 6

Reform the governance of the delivery of action on climate change

At national level the Government should ensure that the Committee on Climate Change has a clear remit to support the work of local government on climate mitigation.

The governance of the delivery of local action on climate change needs wholesale review to determine how actions can be delivered more effectively.

Recommendation 7

Review the scope of the English spatial planning system

The Government should consider how an integrated strategic planning scheme might be developed for all land uses in those areas of greatest risk from climate change. The Government should reconsider the recommendations set out in the Royal Commission on Environmental Pollution's 23rd report, *Environmental Planning* (2002), for a wider remit for spatial planning – and to this end should consider commissioning an update of that report in the light of the current climate science.

Recommendation 8

Provide adequate resources to plan for climate change

Since action on climate change is a vital public interest outcome, local government should ensure that minimum service standards are maintained. National government should recognise the specific needs of those authorities experiencing or likely to experience the impacts of climate change. National government should, along with relevant departments, focus resources on a programme of support services (including training and model policy development) to aid local plan development.

Recommendation 9

Encourage spatial planning over the long term

There should be much greater emphasis on the need to plan for 50- to 100-year time horizons, to avoid lock-in to problems from maladapted developments built now. This implies greater sophistication in planning, not just for current risk factors but in a proportionate anticipation of future risks. The Environment Agency flood risk allowances for climate change provide the basis for this approach in some aspects of adaptation, but much clearer guidance should be provided to encourage actions now which will lay the foundation for future resilience.

Recommendation 10

Promote new forms of strategic co-operation

Devolution deals and the establishment of combined authorities provide opportunities to develop strategic responses to climate change. Realising this potential would require a major reorientation of such deals to prioritise action on climate change. In turn, this would require agreement from the Department for Communities and Local Government, the Department for Business, Energy and Industrial Strategy, the Department for Environment, Food and Rural Affairs, and HM Treasury.

Outside formal devolution deals, both the Environment Agency and the Department for Communities and Local Government should encourage the formation of informal groupings of local authorities that face similar climate challenges.

The local planning system must deliver the homes and communities that our nation needs, but it must do so within the context of one of the greatest challenges ever to face our society: climate change. It remains unclear whether the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement resulting from the 21st session of the Conference of the Parties (COP 21) held in December 2015 can deliver long-term climate stabilisation, but this report highlights that England's planning system is not effectively engaging with current risks and is simply disengaged from its core task of addressing long-term future change. The system remains **critically unprepared** to deliver both carbon dioxide emissions reduction and the kind of resilience measures needed to deal with the scale of the climate change impacts anticipated in the UK, as identified by the scientific evidence.

section 1
introduction

Spatial planning can make a major contribution to tackling climate change by shaping new developments and existing places in ways that reduce carbon dioxide emissions and positively support community resilience to climate impacts, such as extreme heat or flood risk. Spatial planning has the potential to deliver the right development in the right place in a fair and transparent way, informed by the imperative of sustainable development.[1] The overall objective of the research reported here is to understand whether this potential is being fulfilled in the English local planning system.

This report makes an assessment of how local spatial planning is being undertaken to address climate change, considering both mitigation and adaptation, and provides an analysis of what is actually happening at the local level. This information is vital in building resources that can best support local authority and community action on climate change.

With no national or regional spatial planning in England, the only effective tier of statutory spatial planning is the 338 local authority plans and the growing number of neighbourhood plans. The content of these plans is therefore vital in shaping the future patterns of development, from individual building standards to new energy infrastructure. Despite increasing scientific understanding of the risks and vulnerabilities faced in the UK due to climate change,[2] and the potential benefits of the solutions, there is still a significant gap between this understanding and actual outcomes for communities delivered through the planning process.

1.1 Policy and practice relevance

The local plan and neighbourhood plans are now the only statutory tier of spatial planning policy in England. Local planning operates, in theory, as a 'plan-led system' within which local plans should be the key consideration in shaping how communities develop, providing an arena for community participation. Since 2011, neighbourhood plans have become a new and powerful aspect of local plan policy, providing, within strict limits, for the expression of community aspirations.

There are 338 local planning authorities (LPAs) in England (including districts, unitaries, London

Notes

1 As defined in *Securing the Future – Delivering UK Sustainable Development Strategy*. The UK Government Sustainable Development Strategy. Cm 6467. HM Government. TSO, Mar. 2005. https://www.gov.uk/government/publications/securing-the-future-delivering-uk-sustainable-development-strategy

2 As identified in *UK Climate Change Risk Assessment 2017*. Committee on Climate Change, Jul. 2016. https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/climate-change-risk-assessment-2017/ and in *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* Intergovernmental Panel on Climate Change, 2014. https://www.ipcc.ch/report/ar5/syr/

boroughs and some National Park authorities). According to the latest figures, approximately 39% have an adopted core strategy (or one that has been found sound since the publication of the National Planning Policy Framework (NPPF) national policy document in 2012), 16% have a published core strategy, and 45% have no core strategy approved post-2012.[3] The process of plan adoption involves an examination by the Planning Inspectorate, called the soundness test, which includes consideration of whether such plans are compliant with national policy. Once adopted, the expectation is that development should be approved in accordance with the plan. Neighbourhood plans are part of this local plan framework but are led by neighbourhood forums or parish councils. Such plans must be in conformity with the local plan and national policy.

To complicate matters, there has been both a reduction of local control over the change of use of buildings and new central direction of policy on what local plans should consider. Significantly, the Housing and Planning Act 2016 has introduced a system under which some forms of development allocated in a local or neighbourhood plan will benefit from what the Government has described as 'automatic planning permission'.[4] This measure, known as 'permission in principle', has the potential to increase the importance of local plan policy.[5]

Given the importance of the local development plan, its contents are not simply a matter for local determination. There are extensive legal and national policy requirements enforced by the Planning Inspectorate's role in testing local plans and through the very extensive reserve powers of the Secretary of State. Unpublished legal advice for the cross-sector Planning and Climate Change Coalition has confirmed that the climate change duty set out in Section 19 of the 2004 Planning and Compulsory Purchase Act requires that local plans 'must' have robust climate change policy on climate mitigation and adaptation.[6] The NPPF makes clear the need for 'radical' reductions in carbon dioxide emissions in line with the 2008 Climate Change Act objectives.[7] The National Planning Practice Guidance (NPPG) provides an approach to monitoring carbon.[8] In practical terms, and given the policy in the NPPF, this means that all local plans should set out a clear carbon dioxide emissions reduction trajectory, in line with the emissions reductions required by the Climate Change Act 2008. This legal advice also found that this duty has greater weight than the viability test set out in the NPPF. A critical issue is how local plans respond to a duty that is not well understood in practice.

In addition to presenting the findings of the study that underpin it, this report makes a series of positive recommendations for national and local government, looking at both the policy framework and plan-making practice. In doing so, it addresses how the key narrative of reducing overall carbon dioxide emissions and building climate resilience can be woven through spatial planning policy at national and local levels.

Notes

3 *Local Plans (Strategic Issues/'Core Strategies') Progress*. Planning Inspectorate, Oct. 2016. https://www.gov.uk/guidance/local-plans

4 *Fixing the Foundations: Creating a More Prosperous Nation*. Cm 9098. HM Treasury, Jul. 2015. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443897/Productivity_Plan_print.pdf

5 See Section 150 of the Housing and Planning Act 2016. TSO. http://www.legislation.gov.uk/ukpga/2016/22/pdfs/ukpga_20160022_en.pdf

6 An overview of this policy and the legislation can be found in Section 2 of this report

7 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraph 93. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

8 'Renewable and low carbon energy'. ID: 5. Updated 18 Jun. 2015. National Planning Practice Guidance. http://planningguidance.communities.gov.uk/blog/guidance/renewable-and-low-carbon-energy/

section 2
background

2.1 A changing context

The planning system in England has been subject to an intense period of structural and legal change since 2010, ranging from the abolition of regional-level strategic planning to the introduction of neighbourhood plans, and latterly the further deregulation of permitted development. Changes to policy introduced through the NPPF (published in 2012) and NPPG (issued in 2013) have been equally 'radical', with both a streamlining of guidance and a refocusing of the system on economic growth. While some aspects of the Government's reform package will take time to embed, some clear trends are emerging.

One striking factor is that the general standing of spatial planning, as a mainstream part of wider public policy, is at a historically low ebb. This is not only reflected in central government priorities, but is also apparent within many local authorities, where planners are not always represented at top managerial grades. Despite the demonstrable opportunities to achieve multiple benefits through the planning system, from economic growth to delivering sustainable energy use and improvements in public health, the reform of the planning system has been driven by an assumption that planning is a brake on the economy. Government policy has broadly supported this view and is reflected in the deregulation of planning powers and in specific announcements on the cancellation of the 2016 'zero-carbon homes' commitment and the Code for Sustainable Homes and the effective moratorium[9] on onshore wind energy, along with the NPPF viability test.

Resourcing the planning system is also a major factor in providing an efficient and skilled service. Planning has been disproportionately hit by cumulative local government spending cuts,[10] and although local authority experience varies widely, the overall cut to the planning service has been between 30%[11] and 45%[12] between

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9 Created by revisions to National Planning Policy Guidance and new policy set out in *Ending New Subsidies for Onshore Wind*, Written Statement (HCWS40) by the Secretary of State for Energy and Climate Change, 18 Jun 2015. http://www.parliament.uk/documents/commons-vote-office/June%202015/18%20June/2-DECC-Wind.pdf

10 A. Hastings, N. Bailey, G. Bramley, M. Gannon and D. Watkins: *The Cost of the Cuts: The Impact on Local Government and Poorer Communities*. Joseph Rowntree Foundation, Mar. 2015. https://www.jrf.org.uk/report/cost-cuts-impact-local-government-and-poorer-communities; and *The Impact of Funding Reductions on Local Authorities*. National Audit Office, Nov. 2014. https://www.nao.org.uk/report/the-impact-funding-reductions-local-authorities/

11 D. Innes and G. Tetlow: *Central Cuts, Local Decision-Making: Changes in Local Government Spending and Revenues in England, 2009-10 to 2014-15*. IFS Briefing Note BN166. Institute for Fiscal Studies, Mar. 2015. http://www.ifs.org.uk/uploads/publications/bns/BN166.pdf

12 A. Hastings, N. Bailey, G. Bramley, M. Gannon and D. Watkins: *The Cost of the Cuts: The Impact on Local Government and Poorer Communities*. Joseph Rowntree Foundation, Mar. 2015. https://www.jrf.org.uk/report/cost-cuts-impact-local-government-and-poorer-communities; and *The Impact of Funding Reductions on Local Authorities*. National Audit Office, Nov. 2014. https://www.nao.org.uk/report/the-impact-funding-reductions-local-authorities/

2010 and 2015.[13] In real terms, this means a loss of staff with expertise in climate-related policy-making, particularly on energy (which in any case was a new skill set for planners). The cuts also have impacts on the degree to which local plans can be made genuinely participative.

2.2 The legislative and policy context for local plans

Local authorities face various legal duties related to climate change and planning, set out in both planning and climate-change-related legislation, as well as additional national policy guidance. Details of the core requirements are set out below.

2.2.1 The Planning and Compulsory Purchase Act 2004

LPAs are bound by the legal duty in Section 19 of the Planning and Compulsory Purchase Act 2004, as amended by Section 182 of the Planning Act 2008, to ensure that, taken as a whole, plan policy contributes to the mitigation of, and adaptation to, climate change. Section 19 states:

> '*Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change.*'

This is a powerful outcome-focused legal duty on LPAs and signals the clear priority to be given to climate change in the plan-making process. In discharging this duty, local authorities should consider Section 10 (paragraphs 93-108) of the NPPF and ensure that policies and decisions are in line with the objectives and provisions of the Climate Change Act 2008 (Section 1) and support the National Adaptation Programme (NAP).

2.2.2 The Planning Act 2008

The Planning Act 2008 introduced a new planning regime for nationally significant infrastructure projects, including energy generation plants of capacity greater than 50 megawatts (50 MW). The Government has produced National Policy Statements (NPSs) which will guide decisions on such projects. Alongside this regime, there is a duty (introduced by the Planning Act 2008, as noted above) on local development plans to include policies which make a contribution to both climate mitigation and adaptation. LPAs should apply aspects of the NPS policy to planning applications for renewable energy.

2.2.3 The Climate Change Act 2008

The Climate Change Act 2008 introduced a statutory target for the UK to reduce carbon dioxide emissions by at least 80% below 1990 levels by 2050, with an interim target of 34% by 2020. Government departments have prepared carbon budgets to indicate how greenhouse gas emissions will be reduced across the government estate and in sectors where departments take a policy lead.

The Act also created a framework for climate change adaptation. The first UK Climate Change Risk Assessment (UKCCRA) was published in January 2012[14] and a National Adaptation Programme (NAP) was published in 2013,[15] with planning and the built environment as one of the key sectors, or themes. The UKCCRA and the NAP are to be updated every five years, and a second UKCCRA evidence report[16] has now been published by the Adaptation Sub-Committee (ASC) of the Committee on Climate Change (CCC). The implementation of the NAP is under way, while the development of the updated programme will start in 2017. The UKCCRA and NAP provide a high-level evidence base which should inform priorities for action and appropriate adaptation measures.

Notes

13 *Investing in Delivery: How We Can Respond to the Pressures on Local Authority Planning*. RTPI Research Report 10. Arup for RTPI North West Region. Royal Town Planning Institute, Oct. 2015. http://www.rtpi.org.uk/investingindelivery

14 *The UK Climate Change Risk Assessment 2012: Evidence Report*. Department for Environment, Food and Rural Affairs, Jul. 2012. http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=15747

15 *The National Adaptation Programme: Making the Country Resilient to a Changing Climate*. HM Government, Jul. 2013 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209866/pb13942-nap-20130701.pdf

16 *UK Climate Change Risk Assessment 2017: Synthesis Report: Priorities for the Next Five Years*. Committee on Climate Change. Jul. 2016. https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/climate-change-risk-assessment-2017/

2.2.4 The National Planning Policy Framework (NPPF)

The NPPF sets out the key national planning priorities for England. It replaced Planning Policy Statements (PPS), including those relating to climate change – the climate change supplement to PPS1, PPS22 on renewable energy and PPS25 on flood risk. The NPPF must be taken into account in the preparation of local and neighbourhood plans.

The NPPF is accompanied by further technical guidance in the NPPG on flood risk. In addition, the NPPF makes clear that National Policy Statements, including, for example, that on renewable energy, are material to decision-making in town and country planning decisions. This collectively forms the relevant national planning policy. It is also important to note that the NPPF directly cites the Climate Change Act 2008 as a relevant consideration in decision-making. This has the effect of making the objective of reducing carbon dioxide emissions by 80% by 2050 relevant to the discharge of the duty on planning authorities to shape policy that reduces carbon dioxide emissions. As a result, LPAs must have a clear grasp of their carbon profile, and their policy should support 'radical' reductions in carbon dioxide emissions.[17]

The NPPF viability test

The 'viability test'[18] is designed to ensure that local plan policy, taken as a whole, does not compromise the ability of willing landowners and willing developers to make competitive returns. This has been interpreted as meaning that a wide range of policy, including, for example, policies on sustainable urban drainage systems, green infrastructure and renewable energy requirements, can be removed if it can be demonstrated that they will compromise the profit margins of developers and landowners.

The Planning Inspectorate (PINs), which tests all local plans prior to adoption, is the arbiter of whether objections to the plan based on viability are upheld. Significantly, these objections have most impact on low-demand areas, where the economic viability of a scheme can be at its weakest.

The NPPF strongly reinforces the plan-led system as the key way to deliver sustainable development over the long term, allowing for proper engagement with communities. The presumption in favour of sustainable development[19] set out in the NPPF is an operational principle for plan-making and development management. This 'golden thread' reinforces the need for positive evidence-based plans which objectively meet the development needs of their communities, unless to do so would result in demonstrable harm or conflict with the objectives of the NPPF.

A plan-led system?

Both the policy in the NPPF and, as a matter of legal fact, the planning legislation establish the planning system as 'plan-led'. However, in practice the position is much more complex. The system has always recognised that plans which are obviously out of date might carry less weight, and that plans which are under formulation but not yet adopted could carry some weight. After the publication of the NPPF in 2012 the position became even more complex. The presumption in favour of sustainable development applies to plans which are 'silent or out of date'. In practice, this has been taken to mean that there is a need to demonstrate, at any time, a viable and developable five-year housing land supply. No plans have been judged 'out of date' on carbon dioxide emissions performance, or because they fail to meet wider sustainable development objectives.

The problem is that demonstrating a five-year housing land supply is a matter for judgement. A newly adopted plan is vulnerable to being ruled out of date if its designated sites can be shown to be undeliverable. Developers can appeal refusal on this basis, and have won both appeals and High Court decisions by applying this argument. Since the rate of deliverability of housing sites is controlled by the developer and is not normally within the gift of the planning authority, defending plan allocations can be complex. One

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17 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraph 93. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

18 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraphs 173-177. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

19 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraph 14. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

output of this trend is the historically high levels of successful appeals for major housing schemes, which are currently running at a 45% success rate and have touched 50% success rates over the last two years. This compares with a historic average of around 30%, and with a figure of 42% in 1987 during a period in which there was an outcry against 'planning by appeal'. The adoption of the plan-led system in 1990 was a direct response to this public concern.

The unsafe nature of a newly adopted local plan could be a fair reflection of its failure to deal with housing demands – although if it had passed through a soundness test, this should not be the case. The impact of such uncertainty on the reputation of the plan-led system among the public is potentially negative. There is little point in involving the community in plan-making, often for several years, if the results can be overturned within months of adoption.

Part of the justification for the five-year housing land supply requirement is to incentivise those LPAs that have taken far too long to put a local plan in place. However, the degree to which it does so when adopted plans are vulnerable to appeal is questionable. In any event, where a plan is out of date, the policies may carry little weight and decisions are made based on the NPPF framework. This report illustrates that the NPPF is not a guarantee of sustainable outcomes; nor is its policy often applied 'as a whole'.

The importance of proportionate evidence

The NPPF supports the requirement for objective and proportionate evidence bases for plan-making. In relation to both carbon and key adaptation data, the NPPF emphasises the opportunity to share data across local authority boundaries as part of the wider commitment to fulfil the duty to co-operate.

Climate change as a core NPPF planning principle

The NPPF makes clear that climate change is a core planning principle. Paragraph 17 states that planning should:

> *'support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy)'.*

To be in conformity with the NPPF, local plans should reflect this principle, ensuring that planning policy clearly and comprehensively deals with climate change mitigation and adaptation.

NPPF climate mitigation policy

The NPPF sets out a positive vision for local plans in order to *'secure radical reductions in greenhouse gas emissions'*.[20] Paragraph 94, footnote 16 of the NPPF makes clear that decisions should be in line with the Climate Change Act 2008. The core provision of this Act is the reduction of carbon dioxide emissions by 80% by 2050. Local plans have a clear opportunity and obligation to contribute to the trajectory required to meet this standard.

Paragraph 95 of the NPPF makes clear that this can be achieved by shaping the location and design of development, by supporting energy efficiency in existing buildings, and by setting local requirements for building sustainably, as long as these are in line with and do not exceed national standards. The NPPF encourages new development to 'take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption'.[21] In planning for renewable energy, local authorities are encouraged to be positive by identifying suitable areas for renewable energy generation and its supporting infrastructure, and by maximising the opportunities for community-led and decentralised energy production.[22]

NPPF climate adaptation policy

Paragraph 99 of the NPPF states that:

> *'Local plans should take account of climate change over the longer term, including factors such as flood risk, coastal change, water supply and changes to biodiversity and landscape. New development should be*

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20 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraph 93. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

21 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraph 96. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

22 *National Planning Policy Framework*. Department for Communities and Local Government, Mar. 2012, paragraph 97. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure.'

Taken as a whole, the NPPF requires LPAs to have a holistic understanding of climate adaptation, ranging from flood risk to increased temperatures and heat stress. Local plans should play a full part in building community resilience to a changing climate.

2.2.5 The Planning and Energy Act 2008

The Planning and Energy Act 2008 set out powers for local authorities to require a proportion of the related energy need from new development to be generated onsite. It also enabled local authorities to require standards for energy efficiency in new buildings.

In 2015 the energy efficiency requirements were repealed to effectively make Building Regulations the sole authority regarding energy efficiency standards for residential development.[23] This means that local authorities can no longer require their own energy efficiency standards. However, the power to require a proportion of energy need to be met onsite remains.

2.2.6 The Flood and Water Management Act 2010

The Flood and Water Management Act 2010 addresses the threat of flooding and water scarcity. Responsibilities set out under the Flood Risk Regulations make the Environment Agency responsible for managing flood risk from main rivers, the sea and reservoirs. Lead local flood authorities (LLFAs)[24] are responsible for local sources of flood risk, in particular from surface run-off, groundwater and ordinary watercourses. Local authorities are responsible for ensuring that new requirements for preliminary flood risk assessments and for approval of sustainable drainage systems are met.

2.2.7 The Localism Act 2011

The Localism Act 2011 instituted far-reaching reform of the planning system which handed new opportunities to communities, bringing about changes at all levels of planning:

- ***Strategic level:*** The Act abolished the regional tier of planning and replaced it with a 'duty to co-operate' in relation to the planning of the sustainable development of land.
- ***Local level:*** The basic structure of local planning remained unchanged but the content of local plans is now shaped by the content of the NPPF, published in 2012.
- ***Neighbourhood level:*** The Act introduced a voluntary neighbourhood planning process, including neighbourhood development plans (NDPs) and neighbourhood development orders (NDOs). Once prepared and examined these are adopted as part of the local development plan.

Local authorities can use the different provisions in the Localism Act to take action on climate change. In particular, NDPs and NDOs can be useful for community action on climate change, and the duty to co-operate is important in cross-boundary adaptation and mitigation activities.

2.2.8 The EU Renewable Energy Directive

In response to EU Directive 2009/28/EC on the promotion of the use of energy from renewable sources, the UK has committed to sourcing 15% of its energy from renewable sources by 2020 – almost a seven-fold increase on its actual share of about 2.25% in 2008, in scarcely more than a decade. The future of all EU-derived law and policy is in question after the Brexit referendum.

Applications for renewable energy developments generating under 50 MW and all onshore wind proposals are decided by local authorities. In order to achieve the renewable energy target, all local authorities will need to engage in identifying and approving appropriate renewable energy development.

Notes

23 More detailed research on this can be found in *The Future of Policy and Standards for Low and Zero Carbon Homes*. Royal Institution of Chartered Surveyors, Feb. 2016. http://www.rics.org/uk/knowledge/research/research-reports/future-of-policy-and-standards-for-low-and-zero-carbon-homes/

24 In two-tier areas flooding is managed by the county council, while planning is managed at district level

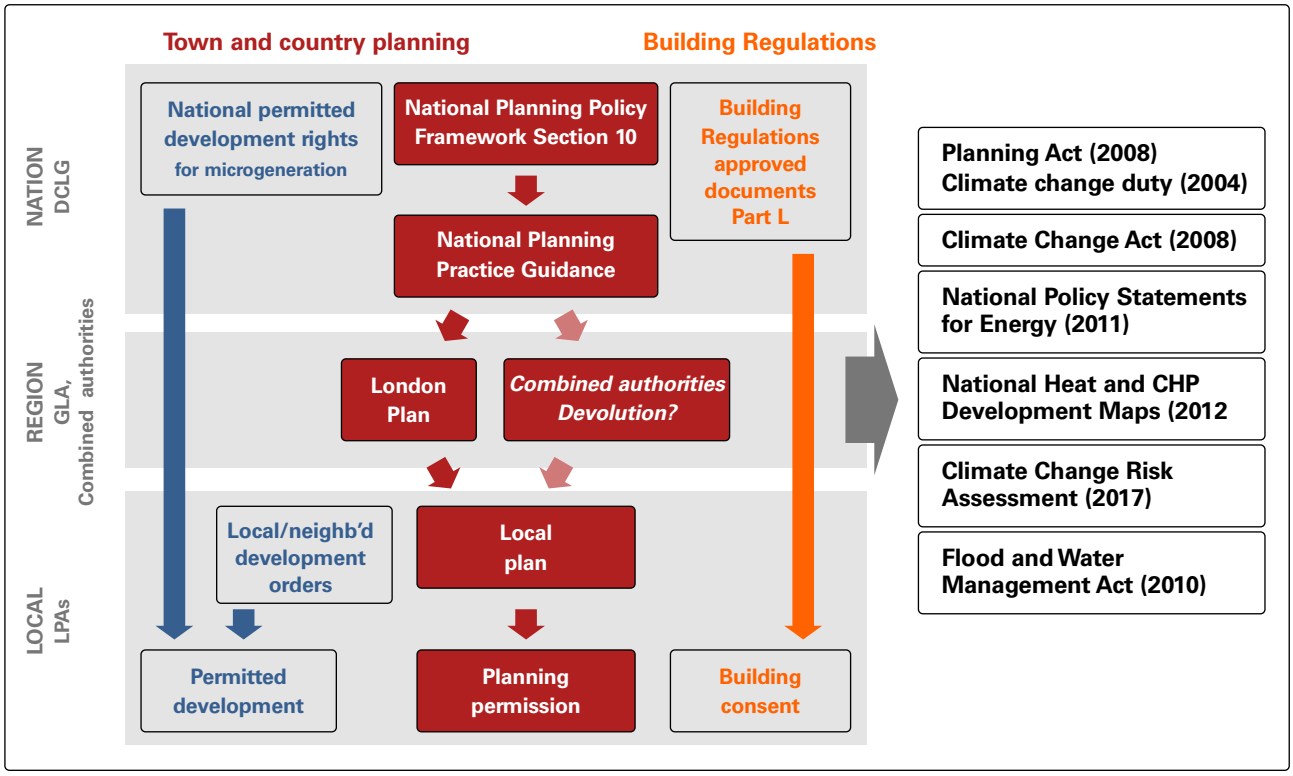

Figure 1 The relationship between planning and climate change considerations in the English planning system

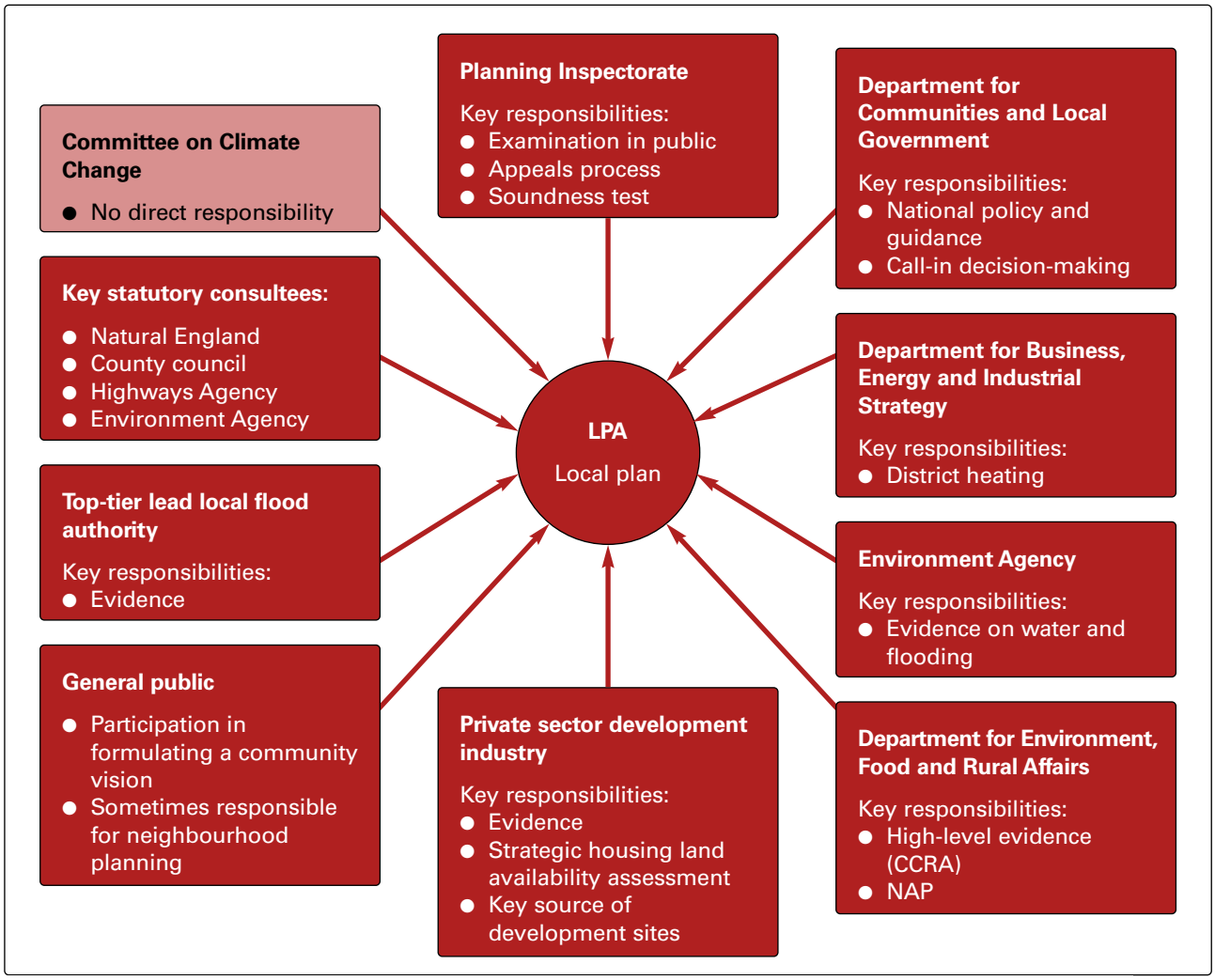

Figure 2 Institutions and bodies with a role in local planning for climate change

Box 1
The role of the Environment Agency in relation to flood risk

- ***Strategic overview role:*** As set out in the Flood and Water Management Act 2010, the Environment Agency, with others partners, draws up the National Flood and Coastal Erosion Risk Management Strategy for England. Successful implementation of the strategic overview ensures that the risks of flooding from all sources and through coastal erosion are properly managed by using the full range of options in a co-ordinated way.

- ***Planning role:*** The Environment Agency has a statutory role to advise on all development except minor development[25] in flood zone 2 and 3 areas (covering risk of flooding from rivers and the sea) and in critical drainage areas (covering surface water flooding). The Environment Agency does not have a remit to advise on surface water flooding issues outside of critical drainage areas.

- ***Guidance on flood risk:*** The Environment Agency provides guidance on how to complete flood risk assessments[26] and strategic flood risk assessments.[27] It also sets out flood risks allowances for climate change to help developers and local authorities understand how climate change is likely to affect flood risk in their area.

- ***Data and information on flood risk:*** The Environment Agency provides the *Flood Map for Planning*, showing flood zones 2 and 3 locations. It also produces flood modelling in many parts of the country to aid the understanding of local flood risk. This information is made available free of charge to developers and local authorities, through the Spatial Data Catalogue,[28] to help them understand local flood risk.

2.2.9 Other climate-related policy and responsibilities

The NPPF addresses a number of related policy issues, and in particular Section 4 emphasises the need to encourage sustainable transport modes and to locate development to reduce the need to travel. A significant amount of other policy has been put in place that affects planning and the policies that underpin plan-making and development management. The following list of other policies of relevance listed below, while not exhaustive, demonstrates how much change has been introduced in recent years:

- Climate change projections were updated in 2009 by the Meteorological Office and used in the UK Climate Impacts Programme (UKCP09). These set out three global emissions scenarios based on high, medium and low forecasts for a range of climate- and weather-related impacts, such as temperature, rainfall, flooding and other extreme weather events. The UKCP09 projections are in the process of being updated again.
- The EU's Transport White Paper, published in 2011, established a roadmap for a single European transport area, with a 2050 objective of a 60% cut in transport emissions. This is to be achieved through key goals of removing all conventionally fuelled cars in cities, a switch to 40% low-carbon fuel use in aviation, and a 50% shift of freight

Notes

25 Defined as minor non-residential extensions of less than 250 square metres, householder development and alterations that do not increase the size of buildings, in paragraph 46, 'What is meant by 'minor development' in relation to flood risk', of 'Flood risk and coastal change'. Reference ID: 7-046-20140306. Updated 6 Mar. 2014. National Planning Practice Guidance. http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/what-is-meant-by-minor-development-in-relation-to-flood-risk/

26 Available at the Department for Environment, Food and Rural Affairs and Environment Agency 'Guidance: Flood risk assessment for planning applications' webpages, at https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications

27 Available at the Department for Environment, Food and Rural Affairs and Environment Agency 'Guidance: Local planning authorities: strategic flood risk assessment' webpages, at https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment

28 The Environment Agency's Spatial Data Catalogue is at http://environment.data.gov.uk/ds/catalogue/index.jsp#/catalogue

journeys from road to rail and waterborne transport.

- The Adaptation Sub-Committee of the Committee on Climate Change's 2015 report assesses the UK's preparedness for climate change and identifies policy recommendations.
- The Heat Strategy and National Heat Map published by the Department for Energy and Climate Change in March 2012 provides a strategic framework for low-carbon heat. The map is a spatial plan of building heat demand for all of England, designed to help planners develop low-carbon heating solutions.
- The target to meet a standard of 'zero-carbon homes' by 2016 was abandoned in 2015 for domestic buildings.

Figure 1 illustrates the interaction of this national planning policy and legislation with the local and neighbourhood context. Figure 2 provides an overview of the roles and responsibilities of the institutions involved in planning for climate change in England at the local level. This provides a non-exhaustive illustration of the duties during local plan development, examination and delivery. It should be noted that this is an over-simplification in that it omits any hierarchies between actors and does not provide in-depth detail about the many different sectors that are involved in planning processes. Box 1 outlines the specific role of the Environment Agency in relation to flood risk.

This context constitutes the national legislative and policy compliance frameworks for mitigation and adaptation, which are set out in Tables 1 and 2.

Table 1
Overview of the mitigation compliance framework for local plans

Plan stage	Law	NPPF (2012)	NPPG (2013)	Guidance from statutory bodies
Evidence-gathering	Section 19 of the Planning and Compulsory Purchase Act (PCPA) 2004; Climate Change Act 2008	Paragraphs 93-108, 158, 162, 165, but no specific reference to carbon	'Climate change' section, paragraph 003-008; 'Renewable and low carbon energy' section, paragraphs 001-003; 'Viability' section, paragraphs 001-024	N/A
Engagement	PCPA 2004; Localism Act 2011	Paragraph 178	'Local plans' section, paragraph 017	N/A
Policy formulation	Section 19 of the PCPA 2004; Climate Change Act 2008	Paragraphs 17 (Core planning principles), 93-108, 156	'Climate change' section, paragraphs 007-011; 'Renewable and low carbon energy' section, paragraphs 001-003; 'Viability' section, paragraphs 001-024	N/A
Policy testing	Section 19 of the PCPA 2004; Climate Change Act 2008	Paragraph 182 (on soundness)	'Climate change' section, paragraphs 007-011; 'Renewable and low carbon energy' section, paragraphs 001-003; 'Viability' section, paragraphs 001-024	Planning Inspectorate local plan examination procedure
Policy outcomes	Section 19 of the PCPA 2004; Climate Change Act 2008	Paragraphs 17 (Core planning principles), 93-108	'Climate change' section, paragraphs 007-011; 'Renewable and low carbon energy' section, paragraphs 001-003	N/A
Delivery and actual outcomes		Paragraphs 96, 186-198		N/A
Monitoring and review			'Local plans' section, paragraph 027	N/A

Table 2
Overview of the adaptation compliance framework for local plans

Plan stage	Law	NPPF (2012)	NPPG (2013)	Guidance from statutory bodies
Evidence-gathering	Section 19 of the Planning and Compulsory Purchase Act (PCPA) 2004; Climate Change Act 2008; Water Management Act (SFRA) 2010	Paragraphs 94 (footnote 16), 158, 165-168	'Climate change' section, paragraphs 004-006; 'Flood risk and coastal change' section, paragraphs 001-030; 'Water supply, wastewater and water quality' section, paragraphs 001-006; 'Viability' section, paragraphs 001-024	National Adaptation Programme; Environment Agency (EA) climate change flood allowances; UK Climate Impacts Programme (UKCP09)
Engagement	PCPA 2004; Localism Act 2011	Paragraph 178	'Consultation and pre-decision matters' section, paragraphs 001-031; 'Duty to cooperate' section, paragraphs 001-023	
Policy formulation	Section 19 of the of PCPA 2004; Climate Change Act 2008; Planning and Energy Act 2008	Paragraphs 17 (Core planning principles), 93-108, 150-158, 165-168, 173 (on plan-making and viability)	'Climate change' section, paragraphs 004-006; 'Flood risk and coastal change' section, paragraphs 001-030; 'Water supply, wastewater and water quality' section, paragraphs 001-006; 'Viability' section, paragraphs 001-024	EA guidance documents
Policy testing	Section 19 of the PCPA 2004; Climate Change Act 2008; Planning and Energy Act 2008	Paragraph 182 (on soundness)		EA guidance documents

Continued on page 18

Table 2
Overview of the adaptation compliance framework for local plans (continued)

Plan stage	Law	NPPF (2012)	NPPG (2013)	Guidance from statutory bodies
Policy outcomes	Section 19 of the PCPA 2004; Climate Change Act 2008	Paragraphs 17 (Core planning principles), 93-108	'Climate change' section, paragraphs 004-006; 'Flood risk and coastal change' section, paragraphs 001-030; 'Water supply, wastewater and water quality' section, paragraphs 001-006	EA guidance documents
Delivery and actual outcomes	(Section 19 of the PCPA 2004 applies only to plan-making, not to development management decisions)	Paragraphs 102, 103, 186-198	'Flood risk and coastal change' section, paragraphs 009-012	
Monitoring and review			'Local plans' section, paragraph 027	EA guidance documents

section 3
a brief review of existing research

There is an extensive literature on spatial planning and climate change. However, a much more limited literature exists around the current condition of planning for climate change mitigation and climate change adaptation in England. Research published since the NPPF was issued in 2012 has focused on conceptualising the risks of climate change impacts; the impacts of changes to policy, legislation and government initiatives for enabling climate action; the relationship between existing impacts (such as flooding) and responses to them; and the capacity of local government to respond. This Section examines each of these areas in turn.

3.1 Climate risk and vulnerability

The important role of planning and the built environment in climate change adaptation and mitigation was reflected in the *UK Climate Change Risk Assessment 2017: Evidence Report*[29] published by the Climate Change Committee in accordance with the obligations of the Climate Change Act 2008. The UK Climate Change Risk Assessment provides a high-level, authoritative and evidence-based perspective on the risks of climate change. It identifies the direct threats to the UK as exposure to high temperatures and heatwaves, large increases in flood risk compounded by water shortages, and substantial risks to natural ecosystems, food security and human health. It demonstrates the significant challenges that climate change poses to towns and cities, to the people who live and work there, and to the natural environment.

A comprehensive understanding of risk, and the co-ordination of a robust response, are therefore fundamental cornerstones of planning for resilient places now and into the future. The Intergovernmental Panel on Climate Change (IPCC) suggests that if responses to climate risk are to be effective they must be evidence-based, interdisciplinary, outcome-focused and cross-sector, despite the associated uncertainty.[30] Responses must also be relative to the timescale of the risk – spatial planning provides an opportune framework for this.

However, research by the Sustainability Research Institute[31] has highlighted that climate projections are not being integrated into local planning processes in England. If local planning is not informed by an understanding of projected climate risks, this may, in turn,

Notes

29 *UK Climate Change Risk Assessment 2017.* Committee on Climate Change, Jul. 2016. https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/climate-change-risk-assessment-2017/

30 *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* Intergovernmental Panel on Climate Change, 2014. https://www.ipcc.ch/report/ar5/syr/

31 S. Lorenz, S. Dessai, P.M. Forster and J. Paavola: *Use of Climate Projections in Local Adaptation Planning: Lessons from England and Germany.* Briefing Note No. 9. Sustainability Research Institute, University of Leeds, Aug. 2016. http://www.see.leeds.ac.uk/fileadmin/Documents/research/sri/briefingnotes/SRIBNs-9.pdf.pdf

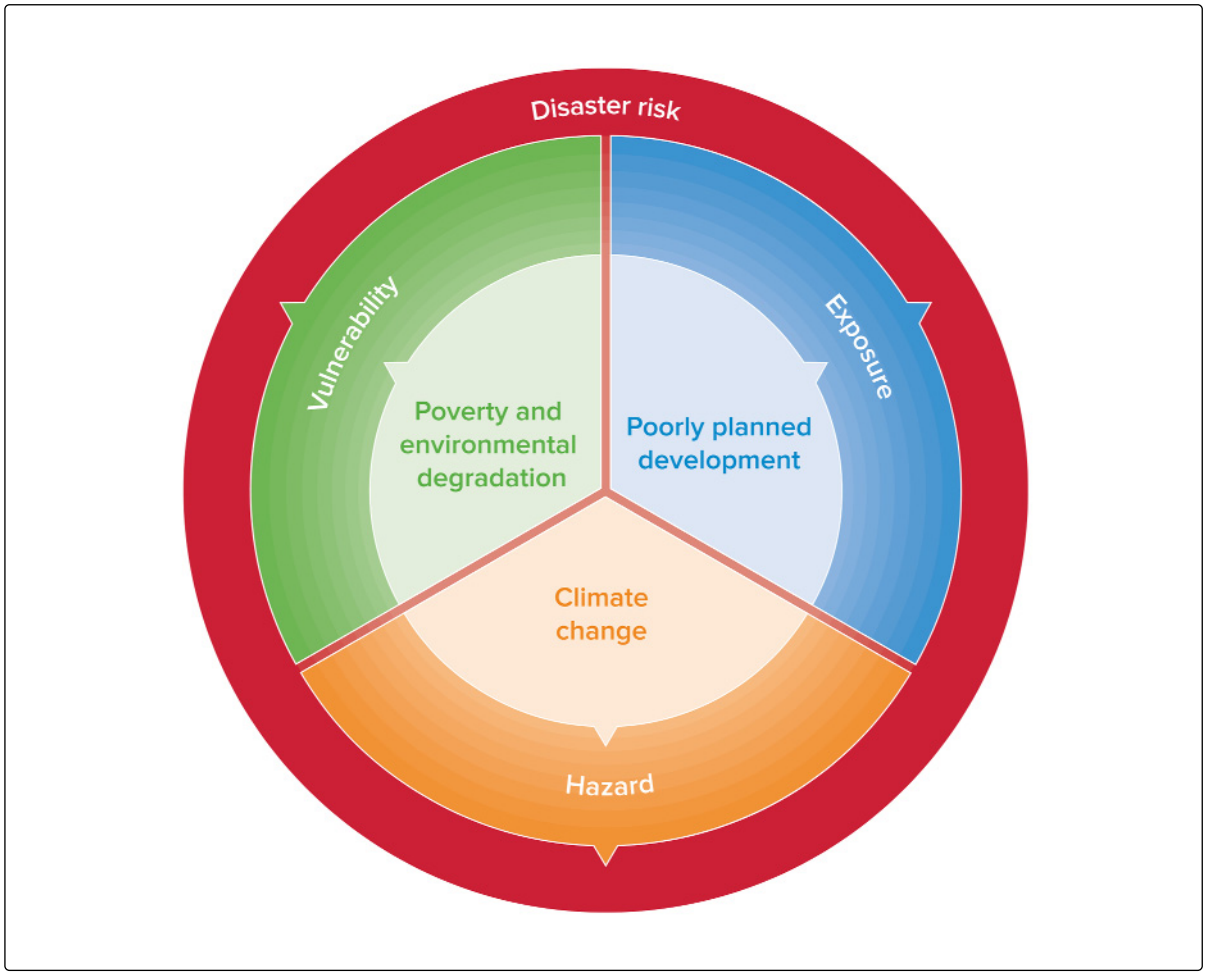

Figure 3 Understanding risk

Source: Resilience to Extreme Weather. Royal Society[32]

undermine the robustness of local climate policy outcomes.

The literature on conceptualising climate risk is extensive. The interrelationships between vulnerability and exposure to hazards are illustrated in work produced by the Royal Society (see Figure 3[32]).[33] A spatial picture of England's social vulnerability to climate change at neighbourhood scale has been developed through the Climate Just[34] web tool (available publicly as an online resource and mapping tool). It identifies local climate disadvantage as an outcome of exposure to climate hazards combined with social vulnerability. Climate Just can be used as a planning tool in conceptualising and understanding risk locally.

It is important to note, however, that in addition to social vulnerability, poorly planned development, unsustainable environmental management and poor-quality construction are all drivers that can increase exposure to climate change risks.

3.2 Planning and climate change

The literature relevant to spatial planning for both climate change adaptation and mitigation in the UK is more limited. The recent reports and literature relevant to this study have been categorised into those relating to adaptation to climate change and climate change mitigation below.

Notes

32 *Resilience to Extreme Weather.* Royal Society, Nov. 2014. https://royalsociety.org/topics-policy/projects/resilience-extreme-weather/

33 *Ibid.*

34 See the Climate Just website, at http://www.climatejust.org.uk. The materials in the website are produced by a partnership including the University of Manchester, the Joseph Rowntree Foundation, the Environment Agency, JBA Consulting, the Centre for Sustainable Energy, and Climate UK

3.2.1 Adaptation to climate change

Some of the literature suggests that the ways in which adaptation is framed in the UK has led to short-term adaptation strategies rather than long-term solutions,[35] highlighting the importance of the policy wording that is used in local development planning documents and the extent to which it enables resilience-building in UK city-regions. Similarly, research undertaken for the Adaptation Sub-Committee (ASC) on local authority action in climate change adaptation provided a snapshot of planned climate change adaptation activity by local authorities[36] and found that 60% of post-NPPF plans addressed current climate risks while only 40% considered future climate change. The dominant risk factor identified by LPAs was the risk of flooding, which is likely to reflect the flood risk management legislation and policy in place for promoting flood resilience.

More recently, and following the increased frequency of severe flood events around the UK, there has been a particular research emphasis on the effectiveness of flood policy within local plans. This has also included research into decision-making on development in flood risk zones. The ASC[37] found that between 2008 and 2014 11% of new development was allocated in the floodplain, and that in some vulnerable counties the proportion had increased compared with previous years. It also highlighted that, in compliance with national planning policy, new homes in areas of high flood risk are assumed to include safeguards to avoid flood damage. However, the same strong planning obligations are less likely to be applied to new development beyond existing flood defences. In the eventuality that existing defences are overtopped, these developments will be much more exposed and vulnerable. As a result, consideration of the future extent of the floodplain is imperative for robust planning for climate change adaptation. New development on floodplains can add to the long-term flood risk and to the costs of future flood prevention.

In assessing the consideration of flood risk by Scottish LPAs, LUC found[38] that there are challenges in accessing local flood data for planning purposes, and, that while the local development planning system worked when measured against policy compliance, there were challenges in applying flood risk policies. Furthermore, the research highlighted the importance of local authority officers in efforts to plan for flooding, but found that, although there was an awareness of climate change among staff, this did not translate into a detailed understanding of risk. These findings are in line with the situation highlighted by the House of Commons Environmental Audit Committee report on flooding,[39] which found that, in offering insufficient support to LPAs for the development of local flood plans under the NPPF, the Government was failing to protect communities at risk of flooding.

The *Future Flood Prevention* report published by the Environment Food and Rural Affairs Committee in November[40] reiterated the importance of integrating spatial planning and flood resilience. It highlighted that, rather than the current focus on investing in the continual extension of mitigation measures, more work is needed to improve resilience to flooding, especially in relation to the impacts of climate change. To this end, the Committee recommended the appointment of a National Floods Commissioner for England, the inauguration of a new England Rivers and Coastal Authority, and that developers should be held liable for the cost of flood damage if

Notes

35 A.P. Kythreotis and G.I. Bristow: 'The 'resilience trap': exploring the practical utility of resilience for climate change adaptation in UK city-regions'. *Regional Studies Journal*, 27 Jul. 2016. http://www.tandfonline.com/doi/full/10.1080/00343404.2016.1200719

36 *Research to Survey Local Authority Action on Climate Change Adaptation. Final Report*. JBA Consulting and LUC, for the Adaptation Sub Committee, Jun. 2015. https://www.theccc.org.uk/publication/jba-and-luc-for-the-asc-research-to-survey-local-authority-action-on-climate-change-adaptation/

37 D. Thompson: *How Effective is the Land-Use Planning System in Avoiding Inappropriate Development on the Floodplain?* Committee on Climate Change, 2015. http://www.floodandcoast.com/abstracts/dthompson.pdf

38 *Assessing the Consideration of Flood Risk by Scottish Local Planning Authorities*. LUC, for ClimateXChange, Apr. 2016. http://www.climatexchange.org.uk/files/7914/6841/6981/Assessing_the_consideration_of_flood_risk_by_Scottish_local_planning_authorities.pdf

39 *Flooding: Cooperation across Government*. HC 183. Second Report of Session 2016-17. Environmental Audit Committee, House of Commons, Jun. 2016. https://www.publications.parliament.uk/pa/cm201617/cmselect/cmenvaud/183/183.pdf

40 *Future Flood Prevention*. HC 115. Second Report of Session 2016-17. Environment, Food and Rural Affairs Committee, House of Commons, Nov. 2106. http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenvfru/115/115.pdf

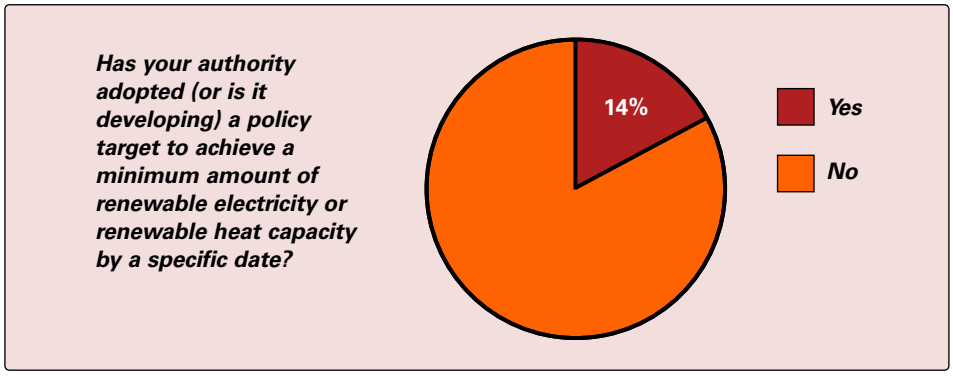

Figure 4 Local authority renewable energy policy – survey responses
Source: Survey of Local Authority Onshore Wind Policies[43]

development were built in floodplains or ignored regulations. The Committee also highlighted the importance of taking a catchment approach to flood prevention, recommending the commission of a large-scale trial of river-catchment-scale flood resilience. It was also recognised that the multiple benefits of taking a green infrastructure approach to sustainable urban drainage systems (SuDS) must be better understood in terms of the wider benefits to communities. Additional recommendations relevant to planning included setting out how SuDS will be deployed in new developments; making water and sewerage companies statutory planning consultees; and introducing amendments to Building Regulations by the end of 2017 to require the use of flood-resilient materials.

3.2.2 Climate change mitigation

The literature on the effectiveness of spatial planning in dealing with mitigation is much less extensive than that on adaptation. Surveys are now being produced on the delivery of key mitigation policy such as renewable energy. In 2016 a survey by the Centre for Sustainable Energy (CSE)[41] found that fewer than 60% of local authorities stated that their local plan policy on renewables formed part of wider strategies to meet national and international targets.[42] The research also revealed that the majority of these local authorities had not developed or adopted policy to achieve a specific renewable energy target by a certain date (see Figure 4[43]), nor were they planning to adopt or develop planning policies for onshore wind or renewable energy, following national planning changes. According to the CSE survey, policies to support the generation of sustainable energy using renewable and low-carbon technologies are not widespread within local authority strategies and plans. This reflects a significant gap in policy on reducing carbon dioxide emissions and encouraging more sustainable forms of energy from renewable sources.

Research undertaken for the Royal Institution of Chartered Surveyors (RICS) also found that the withdrawal of the 2016 'zero-carbon homes' target has had an impact on local policy and standards for promoting the delivery of low- and zero-carbon new homes in England.[44] It identified cross-sector concern over the removal of strong regulation which had previously acted as a key driver for innovation in planning policy and action on low carbon. Removal of the Code for Sustainable Homes without a replacement has meant that a number of wider climate change issues related to building materials and embodied energy are now not captured by obligatory regulations and therefore may not be reflected in local plan policy. Yet the UK climate change targets and EU Directive on 'nearly zero-energy' buildings targets for 2019/2021 (the Energy Performance of Buildings Directive) are still in place, although their future, as with all EU law, is in doubt follow the Brexit referendum vote.

Notes

41 *Survey of Local Authority Onshore Wind Polices*. Centre for Sustainable Energy, 2016 (forthcoming)

42 Such as those set out in the EU Renewable Energy Directive

43 *Survey of Local Authority Onshore Wind Polices*. Centre for Sustainable Energy, 2016 (forthcoming)

44 *The Future of Policy and Standards for Low and Zero Carbon Homes*. Royal Institution of Chartered Surveyors, Feb. 2016. http://www.rics.org/uk/knowledge/research/research-reports/future-of-policy-and-standards-for-low-and-zero-carbon-homes/

3.2.3 The resources available to the planning service

Given the important role of the planning system in building resilience to and in planning for climate change, it is crucial that the public sector is adequately resourced to fulfil this function. Austerity measures have affected local authority budgets across the country, and the planning service has been particularly hard hit. Research has found that services such as planning have been cumulatively hit by cuts of to up to 45%.[45] Such recurrent and ongoing cuts affecting planning departments across England raise questions about the adequacy of the staff resource and skills capacity within planning teams. A reduction in skilled and experienced employees could reduce the ability of LPAs to effectively plan for climate change, given the competing priorities of meeting housing targets and delivering economic growth. The Environment Agency has also highlighted that it too faces barriers in delivering its climate change adaptation activities.[46]

3.2.4 Conclusion

The policy background set out in Section 2 highlighted that there is a strong legislative framework in place for planning for climate change, which is reiterated in the national framework for planning. However, the literature surveyed in this Section indicates an apparent mismatch between national analysis identifying climate change risks and vulnerability, setting a detailed and long-term strategy through spatial planning, and the ability of local government to respond to climate change. This report now examines the current state of planning for climate change in England.

Notes

45 A. Hastings, N. Bailey, G. Bramley, M. Gannon and D. Watkins: *The Cost of the Cuts: The Impact on Local Government and Poorer Communities*. Joseph Rowntree Foundation, Mar. 2015. https://www.jrf.org.uk/report/cost-cuts-impact-local-government-and-poorer-communities; and *The Impact of Funding Reductions on Local Authorities*. National Audit Office, Nov. 2014. https://www.nao.org.uk/report/the-impact-funding-reductions-local-authorities/

46 *Adapting to a Changing Climate Report*. Second Adaptation Report under the Climate Change Act. Environment Agency, May 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/526000/climate-adrep-environment-agency.pdf

section 4
research methodology

4.1 Research design

The aim of the research underpinning this report has been to establish the extent to which climate change mitigation and adaptation are reflected as priorities in local plans in England. The six research objectives were as follows:

1 To gauge the evidence on climate change being used in plan preparation.
2 To test the extent and detail of climate change mitigation and adaptation policy in local plans.
3 To test the priority given to climate change mitigation and adaptation in local and neighbourhood plan policy, both by local authorities and by the Planning Inspectorate.
4 To provide an analysis of the key factors that contribute to effective policy-making.
5 To provide best practice lessons in policy development to support local authority and community action on climate change through the local plan process.
6 To examine in more detail how flood risk management is being addressed in local plans and subsequent developments as part of climate change adaptation responses.

4.2 Research methods and implementation

4.2.1 Research methods

Both qualitative and quantitative methods were used to address the above objectives. In brief the approach taken involved:

- ***An online survey*** of all LPAs with local plans submitted to the Planning Inspectorate since 2012 that were either adopted or going through examination. The online survey provided an insight into planning processes and local plan documents from the perspective of LPAs.
- ***A document analysis*** of policy in published local plan documents submitted since 2012 that were either adopted or going through examination, and of Planning Inspectors' reports for 39 LPAs. This sample was intended to reflect the overall composition of unitary, district, and other types of LPAs, as well as a broad range of differing spatial characteristics and climate risks.
- ***Semi-structured telephone interviews*** conducted with key national stakeholders as part of scoping work for the study; follow-up telephone interviews were also conducted to check key points for the document analysis.
- ***A series of four case studies***, which provided an in-depth area-based examination of how flood risk management is being addressed as part of climate change adaptation responses in local plans.

4.2.2 Research implementation

Research implementation involved four phases, based on the methods outlined in Section 4.2.1, as set out below.

Phase 1: Project Advisory Group established, and stakeholder interviews

Phase one involved establishing a Project Advisory Group. The Group met twice during the project: once at the beginning to inform the project objectives and research methods, and a second time during phase 4 to discuss the

emerging findings and the draft report. The following organisations were represented in the Group:

- the Environment Agency;
- the Royal Town Planning Institute;
- the Adaptation Sub-Committee;
- East Midlands Councils;
- Cornwall Council; and
- the Centre for Sustainable Energy.

The Group also included consultants with particular relevant expertise. During this phase, the TCPA undertook stakeholder interviews to inform the project objectives and key priorities for the research.

Phase 2: Online survey of local authorities

In phase 2 the TCPA conducted an online survey of LPAs (using an online survey application) which was sent to all 103 LPAs with local plans that had been found sound by the Planning Inspectorate since the NPPF was issued in 2012.[47] The survey set out questions that sought to understand the extent and priority given to a range of climate change policies. To endeavour to obtain a positive response rate, the survey was sent out to the senior planning officers in charge of plan-making as listed in Goveval (an online subscription database of local authority contacts). Where no responses were received within a two-week period, the survey was sent out again to planning policy officers in the same authority.

The March 2012 publication date of the NPPF was set as a benchmark because all local plans adopted before that date risked being out of date and therefore at greater risk of speculative off-plan development.

The survey included questions on whether there were clear policy categories on climate change mitigation and adaptation at different spatial scales within the local plan, and tested both explicit climate policy as well implicit policies. The survey also included questions on community engagement in relation to plan development.

Phase 3: Document analysis of local plan policy

Phase 3 identified 39 local plans for a more detailed examination of their policy approach to climate change. This involved examining the local plan documents to establish the level of policy priority. The local plan documents reviewed included the core strategy development planning documents and other relevant local plan documents (such as site allocations or natural resource plans), involving an evaluation of the local plan text and the corresponding narrative in each Inspector's report. A review was also undertaken of evidence base material that was readily available online, to inform the picture of the plan-making process and the type of evidence used to inform action on climate change in each of the local authorities.

The analysis followed the analytical framework set out Section 4.3 below and elaborated in Annex 1. This in turn was based on textual examination for key words that have more or less priority value in planning law. For example, a policy to 'contribute to carbon reduction' was much weaker than a policy that must 'ensure delivery of the objectives of the Climate Change Act 2008'. This phase also included an analysis of Planning Inspectors' reports on the plans, which provided a crucial snapshot of how national policy was being interpreted and the degree of priority which the Planning Inspectors gave to climate change policy.

The selection of the sample case for the document analysis was based on:

- an analysis of the survey results, providing some overlapping LPAs;
- the date on which local plans had been found sound (ensuring a mix of plans adopted between 2012 and 2016, and including plans that have been adopted following the major policy changes in 2015);
- regional spread (aiming for at least three plans for each of the nine former standard English regions);
- urban-rural spread (aiming for a cross-section of different local authority characteristics and challenges – coastal areas, population density, for example); and
- socio-economic spread linked to climate vulnerability (aiming for a clear representation of areas with high and low economic demands and areas which were particularly vulnerable and exposed to flooding and heat across England[48]).

Notes

47 *Local Plans (Strategic Issues/'Core Strategies') Progress*. Planning Inspectorate, Oct. 2016 https://www.gov.uk/guidance/local-plans

48 Using the Climate Just tool as a guide – see the Climate Just website, at http://www.climatejust.org.uk

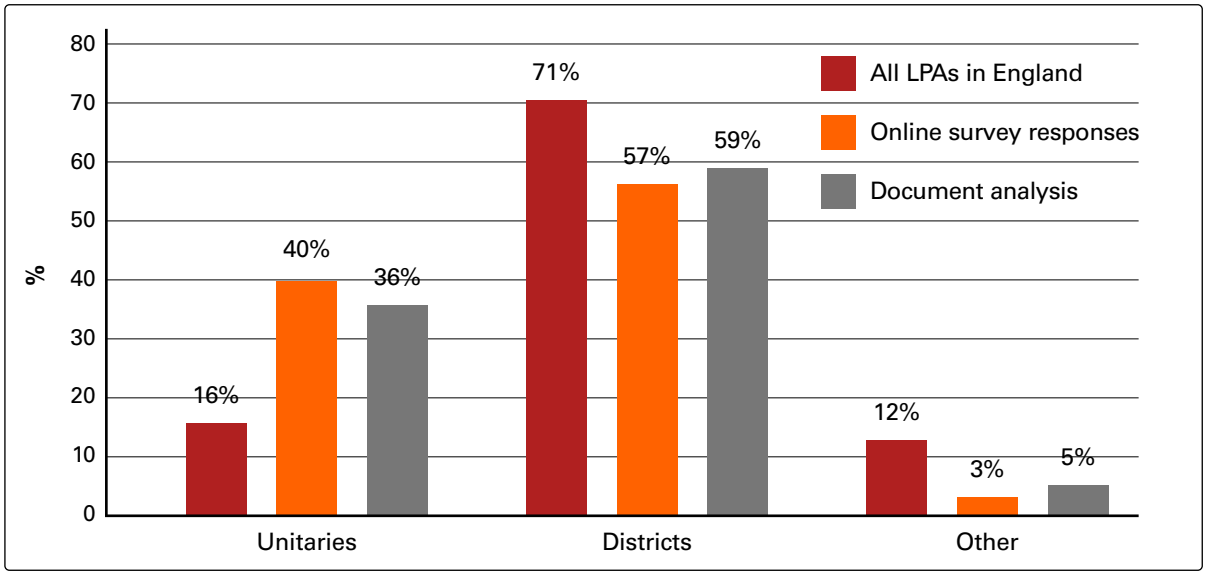

Figure 5 **LPA contributions to the research relative to national composition**

Follow-up telephone interviews were undertaken with local authorities on issues that required further clarification.

Phase 4: Case studies on adaptation and flood risk management

In light of the severe weather which hit the North West of Britain in the winter of 2015/16, an additional stage was added to the research, with a specific focus on climate change adaptation. The overall objective was to provide a further examination of climate change adaptation with a focus on flooding, to consider both plan policy and outcomes, including how these might affect development outcomes in areas at risk. This phase examined in a greater level of detail the complex relationships, practices and institutional and political contexts that influenced the outcomes of local plans and development management decisions in four LPAs. The methodology used was based on a qualitative case study approach which built a narrative to shed light upon why, for example, LPAs made certain choices on policy responses and what barriers and opportunities they encountered. The case studies yielded information on each of the areas highlighted in the analytical framework above, and in particular information to aid greater understanding of development outcomes than was possible through other parts of the research.

One aspect of the added value of this phase was the ability to test in detail why there was an apparent gap between plan policy and actual outcomes on the ground. Gaining insights into these questions required a greater level of scrutiny of the background to the local plan process through document analysis and semi-structured interviews with a wider group of local plan stakeholders. This stakeholder group included the local authority planning officers, flood resilience staff, neighbourhood planning officers, Environment Agency staff, and key politicians that helped shape the plan.

4.2.3 The local authorities involved in the research

At the time of undertaking the research, 103 (31%) of LPAs had local plans that had been found sound by the Planning Inspectorate since the publication of the NPPF.[49] The findings of this research reflect the planning processes of a sample of these LPAs, and, in order to present a representative picture of the current situation, the research also considered some LPAs whose local plans were in the final stages of examination by the Inspectorate, enabling plans developed and examined in the period 2014-2016 to be included in the study. The nature and composition of the LPAs included in this research were as follows:

- The online survey had a 30% response rate from the 103 local planning authorities surveyed, and respondent LPAs generally reflected the overall composition of unitary, district and other local planning authorities across England (see Figure 5).

Note

49 Based on the data published at the time by the Planning Inspectorate – *Local Plans (Strategic Issues/'Core Strategies') Progress*. Planning Inspectorate, Oct. 2016. https://www.gov.uk/guidance/local-plans

Table 3
Research sampling and review framework

LPA type	Number of LPAs in England	LPA survey responses	Document analysis LPAs	Case study LPAs
Unitary	55	12	14	2
District	241	17	23	2
Other (London Borough or National Park)	41	1	2	0

There was an overlap of eight LPAs between the online survey and the document analysis – four were the case study LPAs

- The document analysis included 39 LPAs, and generally reflected the overall composition of district, unitary and other local planning authorities across England (see Figure 5).
- Geographically, the survey LPAs covered authorities from all but one region in England, and the document analysis LPAs included authorities from across all regions in England.
- Four LPAs with specific challenges in flood resilience were chosen as case study LPAs, all located in Northern England – two district and two unitary authorities.

Table 3 outlines the actual numbers of LPAs that participated in the research at each stage.

4.3 Analytical framework

In this research it was important for the 'test' of whether LPAs' plan policy fully engaged with the climate change challenge to be fair and proportionate – reflecting national plan-making requirements, as well as seeking to test how these requirements have been applied to reflect local circumstances. Tables 1 and 2 (in Section 2) set out the requirements of legislation, policy and guidance and the advice of relevant statutory agencies on both the process of preparation and the outcomes of local plans.

While the Government no longer produces detailed guidance on plan-making, the process can be distilled into seven stages, each with key compliance requirements. The stages below were used to guide the document analysis and case study research outlined above:

- evidence-gathering;
- stakeholder engagement;
- policy development;
- policy testing through Planning Inspectorate examination;
- final policy outcomes;
- delivery and outcomes; and
- monitoring and review.

Each stage of this analytical framework is elaborated further in Annex 1.

4.4 Data collection challenges

Overall, the survey, the document analysis and case studies produced a rich set of data on the practice and attitudes in play during the local plan process. The survey findings were limited by a 30% response rate to the sample of 103 authorities with post-NPPF local plans surveyed. The document analysis provided for a more in-depth view but was restricted to the published documents of the LPAs and the Planning Inspectorate, which offered limited explanation on why certain decisions had been made.

The four case studies gave a much fuller qualitative picture of the decision-making process and the motivations and objectives that framed outcomes on climate change, with a focus on flooding. For the case studies, the challenge was finding the resource to follow up community representatives, particularly when community involvement in plan-making and neighbourhood plans did not focus on climate-related issues.

One major data collection issue was the difference between the survey results and the document analysis and case study findings. On the whole, the survey gave a more positive picture of performance on climate change than the document analysis. It is possible that survey responses were skewed towards authorities with greater capacity to respond, and implicitly towards those better able to act on climate change. There may also be a natural inclination among respondents to seek to create a good impression of their authorities' performance. The overall results are analysed in the following Section.

section 5
research findings

This Section reports the findings from the online survey, the document analysis and the case studies.

5.1 Findings on the evidence base used in plan preparation

5.1.1 Overview

Overall, the evidence base used to inform planning for climate change was skewed, with a focus on flooding rather than on other adaptation issues or on carbon dioxide emissions reduction, as shown in Figure 6.

In plan development climate change was not considered as a quantifiable risk factor, with its own evidence base related directly to policy preparation or outcomes. The document analysis and case studies revealed that the Environment Agency's flood maps and the UK Climate Impacts Programme (UKCP09) were being used as the latest evidence on climate change in the absence of any other co-ordinated resource.

This Sub-section presents the research findings on aspects of plan preparation for climate change policies, including findings on:

- the understanding of risk;
- interpretation of the legal duty on climate change (Section 19 of the Planning and Compulsory Purchase Act 2004, as amended by Section 182 of the Planning Act 2008);
- the evidence used for climate mitigation and carbon reduction;
- the evidence used for climate change adaptation; and
- local governance.

5.1.2 Interpretation of the legal duty on climate change

The research indicated that Section 19 of the Planning and Compulsory Purchase Act 2004, as amended by Section 182 of the Planning Act 2008 (the legal duty on climate change) was misunderstood among LPAs developing local plans. LPAs who responded to the online survey stated that compliance with this was a factor in policy development (74% of LPAs). However, the survey results and document analysis found that

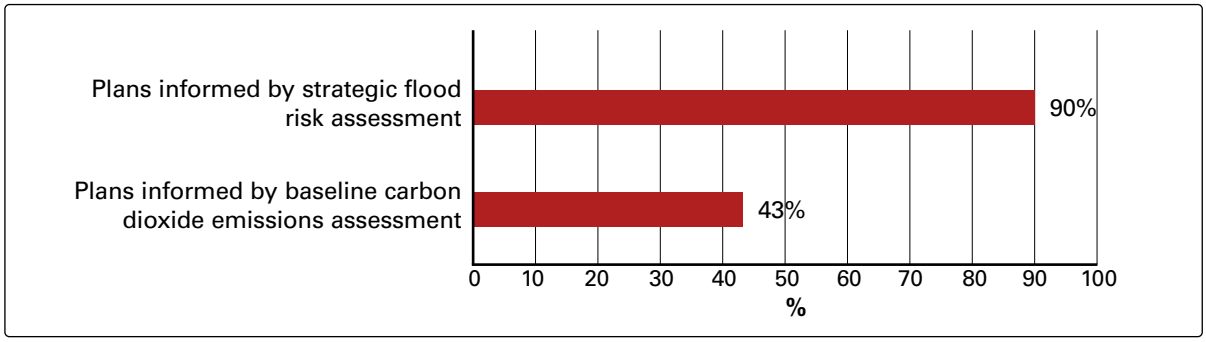

Figure 6 Comparison of evidence bases used for adaptation and mitigation in plan preparation – online survey results

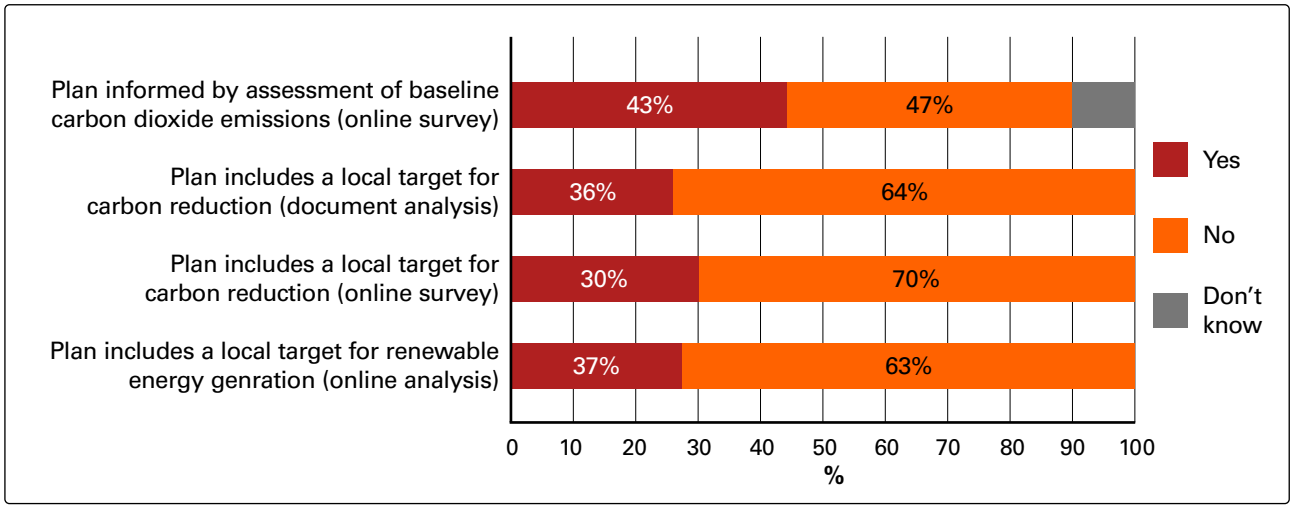

Figure 7 **Evidence base for mitigation compared with policy outcomes – online survey (and document analysis) results**

consideration of Section 19 was not translated into widespread carbon accounting during policy preparation: the carbon impacts of different policy options were not quantified by almost 70% of LPAs who responded to the online survey. This was also echoed by interviewees during the case study research, with a general view that Section 19 did not require them to have policy on climate mitigation and adaptation, but only to consider the inclusion of such policy.

5.1.3 Evidence used for climate mitigation and carbon dioxide emissions reduction

The lack of a clear link between evidence and policy outcomes

On mitigation, there was a disparity between evidence-gathering on carbon and the policy outcomes in the local plan (see Figure 7) – indicative of a lack of connection between the evidence used for plan preparation and the policy outcomes on climate change mitigation.

Despite the requirements of the NPPF on carbon dioxide emissions reduction, the online survey and document analysis found that the majority of LPAs did not have a target for carbon reduction, or for renewable energy generation, in their plans. This was despite the survey finding that assessments of baseline carbon dioxide emissions had been undertaken for plan preparation in at least 43% of cases. Local plans' carbon commitments were often vaguely drawn, with references to 'contributing to the national carbon reduction targets'. Mitigation policy often relied on external and supplementary documents to provide detail, which do not have the policy weight of development plan documents.

Plans regularly referred to reducing carbon dioxide emissions in a way that was not substantiated numerically, and 67% of LPAs surveyed did not quantify the carbon impact of different policy options during plan development. As such, a quantitative understanding of carbon dioxide emissions reduction targets was not found to guide local plan policy on mitigation. Document analysis also highlighted an absence of local evidence that included carbon reduction studies or a quantifiable way to measure carbon dioxide emissions that translated into specific 'bold type' plan policy.[50]

District heating policy focus

District heating was an area of climate change mitigation that LPAs engaged in more actively. The evidence-gathering process and detail in the plan for district heating were reliant on the guidance and support of the national Heat Networks Delivery Unit (HNDU), led by the former Department for Energy and Climate Change. The HNDU provided funding for the development of local evidence, coupled with systematic support and a long-term interest in projects coming to fruition. This is significantly different from the support provided in other areas of climate change mitigation evidence-gathering and strategy-making.

Note

50 *Where* climate change is referenced in the plan, and *the detail* given to it, will determine the extent to which this has weight in planning decision-making. The following distinctions can be made: 'bold type' policy carries weight and is used in deciding upon planning applications; and policy preamble provides context and additional information – it does not have the same status as 'bold type' policy wording

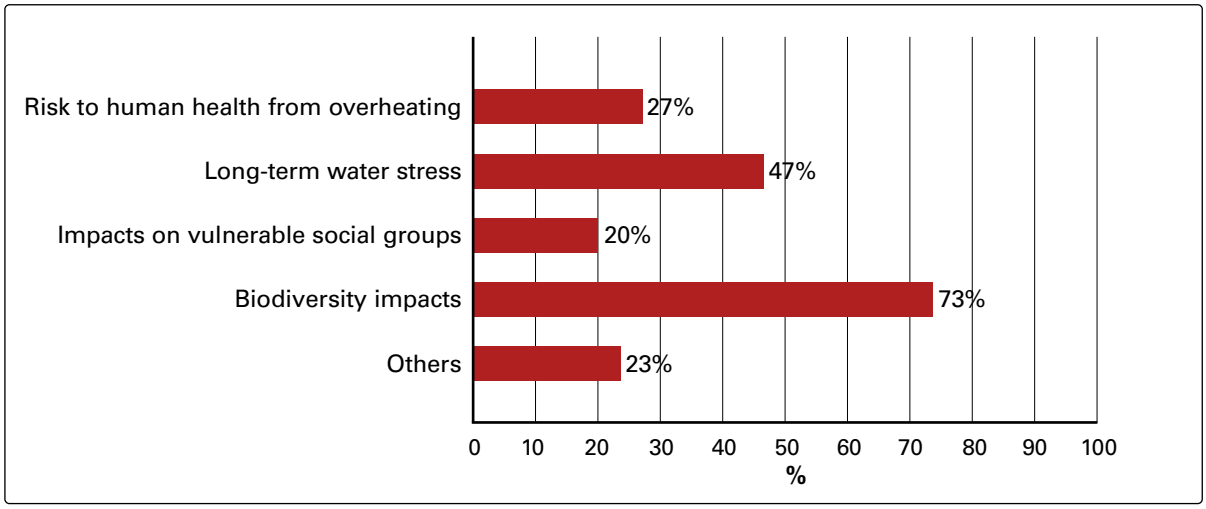

Figure 8 **Other adaptation evidence used to inform local plans – online survey results**

The evidence base used for mitigation in relation to district heating led to changes in site allocations or area-specific policies (in up to 16% of surveyed LPAs). This generally related to the feasible location of existing local heat networks or planned heat network extensions. Engagement with district heating was not commonly framed in relation to quantified carbon dioxide emissions reduction.

The impact of viability evidence

Evidence on viability submitted during plan preparation had an impact on the detail and prescription of mitigation policies that were subsequently included in the local plan. Survey respondents noted that:

'The LPA took borough wide viability evidence which cautioned around additional requirements for climate change mitigation, for example going beyond Building Regulations in terms of energy efficiency standards.'

and:

'Evidence showed that introducing energy efficiency measures may affect delivery of housing or other infrastructure.'

5.1.4 Evidence used for adaptation to climate change

The types of evidence used

The document analysis showed that flood risk is much more often identified as a risk factor than other climate change issues in the evidence base collected to inform adaptation.

Strategic flood risk assessments (SFRAs) were used by almost all LPAs (90%) who responded to the online survey, and, where applicable, all plans in the document analysis were underpinned by an SFRA. The review of SFRAs for the document analysis found that the time-horizon of SFRAs was relatively short-term, and on the whole did not incorporate future risk or a consideration of where the future floodplain may be, although the Environment Agency's allowances for climate change were referenced. Survey respondents considered SFRAs published between 2007 and 2015 to be 'up to date'. In most cases the SFRA did not refer to the impacts of climate change as a factor that would quantifiably increase the risk or severity of a flood event – despite the Environment Agency's view, set out in its SFRA guidance, that it would like to see climate change assessed in SFRAs.

A range of other evidence relevant to climate change adaptation was used to inform local plan preparation among the LPAs surveyed, but with very varied attention given to different potential climate impacts (see Figure 8). While almost 75% of LPAs had used evidence on biodiversity impacts to inform plan policy on adaptation, evidence of climate impacts on social vulnerability and risks from overheating to human health were much less well represented. Although the online survey highlighted that these different forms of evidence were used to inform local plans, the document analysis found that such evidence documents often did not refer to climate change directly, or did not relate to subsequent policy outcomes on adaptation.

For 40% of the LPAs included in the survey, the evidence base used on adaptation had led to changes in site allocations or area-specific policies related to flooding; however, no further

information was given, and surveys were completed anonymously.

Shoreline management plans (SMPs) were used by 40% of LPAs who responded to the survey as part of the evidence base for developing post-NPPF local plans. LPAs considered SMPs published between 2006 and 2012 to be 'up to date'. The SMPs were not examined in detail and therefore the degree to which issues such as sea level rise were taken into account could not be determined. Across the sample of local plans assessed for the document analysis (14 of which were made by coastal LPAs), sea level rise was only included in the 'bold type' policy wording in one local plan.

Climate change modelling

Climate change projections and associated modelling data were used selectively for small parts of local authority areas, if they were used at all. Spatial climate sensitivity flood modelling was undertaken for sites within local authority boundaries rather than encompassing the whole authority area or river catchments, and these were generally related to specific development areas. Very few LPAs involved in the research had engaged in climate modelling. Three examples given below highlight the nuances of the climate modelling experience and its outputs for three different LPAs:

- ***Inland LPA with fluvial and pluvial flood risk (case study):*** This LPA had a significant and long-term regeneration project situated adjacent to a major watercourse, and the climate modelling was restricted to this area. Climate modelling provided an indication of the probability of future fluvial flood risk, but it did not provide an outline that could be used to predict and plan for the future extent of the floodplain.
- ***Coastal LPA with tidal flood risk (document analysis):*** This LPA area is highly susceptible to wave overtopping. Flood risk modelling was undertaken to consider the effects of climate change in one specific regeneration area identified in the local plan. The additional supporting SFRA mapped the extreme still-water sea level for 2115 using 2008 LIDAR data supplied by the Environment Agency. However, the modelling outputs did not include the effect of climate change on wave overtopping. Consequently, the true risk of climate change on tidal flood risk in this LPA area cannot be considered to be fully represented.
- ***Inland LPA with fluvial and pluvial flood risk (case study):*** This LPA commissioned consultants to produce evidence for local plan development and also asked for climate change modelling for the authority area within this. The consultants did not have the capacity to undertake climate change modelling, and the LPA did not have the resources to employ another consultancy. The plan was therefore developed (and adopted) without climate change modelling.

Reliance on the Environment Agency for data and interpretation

> '*The Environment Agency is having to become much more reactive rather than initiating the advice-giving. Responding to planning applications within 21 days is a key performance measure for the Agency, so this has priority. It is a real struggle for us in relation to commenting on local plans, and we probably don't help local authorities with policy development as much any more in giving projection for flood river zones.*'
> Environment Agency officer

The case studies illustrated the strong reliance among local authorities on advice from the Environment Agency, and highlighted a lack of staff capacity in many LPAs to interpret the Agency's climate change allowances for their local conditions. Application of the Agency's 1 in 100 year probability climate change models for flood risk assessments and strategic flood risk assessments to planning or policy development is left up to the individual LPA's interpretation – something that, in turn, is often undertaken by consultants commissioned by the LPAs to prepare these documents.

The responsibility to produce flood risk modelling for the local planning process lies with the LPA. The Environment Agency does not have a duty or dedicated resource to provide additional modelling for LPAs. Despite heavy LPA reliance on this data, the Agency is not resourced to provide further information for planning. The data provided is produced for the Agency's own purposes and is shared with LPAs in the format in which it is developed (usually map based) at each LPA's request.

The Environment Agency suggests to LPAs that they alter their current 1 in 100 year plus 20% climate change models to reflect the new climate change allowances recently published by the Agency. Local guidance is available to help with this. The probabilities provided by the Agency are important as they are linked to the

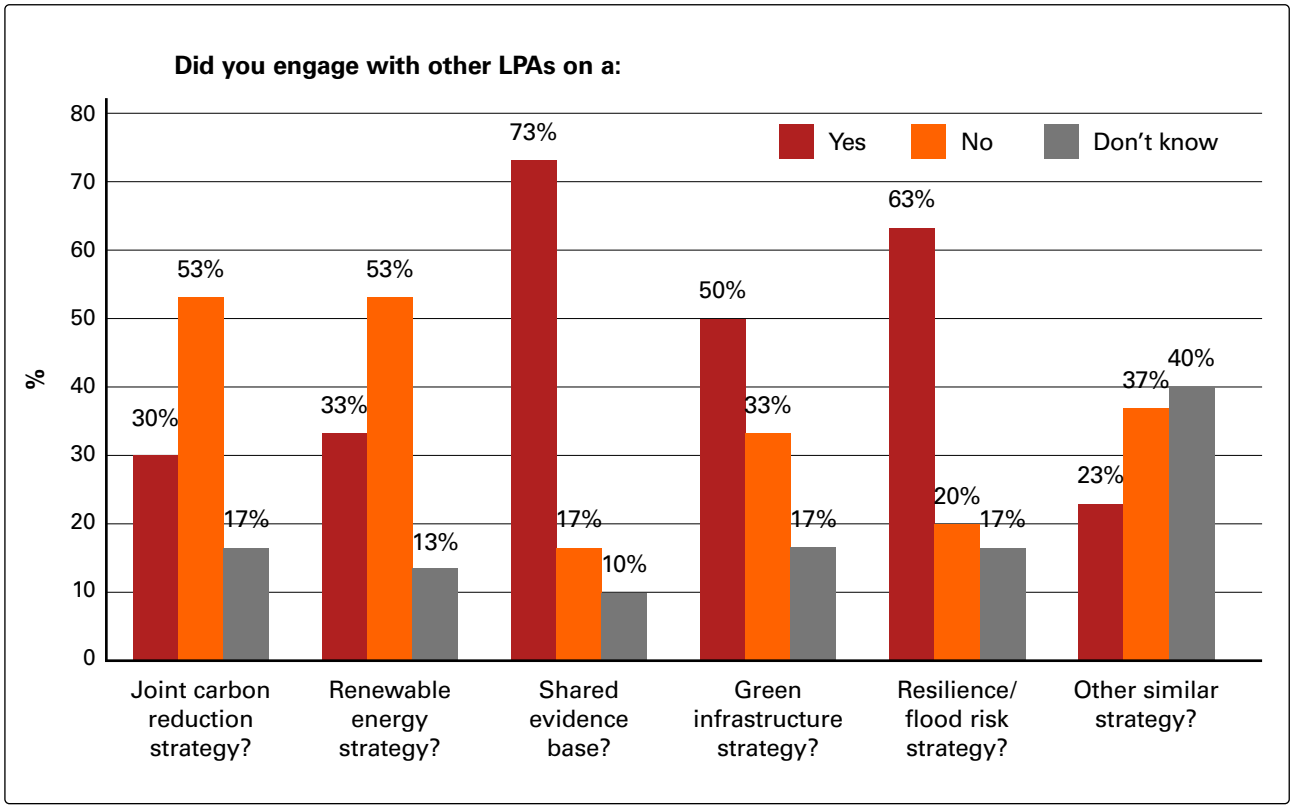

Figure 9 **Engagement with other LPAs during plan-making – online survey results**

flood extent (i.e. if the flood outline of a 1 in 200 year zone becomes the 1 in 100 year outline, the type of development permitted may change). The case study research found that the Environment Agency's corporate priority to respond to planning applications within 21 days has resulted in it devoting less staff time to aiding the preparation of local plans. Findings from all of the research methods revealed that LPAs rely heavily on the data and evidence that the Agency makes available to them in plan development. This evidence is used to determine local flood risk and develop strategies for flood resilience.

5.1.5 Local governance

Duty to co-operate

The duty to co-operate was used in the plan-making process and in the sharing of evidence. Among LPAs who responded to the survey, 37% identified climate change as a prominent part of the dialogue with neighbouring authorities. However, during case study interviews planning policy officers concluded that discussions on climate change were not a priority in the duty to co-operate process. The case studies found that between neighbouring authorities the duty to co-operate was useful for maintaining relationships, but did not naturally lead to the development of a combined or co-ordinated evidence base or modelling on climate change risks.

The survey responses set out in Figure 9 show that, during plan-making, LPAs more often engaged with other authorities on sharing evidence and developing adaptation-related strategies than on mitigation or carbon-related issues. The case studies and document analysis revealed that shared evidence was mainly SFRA based.

5.2 The priority given to climate change mitigation and adaptation in plan policy

5.2.1 The governance of climate change

Local politicians

The overwhelming priorities of politicians in the case study areas were stated to be growth, job creation and the development of the local plan itself. Climate change was not highlighted as an outstanding political priority in any of the case study areas, although the phenomenon of climate change was openly accepted by politicians in two of the case study LPAs. In these LPAs, where climate change was considered as an element within the plan, the agenda had been driven forward by a 'champion' planning officer

What level of political priority was given to climate change in developing your local plan? Please select one.

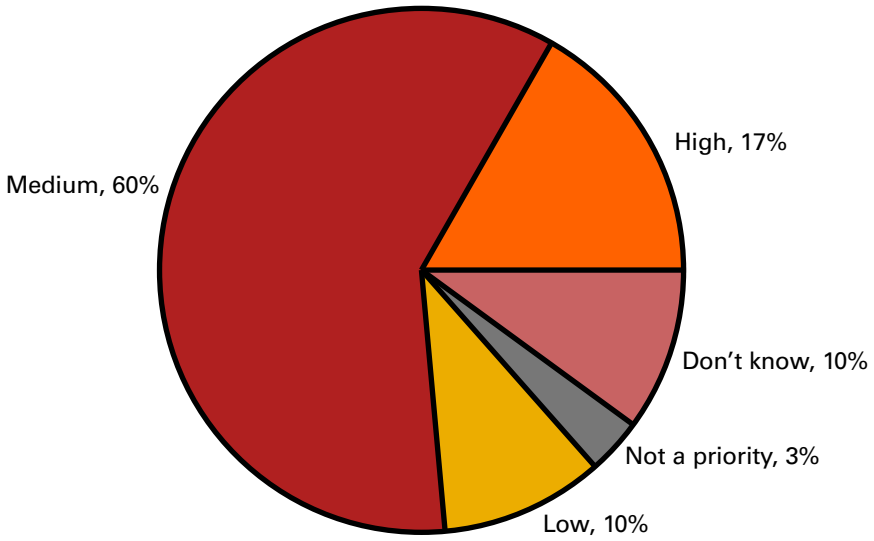

Figure 10 **The political priority of climate change – online survey results**

with 'the bit between their teeth'. Interviewees highlighted that climate change was not a top priority for development management during the decision-making process. One flood resilience officer explained:

> *'Climate change isn't on development management's agenda directly; it's about development that builds jobs, and allocating enough houses. Development management sees climate change as being dealt with by the people who consult. It's not their role.'*

Variable political priority on climate change

The political priority given to climate change in local plans can be determined by the type of policy wording within the plan. There is a significant difference between the presence of a policy or wording on climate change and the weight of this in achieving plan outcomes: inclusion does not necessarily equate to priority.

Although climate change adaptation was often mentioned in local plans, it carried policy weight in only 54% of these cases. References to climate change adaptation were made in 37 of the 39 local plans examined in the document analysis; however, only 54% of these references were made in the 'bold type' policy wording. References to planning for climate change adaptation were more commonly located in the policy preamble. As such, the prioritisation of climate change in local plans was highly variable, and was more complex than suggested by the online survey (see Figure 10). Some 77% of the LPAs that responded to the online survey felt that, politically, climate change was given medium to high priority during plan development (see Figure 10). This figure, however, may reflect the self-selecting nature of survey respondents (those who were more proactive were more likely to respond).

All the LPAs considered in the document analysis referred to climate change in their plans. The detail of these references to climate change varied. In some cases, they referred to the need to take specific action to either enable adaptation or mitigation, or references were used to identify climate risks. However, in most cases references were made to the Climate Change Act 2008 or there were statements on climate change as a phenomenon, rather than focusing on specific local outcomes.

The extent and detail of local plan policies is therefore important in achieving outcomes on climate change.

The Planning Inspectorate

The document analysis illustrated that Planning Inspectors played a significant role in the overall priority attributed to the climate change policies included in local plans. In a considerable number of local plan examinations, the Inspector had made modifications that either weakened or strengthened the 'bold type' policy

wording, thus affecting the final policy outcome. The document analysis found that:[51]

- **54% of mitigation policy was made less prescriptive (weakened)** (further details are given in Section 5.3.1);
- **5% of adaptation policy was strengthened** by adding the wording 'should prioritise SuDS [sustainable urban drainage systems]' and by adding a reference to catchment-scale considerations for flooding; and
- **10% of adaptation policy was weakened** by removing references to 'multi-functional' benefits, adding 'feasibility' caveats and removing references to the green infrastructure role of SuDS from 'bold type' policy.

Only 7% of LPAs that completed the survey considered that the Planning Inspectorate weighted climate change as a 'high-priority' planning issue within Inspectors' reports, while 57% of respondents characterised climate change as 'low' or 'no priority' during the Planning Inspectorate's considerations during plan examination.

5.3 Climate change mitigation and adaptation policy in local plans

This Sub-section presents findings on climate change policies included in local plans. It highlights the following for both adaptation and mitigation:

- the extent and detail of local plan policy;
- the impact of NPPF viability considerations;
- policy modification by the Planning Inspectorate; and
- policy monitoring.

5.3.1 Climate mitigation and carbon reduction policy

The extent and detail of local plan policy

Policy on climate change in post-NPPF local plans was variable, but was generally weak in relation to mitigation. The local plans assessed via document analysis did not consider climate change mitigation in a way that promoted a co-ordinated policy response to reducing overall carbon dioxide emissions or to enabling a co-ordinated transition to a low-carbon approach. An average of 33% of LPAs considered in this research[52] set carbon dioxide emissions reduction targets that were specific to the local authority area or based on a locally defined baseline emissions survey.

Mitigation policies included in local plans comprised two main types:

- low-carbon/renewable energy generation; and
- carbon reduction policy (sustainable buildings/ energy efficiency).

The document analysis revealed that these policies tended to be criteria based, with anything from four to twelve criteria to be met in implementing the policy itself. There was a lack of focus on the relationship between policy outcomes and any monitoring of these policy actions as climate change responses – for example, no explicit or specific methodologies for measuring carbon dioxide emissions reductions were set out. Often, where reference to carbon reduction was made, it was in passing and in relation to national targets set by national government or the European Union.

While substantial numbers of the plans assessed in the document analysis had policy on carbon reduction (60%) and low-carbon energy generation (97%), it was weakly and ambiguously expressed. A significant proportion (60%) of mitigation policies for energy generation used the wording 'is encouraged' or 'where viable and feasible' in the 'bold type' policy, although these terms were not defined. With such terminology left undefined, policy outcomes are more difficult to determine.

In local plans submitted after 2014, it was more common to see specific policies on wind turbines and/or district heating. Document analysis identified that 36% of LPAs had these type of policies in their local plans, as distinct from more general policies on sustainable energy generation.

Impact of NPPF viability considerations

The research revealed that there was no standardised way of applying the NPPF viability test on mitigation. Viability testing was applied variably across local authority areas, and it was difficult to find coherent details about its application. For example, while lengthy viability

Notes

51 Each of these figures is based on the whole sample of the 39 LPAs included in the document analysis

52 An average from the survey responses and the document analysis

reports were produced, the document analysis did not find any cost curves that specifically demonstrated the unviability of different interventions, or examples where the costs were explicitly assessed and compared with the benefits to demonstrate that proposed interventions were not viable. Viability was assessed against profitability for the developer, rather than long-term benefit to future occupants.

The viability test had a significant impact on the kind of mitigation policies included in the local plans of the LPA survey respondents (see Figure 11). These impacts included:

- dropping all measures beyond compliance with mandatory building control standards;
- adding caveats/exception points into policy;
- adding viability clauses in respect of most of the 'harder' policy requirements – for example BREEAM certification or decentralised energy; and
- the omission of strategic targets for energy performance in buildings (in combination with announcements from the Government to restrict the ability of LPAs to set such targets).

These characteristic impacts of the viability test were apparent in the 'bold type' policy wording examined in the document analysis, as outlined above in relation to the highly variable extent and detail of mitigation policy.

The case studies revealed that the national steer on policy in relation to both climate change adaptation and mitigation had an impact on what LPAs included in their local plans. One planning policy officer commented that:

'At the preferred options stage we had a really lovely policy on building standards and renewable energy. But then the Government moved the goal posts and so we had to take it out. This is the impact of the chaos of national policy; it's just so confusing, with changes coming in from every angle.'

Examination by the Planning Inspectorate

Inspectors' focus on either mitigation or adaptation, or both, seemed to relate to the timing of the examination in relation to the publication of specific national guidance, or to changes in national policy, or to a change in the direction of general government support for climate-related issues.

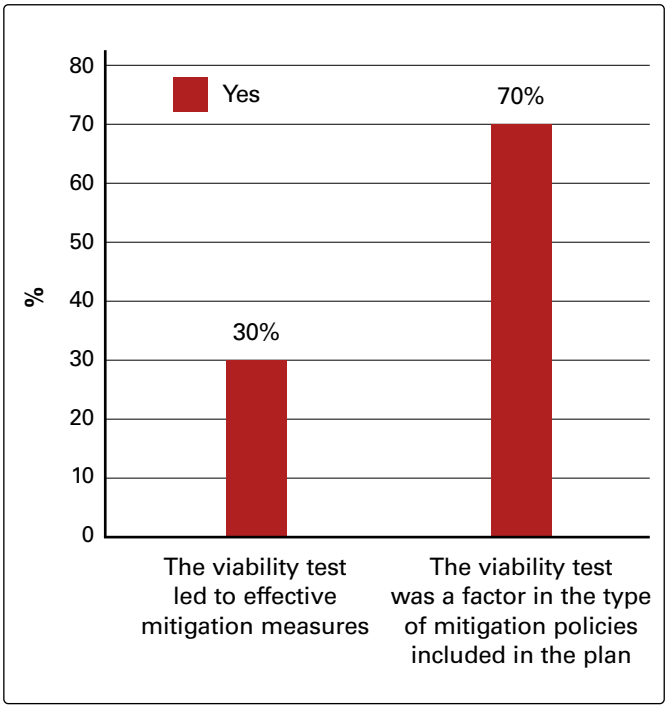

Figure 11 The impact of the NPPF viability test on mitigation policy – online survey results

From the document analysis sample of LPAs, 54% of mitigation policies within local plans were weakened in the following ways:[53]

- 26% of policies were qualified by the addition of 'where viable' or 'where feasible'.
- 36% of policies on low-carbon or renewable energy generation were modified by removing wind technologies and in some cases by setting new criteria for wind (mainly during 2015 and 2016).
- 31% of policies removed local carbon reduction and energy efficiency standards (including BREEAM, the Code for Sustainable Homes, 'zero-carbon homes' and local targets) (mainly during 2015 and 2016).

This highlights the impact of the NPPF viability test on the strength of mitigation policy. It also demonstrates the impact that written Ministerial statements have had on local plan policies for carbon dioxide emissions reduction and for renewable energy generation.

Policy monitoring

The survey responses suggest an uncertain picture regarding the monitoring of mitigation policy. While 47% of LPAs claimed to have provisions in the plan for monitoring the actual effectiveness of policy in reducing carbon

Note

53 Based on the sample of 39 LPAs included in the document analysis – in some cases policies were weakened in more than one way, and therefore these percentages overlap for some LPAs

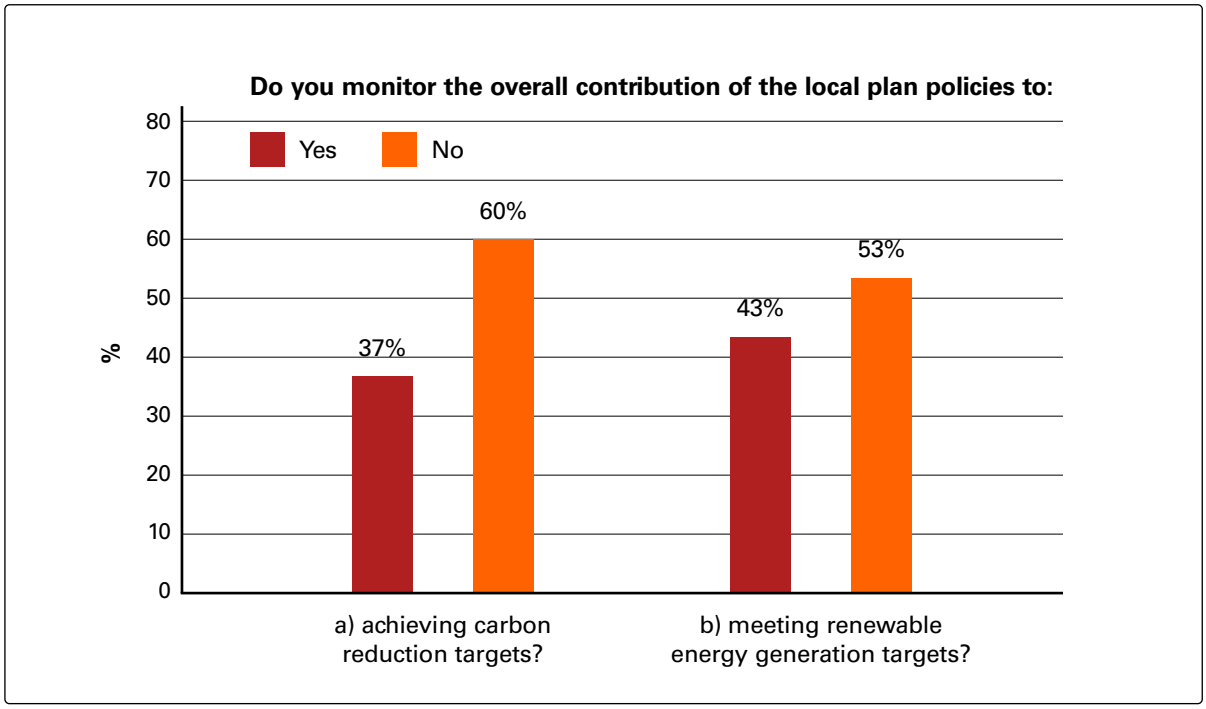

Figure 12 **Monitoring mitigation policy – online survey results**

dioxide emissions, the responses by the same sample to the questions shown in Figure 12 suggest something different.

Figure 12 shows that less than 45% of these LPAs monitored policy against achieving carbon dioxide emissions reduction and renewable energy generation targets. This may be related to the finding, shown in Figure 7, that 70% of these LPAs did not include carbon reduction targets in the plan, and to the impact of the viability test on the enforcement of mitigation policy:

> *'We had a strong local evidence base for local policy requirements for carbon reduction and renewable energy; however, the NPPF removed that ability so now we don't enforce the carbon reduction and low carbon energy policy.'*
> Online survey respondent

The document analysis showed that, in monitoring local plan mitigation policies, little specific focus was placed on measuring or accounting for carbon. Approaches to policy monitoring were based on the indicators system and did not specify a relation to carbon dioxide emissions, the type of carbon dioxide emissions to measure, or an assessment method. In one specific local plan document, the policy preamble referred to ambitious carbon reduction targets set by the local authority itself. However, a strategy for achieving or measuring this was not set out in the local plan documents. Rather, it was stipulated that this would be provided in the next version of the plan. In this instance the plan had a target, but it was not supported by a measurement method that could quantify carbon dioxide emissions reductions.

5.3.2 Local plan policy for adaptation to climate change

Policy extent and detail

Policy on climate change in post-NPPF local plans was narrowly focused on adaptation to issues of current flood risk.

Local plan policy did not always provide a systematic response to climate change adaptation or the need to build resilience that was based on a comprehensive understanding of risk and vulnerability. This was highlighted in the document analysis, and from the case study interviews it became clear that for LPAs climate change adaptation was generally understood as an issue of flooding and flood risk. The approach also tended to be short term and not sufficiently future-facing. The timescales of adaptation policy were identified in the online survey and are presented in Figure 13.

The document analysis showed that flood risk policy was well represented in almost all local plans (97%). While the policy content varied, the overall the message was clear: flood risk must be mitigated, or reduced. The wording of 'bold type' flood policy was directive and used the

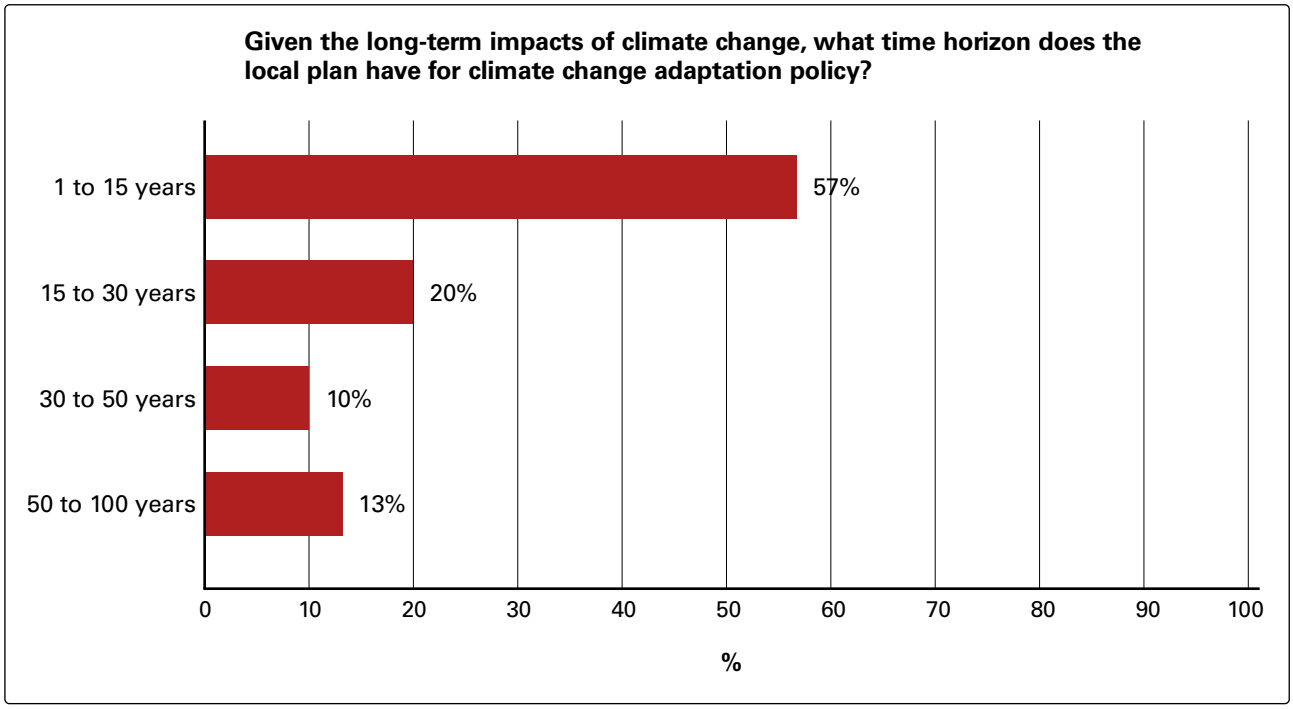

Figure 13 **The timescales for adaptation policy included in local plans – online survey results**

terms 'must' or 'should apply' (for example the sequential approach) in all cases. Furthermore, there was widespread uptake of the sequential approach and the exception test. For flood-related policies, references to climate change tended to be made in the policy preamble rather than in 'bold type' policy itself.

The risk of flooding was overwhelmingly the way that all the LPAs studied in the research dealt with adaptation to climate change in their local plans, and flood risk was given a higher priority in relation to the policy response than other adaptation issues (for example the risk of overheating). Other risks were also highlighted by survey respondents (see Figure 14); however, the document analysis did not reflect a prioritisation of these risk factors in relation to 'bold type' policy wording:

- In survey responses and the document analysis flood risk was focused on current risk rather than on climate change projections.
- One case study LPA commented that 'we've thought about it [future climate risk], but we haven't been asked to do that yet'.
- Heat stress was understood as a risk factor by almost half of LPAs who responded to the online survey. However, the document analysis found that only 15% of plans assessed included policy wording on overheating or heat stress. Where reference to overheating or the risk of climate change to human health was made in local plan documents, it was mainly in the policy preamble, often in relation to policies on green infrastructure. The link between overheating and climate change as a dynamic risk factor was not commonly made in local plans.
- Risks from sea level rise and coastal erosion were not comprehensively addressed by local plans. Of the 14 coastal LPAs included in the document analysis, just over half referred to sea level rise within their plan, and references to climate change in the 'bold type' policy only occurred in 29% of these. Only one local plan in the document analysis sample included the words 'sea level rise' in the 'bold type' policy text.
- Specific policy on defining SuDS was set out in 56% of local plans assessed in the document analysis. In 32% of cases, the 'bold type' policy wording was qualified by the terms where 'viable', 'feasible', 'possible', 'not impractical' or 'appropriate'. In some cases, this was related to the link between SuDS and green infrastructure.

The document analysis highlighted significant variability on SuDS policies included in local plans. SuDS policy tended to fall into three general formats:

- policy that included a reference to SuDS but did not define what this meant – these references were often subsumed within a more general policy such as 'principles of sustainable development' or similar;
- policy in which a criteria-based approach was taken to the implementation of SuDS; and

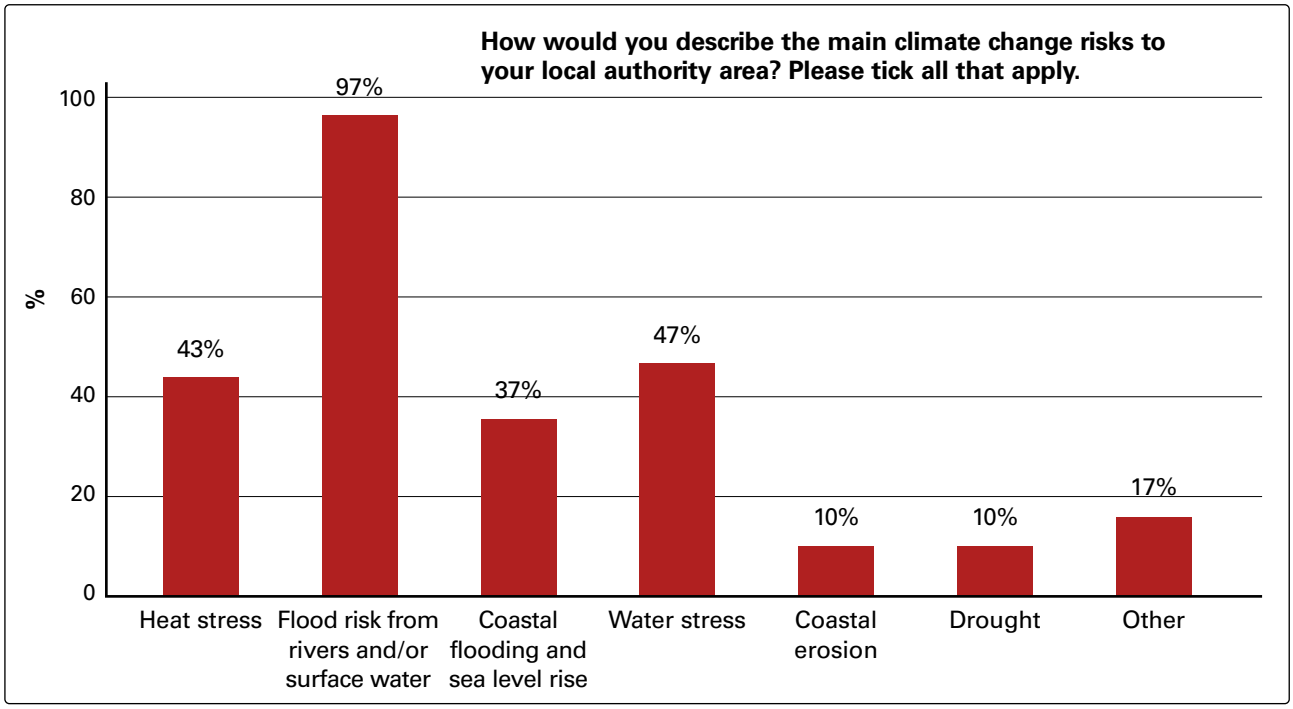

Figure 14 Description of climate risk by LPAs – online survey results

Other risks were identified as landslides and the capacity of existing infrastructure (such as sewers and urban drainage systems) to cope with increased severity in weather events

- a holistic and integrated approach to SuDS that incorporated the multiple benefits of green infrastructure, with SuDS as a flood mitigation and adaptation measure.

The document analysis revealed that SuDS policies ranged from being prescriptive on the implementation of SuDS to being presented with caveats.

Impact of NPPF viability

The NPPF viability test was a factor in the kind of adaptation policies included in the plan for 27% of LPAs that responded to the online survey. Comments in response to the survey identified SuDS as one adaptation response that had been subject to viability.

Examination by the Planning Inspectorate

In some cases, the final wording for SuDS policy was an outcome of plan examination by the Planning Inspectorate. For example, during main modifications one of the case study LPAs was requested to change its SuDS policy so that the whole policy would be assessed in relation to 'feasibility', where 'feasibility' was not defined.

From the document analysis sample of LPAs, in adaptation policies within local plans modified by Planning Inspectorate:

- **5% of adaptation policy was strengthened** by adding the wording 'should prioritise SuDS' and by adding reference to catchment-scale considerations for flooding; and
- **10% of adaptation policy was weakened** by removing references to 'multi-functional' benefits, adding 'feasibility' caveats and removing references to the green infrastructure role of SuDS from 'bold type' policy.

This highlights the impact of the NPPF viability test on the detail included within adaptation policy.

Policy monitoring

On the monitoring of adaptation, the survey found that the majority of LPAs (60%) *did not* monitor the overall contribution of local plan policies to securing long-term climate change adaptation. However, the case study interviews revealed that some LPAs were proactively monitoring flooding incidents in order to monitor how policy was having an impact and to better understand flood risk locally.

Additionally, the survey revealed that where applications are approved not in accordance with the development plan, the overall impact on securing adaptation to climate change would be assessed in only 30% of LPAs.

5.3.3 Community and stakeholder engagement

Climate-change-related impacts (such as more unpredictable storm events, increased rainfall and increased river flows) were not perceived as a cause of flooding first and foremost by elected members or by the public. Officers highlighted that there was a perception that new development is the ultimate cause, particularly if flooding has not occurred in the area before.

For a local plan to be found sound by the Planning Inspectorate, it must undergo full consultation; compliance with these procedures forms part of plan adoption. In the survey, 40% of LPAs said that their plans had been drawn up with the active participation of community partners (such as local flood resilience groups or community energy groups). Additionally, all of the case studies highlighted that community groups were engaged at the local level on flooding or on energy efficiency issues. LPAs were clear in the case study interviews that these groups did not always necessarily engage in the local plan policy development process.

While significant community action on flooding at the local level was common, the research found that this community action did not extend into plan development. The community focus was on emergency responses and community stoicism around being better prepared for flood events. In the case study areas there was little community action on climate change that influenced the local plan development process, and one LPA said that 'the public haven't engaged in any meaningful way around climate change' and that 'people are only just starting to connect flooding and climate change'.

Neighbourhood planning

One LPA highlighted that neighbourhood planning forums had tried to develop local climate policy (on energy-efficient building standards), but that they had become discouraged by a lack of applicable guidance.

Neighbourhood planning officers in four LPAs highlighted in interviews that neighbourhood planning was highly variable in its implementation and that plans varied in their policy content. Climate change policy was not a priority for neighbourhood forums engaged in neighbourhood planning processes, although neighbourhood plans did contain some aspirational policies, particularly on standards for development.

The case studies illustrated that local authorities recognised the potential of neighbourhood plans to contribute to local plan policy and carbon reduction targets, but that that there was uncertainty surrounding the purpose of neighbourhood planning. One respondent suggested that:

'Neighbourhood plans should be contributing to the local plan's carbon reduction target. Neighbourhood planning seems like something the Government is pushing strongly, but it feels like it doesn't have much substance.'

With recent changes to national standards on carbon reduction and other relevant policy, the interviewees revealed that neighbourhood forums were being advised against being too prescriptive in their plans by LPAs:

'All of the neighbourhood plans coming forward mention future-proofing on aspirational policy on standards above current standards, but we advise them not to apply things like the Code for Sustainable Homes as specifics because we don't know what the policy arena will look like in five years' time.'

5.4 Decision-making on climate change mitigation and adaptation for plan implementation

5.4.1 Decision-making on climate change mitigation and carbon reduction

Case study interviewees raised the issue of the lack of a statutory consultee to assist with the implementation of carbon dioxide emissions reduction legislation. They highlighted that this caused uncertainty on what policy to include on carbon and sustainable energy and how to weigh related decision-making.

An interview with an elected member in one particular LPA demonstrated that, at a corporate level, carbon targets were being monitored as a priority, while the carbon accounting of local plan policies was not prioritised. Strategies for municipal building management and for switching to low-carbon energy alternatives were mitigation measures that LPAs were driven to pursue internally, but the same emphasis was not necessarily reflected in plan policies for development across the wider LPA area.

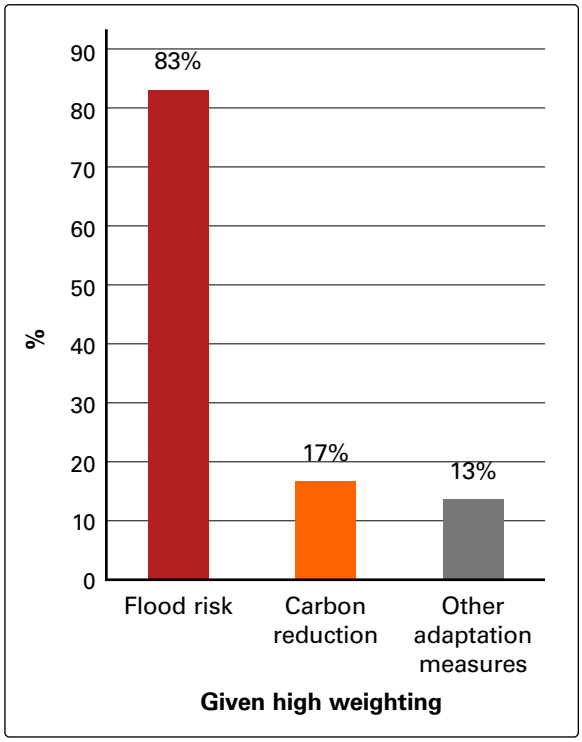

Figure 15 The amount of weight placed on flood risk compared with carbon reduction and other adaptation measures in determining planning applications – online survey results

5.4.2 Decision-making on climate change adaptation policy

The research found that planning for flood risk and resilience was given higher priority than other policies that were relevant to climate change adaptation, such as the risk of and resilience to heat stress and water stress, or the impact on vulnerable groups. Overall, in decision-making, adaptation issues (including flooding) were given higher priority than mitigation issues.

The survey responses revealed that during policy implementation flood risk was given significantly higher weighting than other adaptation issues (such as overheating or the risk to human health) in determining planning applications. In 77% of survey respondent LPAs, non-flooding adaptation measures were given a lower weighting in decision-making by development management teams.

The case study research has shown that meeting growth targets seems to be a higher priority consideration for LPAs than flood risk. Two of the case study LPAs expressed concern over what the Environment Agency's 1 in 100-years-plus climate change flood modelling showed for the local area. There was concern about the impact this risk assessment might have on future land allocations and local developer investment in the area. Interviewees said that if they were to fully include it in their development management decisions then some existing sites may become undevelopable, and developers would pull out and go elsewhere. Similarly, some elected members expressed concern about the implications of using these datasets for growth and housing targets, while it was also noted that 'flooding is very politically sensitive'. Despite this dilemma, respondents concluded that meeting growth targets was the higher priority.

During the interviews it was plain to see that the level of political support given to planning had a significant impact on the strength of policy and policy outcomes. One case study LPA in an area at risk from flooding and located upstream in the catchment had little support from its elected members on flood risk, SuDS, and climate change adaptation and mitigation. This lack of political support and engagement was reflected in the plan policies and decision-making on flooding and mitigation. Furthermore, it became clear from the interviews that LPAs with one or more officers with a concern about climate change were more likely to have a stronger policy on climate change overall. Two of the case study areas also revealed that it was often up to planning officers themselves to defend addressing the issue of climate change if it was to remain a priority in the plan.

5.4.3 Decision-making on planning applications

The online survey revealed a disparity between the amount of weight placed on flood risk compared with carbon dioxide emissions reduction and other adaptation issues in determining planning applications. As shown in Figure 15, flood risk was given significantly more weight than carbon reduction and other adaptation measures in determining planning applications. As highlighted previously, this reflects the presence and quality of policies included in local plans.

5.5 How flood risk management is being addressed in local plans as part of climate change adaptation responses

Many of the findings on the question of how flood risk management is addressed in local

plans as part of climate change adaptation responses have already been highlighted in preceding parts of this report. However, the case studies in particular provided a window onto how the local authorities prioritised flood risk management alongside other planning considerations. They highlighted nuances to how the national policy and legislation for flood resilience is applied, as outlined below.

5.5.1 Adaptation to climate change

The challenges of SuDS policy

The planning and flood resilience teams in all of the case study areas recognised the potential of SuDS as a climate change adaptation response offering multiple benefits for both people and the environment. While the teams in three of the case study LPAs endeavoured to implement a SuDS policy, the case studies revealed the challenge of wording such a policy to ensure its eventual implementation in subsequent developments.

One LPA strongly highlighted the challenge it had faced in defining SuDS as a green infrastructure or climate change mechanism, in addition to its function of managing water on a site. Such a definition of 'green' SuDS could not be provided in the local plan, which had subsequently had an impact on the implementation of 'green' SuDS in the local authority area. The definition of SuDS as 'green' SuDS was omitted from the local plan, with the intention to include further detail in the site allocation development plan document. Such detailed definitions and standards were written by the flood resilience officer, but were subsequently self-censored out of the site allocation development plan document by the planning team. The planning team said that this nervousness over including any prescription was based on the concern of the corporate management team that this would deter local developers. The overall result of the policy wording in the local plan and lack of definition to support the implementation of 'green' SuDS has led to this specific LPA facing challenges in upholding its SuDS policy where it relates to the implementation of anything other than a storage tank on site.

Additionally, in one of the other case study LPAs, the planning team recognised that there was no political or corporate support for or priority given to SuDS. As a result, little effort was made to integrate a SuDS policy that related to adapting to the impacts of climate change, even though the LPA was located in an upstream catchment adjacent to another local authority area that was highly exposed to flooding.

5.5.2 National governance and legislation

It became clear from the case studies that the sequential approach and the exception test were widely applied by LPAs to categorise flood risk areas. However, it was also clear that these approaches were used as a method of permitting development on sites at risk of flooding that may not otherwise have been deemed suitable.

5.5.3 Local governance

Considering the catchment scale in planning for flooding

The case study research found that local planning for flooding by LPAs (including severe weather events and wider river management) was not joined up with an understanding of the catchment scale. In the case study LPAs, none of the planning policy officers or the flood resilience officers were engaged with catchment-scale planning for flood risk. Catchment-related issues were seen as the responsibility and concern of other agencies and municipal bodies outwith the LPA. The document analysis also found that in local plan documents there was little or no reference to join-up between the local plan and catchment-scale issues that may impact on flooding downstream.

The case studies revealed that although river catchment plans are developed by the Environment Agency and provide policy option recommendations, they were not used as a principal resource in planning for local flood risk. For the purpose of local plans, flood-related issues outside of the LPA boundary were not considered as something for LPA involvement. In one case study area some of these catchment plans were almost ten years old. While more recent work was also being undertaken at catchment scale in the case study areas, this was not linked with the spatial planning system in a way that engaged LPA planners involved with the local plan.

The Environment Agency is seeking to refocus operational resources to undertake more engagement in strategic spatial planning, and on aligning the Agency's objectives on flood risk management (for example the capital programme and flood risk management plan

actions) with the local plan process, which should help to address this issue.

Considering flooding for site allocations

The case study research echoed the findings of the document analysis in that all the LPAs that were interviewed focused exclusively on current or existing flood risk, rather than taking a longer-term view. Additionally, the case studies revealed that a hierarchy exists in the ways in which sites are allocated in the local plan. One planning officer said that:

'Site allocations were not on the basis of which site is most or least resilient; issues around landscape had a higher weighting in site allocations.'

The case studies and the document analysis highlighted the following levels of priority, where '1' equates to the highest priority:

- ***1:*** Site allocations are driven by private sector responses to land availability.
- ***2:*** Sites are then filtered on the basis of sustainability appraisal and flood risk in relation to current flood zones.
- ***3:*** Other issues are then considered, such as biodiversity implications and adaptation to future climate, if at all.

It is not clear that this process considers intrinsically resilient locations that are not offered up by the private sector.

All those interviewed during the case study research concluded that the long-term climate resilience of sites in relation to future floodplains was not considered prior to the call for sites. As such, site allocation decisions were not based on the future suitability of the sites available in terms of future flood extents or floodplains.

5.5.4 Understanding risk

Interviewees across the case studies concluded that the way flooding was prescribed and categorised in local plan policy was disjointed. A full understanding of actual risk factors for flooding was not represented, and consequently flood resilience could not be built in a co-ordinated way – despite following the national compliance framework for planning for flooding set out in Section 2.

The dynamic nature of flood risk, in particular surface water flooding, was not always reflected across the different stages of plan preparation. The document analysis revealed that local planning policy on flooding complied with the national framework; however, individual officers in the case study areas said that local plans did not fully reflect local understanding of flood risk, especially the risk from surface water. Interviewees highlighted that:

'There are multiple agencies involved in flooding, and it is a challenge that flooding is divided up into fluvial, surface water and drainage, etc.'

and:

'There is no definitive procedure to measure flooding. The Environment Agency comments on the local plan and then the local authority is responsible for monitoring of it if it has been implemented.'

The Environment Agency also emphasised that if it is to improve its understanding of local flood risk it needs to be more involved in surface water issues to fully understand the local picture – 'flood extent is not purely fluvial, and we need to be involved in surface water'.

Local planning officers highlighted that the monitoring of surface water flows was one such risk factor that was difficult to integrate into local plan policy. It was pointed out that this was challenging and that LPAs did not have a method in place to monitor or measure the impact of paving over front and back gardens through permitted development.[54] Flood resilience officers noted that they had seen a significant increase in surface water issues which they attributed to this unmonitored change in garden areas. However, they could find no way of quantifying this, and felt powerless to respond.

The case studies identified that where recent flood incidents occurred *within* the local authority boundary, there was a general acceptance by politicians that climate change was occurring and that this may play a part in future risk. However, where significant flooding had not occurred recently within the council boundary, climate change was not prioritised as

Note

54 If the surface area to be covered is more than 5 square metres, paving over front gardens with impermeable materials with no provision for the water to run to a permeable area is not permitted development

a dynamic risk factor in relation to flooding, regardless of whether this affected neighbouring authority areas or areas lower in the river catchment. This revealed a lack of understanding of future flood risk in relation to climate change as a dynamic factor. Furthermore, there was no engagement with the relocation of settlements option that is mooted in the NPPF. One planning officer said that:

'The locations where we allow development are right, so the issue isn't new development, but how to rebuild existing places – we have no control over that as planners.'

5.6 Best practice lessons in policy development to support local authority and community action on climate change through the local plan process

Five key examples of good practice emerged from the research, particularly from the case study areas, where there was more opportunity to assess the local measures on climate action that had been used during plan preparation, had been included in the plan, or were being implemented. These five examples are outlined below:

- **Setting up and using cross-party elected member working groups** was a key element of success for two of the case study LPAs. Additionally, lack of cross-party political support for planning, the plan and plan policies on climate change was an element that restricted what the other two case study areas were able to achieve on climate change through the local plan process. Cross-party working groups set up for plan development helped to keep members aware of the policies that were being included in the plan, which allowed the plan draft to pass through committee smoothly. Furthermore, one deputy leader commented:

  'It has provided support. Members like to be in the group because it means they know what is going on and that they know the policy issues.'

  Additionally, the research found that these groups also provided support for the officers involved in plan preparation, since they were able to present policy options on climate change adaptation and mitigation to a forum whose members were aware that this had already been set out as a policy issue. In one case, a specific member had been identified as a key liaison point with the planning team on plan development. This meant that, through regular updates from the officer team, the cross-party working group could be kept informed by another member of the group in a way that reflected the corporate priorities of the LPA.

- It became apparent that the **combined authority model** could be used as a basis for a producing a shared evidence base on adaptation across the combined authority area, particularly on flooding. One case study LPA indicated that it intended to take the opportunity to progress a combined infrastructure plan update with flood resilience modelling. The intention was then to use this as a basis for a cross-boundary resilience plan that would interrelate with catchment planning for flooding across the combined authority area. This example shows the potential for combined authorities to work together on understanding flood resilience in a way that is related to risks that extend beyond a single LPA boundary. This type of understanding of flood risk was not something that other LPAs examined in the study were considering.

- One case study LPA highlighted, as part of its approach to developing, planning and implementing action on climate change adaptation, the **innovative use of other policy agendas to fund resilience initiatives**. One example of this was through the use of the transport and infrastructure fund to manage localised flood risk, improve pedestrian access in an urban area, and create a water storage facility. Another example within the same LPA was the use of the health and green infrastructure agenda to make the case for funding resilience measures within large-scale developments for the benefit of both new and existing communities. While these examples show how climate change can be funded through other LPA budgets, they also demonstrate the potential for LPAs to communicate the multiple benefits of climate change policy action while promoting local priorities on health, vulnerability, green infrastructure, and many other local issues. This was also highlighted by one LPA as a way through which it was able to integrate environmental benefits to pass the NPPF viability test.

- One LPA highlighted the benefit of the **provision of integrated training for neighbourhood forums** at forum inception, to inspire and inform. But it also noted the detrimental impact of not following this up with practical guidance on how to integrate the issues covered into neighbourhood plans. It emphasised that previous training had been very well received by neighbourhood groups but that without follow-up sessions these groups had been at a loss as to how to use the information presented. Best practice would have included follow-up sessions that demonstrated the benefits of addressing in combination issues such climate change resilience, health and place-making, and how this could be used as a thread running through neighbourhood planning policies.

- One LPA involved in the case studies highlighted **a way in which it could provide development management officers with the climate change and flood risk evidence that they needed for decision-making**. The LPA had already set up an electronic system for development management that was pre-loaded with detailed GIS maps related to local plan policies in an accessible way. The system includes an existing evidence base on climate change and flood risk, to be used electronically in assessing all planning applications. It consists of a computerised land chart that enables a more detailed examination of the strategic flood risk assessment and other spatial evidence bases, and in doing so it helps to provide recommendations for the development management process. The intention is to update the system with new additional information on flood allowances and new surface water maps provided by the Environment Agency, and with other flood data being collected by the LPA's flood team. This electronic system for development management also works as a means through which monitoring information could be gathered on policy implementation for future plan development.

5.7 Key factors contributing to effective policy-making

The findings reported here show that there a number of key factors that contribute to effective planning policy for both climate change adaptation and mitigation. These are considered in more detail through the emerging analytical themes presented in Section 6 and the recommendations set out in Section 7. However, this Section concludes by identifying five key aspects which are related to the analytical framework, as set out below:

- ***The evidence used:*** Local plan policy was found to be effective where there had been a coherent join-up between the evidence used to inform policy options and the final policy outcomes. In addition, an articulation of climate change as a dynamic risk factor, and an active engagement of LPAs with this, was important to promoting policy action on climate change adaptation and mitigation. The research found that in many cases LPAs felt that there was a lack of access to a solid evidence base on climate change mitigation and non-flood-related adaptation that could be used to fully understand the impacts of climate change and therefore what the policy response should be. One way to contribute to effective future policy-making was highlighted as the continued joint working across local authority boundaries to develop and share evidence and to promote an understanding of the cross-boundary impacts of development, carbon dioxide emissions, upland river management, and other issues related to the local plan.

- ***Who is involved, and when:*** Political and corporate support for spatial planning by the local authority was found to be a key factor in integrating effective climate change policy, as was political and corporate support for addressing climate change by the local authority. An understanding of planning as an opportunity and means through which to enable sustainable development across all LPA priorities was found to be enabling in policy preparation. Furthermore, establishing cross-party sounding boards for local plan development provided both officers and elected members with a support network through which to promote and discuss options for climate change policy actions. Where such groups were in place, the political and corporate management teams were more likely to understand the need for and support policy action on climate change.

  While this research was not able to fully assess the scope of neighbourhood

planning's involvement with climate change and the local plan process, what did become clear was that neighbourhood forums seem uncertain about how to include issues of climate change in their plans. Where policies related to mitigation were included, questions were raised about how to phrase any policy so that it would be 'appropriate'.

- ***How policy details are developed and articulated:*** The document analysis and the case studies highlighted that the way climate change adaptation responses and climate change mitigation actions are articulated in local plans has an impact on their effectiveness. First, the definition of key policy terms such as 'sustainable urban drainage', 'feasible' and 'climate change impacts' in the local plan must provide clarity in order to be effective. Secondly, just *where* references are made to climate change within the plan is an indicator of the priority given to the issue by the LPA. Highlighting climate change, adaptation or mitigation in the 'bold type' policy wording is more effective and directive than if the reference is made only in the policy preamble.

  Another key factor in the development of effective climate change policy is a clear understanding in corporate management teams of the long-term economic and social benefits of responding to climate change. Effective policy on adaptation takes a long-term approach to planning for places that goes beyond a focus on five-year housing land supply. This research shows that success could be achieved by integrating climate change adaptation and mitigation into other longer-term agendas, such as health, place-making and infrastructure provision. This would also facilitate a more holistic approach to climate resilience.

- ***How the national priority of addressing climate change is interpreted, and the role of statutory advisers:*** Ambiguity over the application of the NPPF viability test was shown to promote a cautious policy response to both climate mitigation and adaptation within local plans. The impact of the test was notable from the survey, the document analysis and the case studies, both at the policy options phase of plan development and in the implementation of policy. As such, the research has found that the NPPF viability test played a key role in the effectiveness of policy adopted in local plans. The Planning Inspectorate was also involved in this process through its variable application of the viability test during plan examination.

  The presence of the Environment Agency as a statutory body on flooding was found to be a key factor in ensuring that policy and legislation related to building flood resilience was implemented via local plans. Interviewees highlighted that there is no such body for mitigation, and that, if there were such a body, local plan policies on carbon reduction and sustainable energy might have been better informed, developed, defined and guided. The research showed that, overall, the legal duty set out in Section 19 of the 2004 Planning and Compulsory Purchase Act was not interpreted as a legislative duty; rather, it was seen as simply a consideration for plan development.

- ***Monitoring of plan outcomes to inform future work:*** Monitoring the outcomes of existing plan policy and the policy development process can inform LPAs' future work on climate change. Whether primary data is gathered by LPAs is important for future evidence bases and the understanding of how policy is implemented – whether it is working or not. However, this research found that LPAs often look to private consultants and the Environment Agency for obtaining evidence, rather than engaging in primary data gathering themselves over time. The use of detailed, spatial monitoring data from the monitoring of previous plan policies and previous flood events can provide a detailed local evidence base to inform both the development of future local plan documents and development management decisions. Furthermore, this research found that having the expertise, capacity and skills within local government to fully engage with and plan for climate change is a crucial factor in effective policy-making.

section 6
emerging analytical themes

While this Section provides a detailed list of the emerging analytical themes, there is one major conclusion which skews the following discussion towards adaptation, and particularly flood risk. This is not primarily the result of the research methodology, but is simply due to the absence in the local plan process of evidence, analysis and policy development on climate change mitigation. Despite the policy and guidance provided by central government and the nature of planning law, the majority of local plans examined in the study did not have a coherent approach to carbon dioxide emissions reduction that met the test of NPPG requirements. It is therefore not possible to judge the effectiveness of such an approach, since it was simply absent.

Ten provisional themes have emerged from the findings:

- evidence-gathering;
- strategic co-operation;
- stakeholder engagement;
- the resources available for plan-making;
- the skills of planning officers;
- political commitment;
- compliance with national legal and policy frameworks;
- variability of policy priority and final policy outcomes;
- delivery and outcomes; and
- monitoring and review.

6.1 Evidence-gathering

Despite the guidance contained in the NPPG on assessing carbon dioxide emissions there was a striking absence of any systematic approach to measuring the carbon performance of plan options. This was characterised either by the absence of any process for assessing carbon or by a process which lacked clear definitions of what emissions were measured in relation to what plan policy and activities. This lack of a clearly articulated process with clear and precise methodologies meant that even when generalised policy in a plan advocated carbon dioxide emissions reduction, that authority had no way of measuring compliance with Section 19 of the 2004 Planning and Compulsory Purchase Act, nor, as result, any way of effectively monitoring progress.

While the survey results suggested that 67% of LPAs did not have any form of carbon reduction target, it would not be safe to assume that the remainder had an effective evidence-gathering process in relation to carbon.

In relation to adaptation, the research results illustrated a much more complex picture. Broadly, they confirm a much stronger approach to dealing with flood risk on all parts. This reflects the much greater level of emphasis in guidance on data sources, methodologies and how the results of evidence-gathering relate to policy outcomes in the sequential approach and the exception test. This position is in marked contrast to wider climate change adaptation, where responses were much more variable and often simply absent. There was a general lack of any systematic response in relation to social exclusion and climate-change-induced extreme heat and threats to human health. As a result, climate adaptation has in practice become, as one respondent explained, ‘about water in the

wrong place'. In fact, local plans, with the exception of increasing surface water flooding, offered strong evidence on and policy responses to existing flood risk.

This conclusion has wider implications for issues such as maladaptation because of a lack of a holistic approach to adaptation. The results were significant not simply in illustrating an evidential and analytical approach which conflated adaptation only with flood risk, but also in suggesting that, even then, flood risk was not always related to climate change (see below).

The content of some local-authority-led strategic flood risk assessments (SFRAs), as well as more detailed FRAs for plans or masterplans, were unsurprisingly strongly linked to Environment Agency data. This evidence, along with existing Agency flood risk mapping resources, was the core evidential base for most local plans. On the whole, this evidence, and particularly the SFRAs examined in this research, could be described largely as a passive evidence base in the sense of providing a view of current circumstances – existing floodplains, for example. The application of more active factors contained in the Environment Agency flood risk climate change allowances or in the approach of UK Climate Impacts Programme (UKCP09) methodologies did not seem to have the intended logical outcome in some plan processes. The research could identify only one example of a local plan using an assessment of how flood risk may change over time, although this did not extend to where floodplains might be in the future and how their categorisation might change.

Part of the explanation for this problem is the complex methodologies required to make a judgement. These methodologies (for example set out in UKCP09 guidance) require significant assumptions about global emission scenarios and the selection of acceptable probabilities of risks and impacts, which, for reasons discussed elsewhere, are almost impossible for local plan teams to grapple with. There was a striking commonality among respondents in the case studies about the need for a strong and simple narrative between the core evidence, what that means in terms of broad impacts, the expression of those impacts in ways that communicate with wider stakeholders (such as flood risk maps), and, finally, clear policy responses. In relation to information on aspects of flood risk, the Environment Agency provides such guidance in a series of allowances which can be applied to, for example, coastal and river flooding. Of all the resources available on climate change, this informed 'rule of thumb' approach was regarded as the most useful. Such an approach is not available for other key aspects of adaptation, such as overheating or water stress.

SFRAs should provide such detail where they have been prepared, and depending on the robustness of their assumptions on climate change. However, there was a heavy reliance on Environment Agency expertise and advice, and concern about the Agency's diminishing resources. It was significant that while planning teams relied heavily on flood risk modelling from the Environment Agency, these models were developed for the Agency's own purpose – to understand flood risk at a local level – and not specifically for spatial planning purposes. It was not clear from the research how much this mattered to the outcomes of planning for flood risk, but there is a tension between the need for planners to have a highly detailed expression of flood risk in urban areas and the slightly broader lens of EA flood risk mapping.

The notion of flood risk as largely a static risk factor was a dominant assumption in the evidence base of the majority of local plans reviewed in the study. For example, the spatial approach to growth was based on our current understanding of the spatial boundaries of floodplains, and, despite the Environment Agency flood risk allowances, it was hard to see evidence in SFRAs or local plan policy of adequate engagement with the defining feature of climate adaptation – namely, its dynamic character over time. The study found no evidence of an articulation of the relationship between the very long timescales involved in considering the built environment and the likely changing nature of climate impacts which might lead to different spatial distributions of urban development or resilience measures. In those places most directly affected there were some signs of a growing political awareness of the unpredictable and severe nature of impacts related to surface water flooding and their connection with climate change, but little certainty over how to deal with this in the future.

It was also notable that while detailed financial data was available on the costs and benefits of individual flood defence schemes, there was a general lack of evidence about the wider economic benefits of flood resilience measures – such as sustainable urban drainage systems

(SuDS) – or on the long-term economic costs of flood events. It is likely that the justification for and prioritisation of stronger adaptation policy has been harder to support as a result.

The case studies of larger urban areas also demonstrated evidence gaps in understanding specific changes in the urban environment. For example there was, in one case, no clear picture of the amount of permitted or uncontrolled change to hard-surfacing garden space for car use. As a result, and despite it being an NPPF policy requirement for LPAs to develop their own local flood risk evidence, there was no clear policy response on the relationship between increased hard surface cover and increased surface water run-off. This overall view of planning teams as recipients of climate evidence rather than as engaged in active data collection was summarised by one respondent as 'the evidence on flood risk is what the Environment Agency tells us it is'.

Despite these concerns, dealing with flood risk did represent the best example of the planning system's responses to a vital impact of climate change. The evidence-gathering, methodologies and policy-making here were far more sophisticated than any example the research could uncover on climate mitigation or any other aspect of adaptation with spatial impacts, such as extreme temperatures.

6.2 Strategic co-operation

There was a broad consensus among practitioners that the lack of a strategic planning framework at a geographic scale that reflected the realities of factors such as river catchments was a major barrier to cost-effective responses to climate change. While climate change did feature in some of the discussions on the duty to co-operate, these exchanges were overwhelmingly focused upon housing growth. There was some evidence of shared evidence-gathering, a trend that appeared to be driven by financial austerity. The opportunity for the joint commissioning of evidence appears to represent one of the major opportunities for managing decreasing plan-making budgets.

Despite the presence of catchment management plans, co-operation in the same catchment areas could remain quite limited. In those areas where upland land use management has acute impacts on urban areas in the lower reaches of the catchment, one might expect a greater policy 'conversation'. In some cases this was limited by the low levels of development in upland rural areas and by the major limitation that the English land use planning system does not control wider agricultural, forestry or leisure uses.

The presence in some areas of professional networks among local authorities, including the Environment Agency, provided a valuable forum for the exchange of learning and appeared to provide for a very positive way of sharing limited resources effectively. Devolution and combined authorities may offer similar opportunities. While a combined authority was playing an influential role in planning issues in two of the case studies, this was not focused on climate change. A significant change of policy emphasis would be required for combined authorities to deliver on their potential in making a strategic response to climate change.

There was also a complex picture for the governance of climate change policy in local plans. For adaptation, local plans have the support of the Environment Agency, albeit focused on flood risk. For mitigation there is no source of support or guidance beyond the outline in national policy. It is hard to identify a logic for this position. Likewise, despite reform to the governance of flood risk, the division between top-tier flood authorities, the Environment Agency and LPAs can seem artificially complex, particularly when the source data for SFRAs is derived from the Agency. Given the very marginal resources available, condensing the agencies involved in data collection may be useful, and is considered in Section 7.

6.3 Stakeholder engagement

This report acknowledges the weakness of the research in being able to adequately reach out to community groups involved in the plan-making process. The results are based much more on the perceptions of planners and local politicians rather than of communities themselves. In this regard it is important to note that while practitioners in the four case studies recognised the importance of community engagement in plan-making, they also noted the difficulty of resourcing such activities. From these limited results, two significant issues emerged.

First, even in those case study areas directly affected by severe flooding there was relativity weak community engagement in the plan-making process. This is perhaps understandable given the other immediate priorities that communities have to deal with after a flood event, but the expectation that local civil society groups would seek to prioritise action on climate change was not supported by the limited evidence. In fact, the study found that it remains the private sector, in the form of developers, landowners and their agents, who dominate related submissions to the local plan process.

Secondly, neighbourhood planning's role as a new arena for the community to engage in developing climate change solutions seemed largely a matter of potential rather than reality. The take-up of neighbourhood planning was highly variable, with one major urban area having 32 such plans while a neighbouring authority with a significant urban centre had just one. Even in rural areas with severe flooding issues, the take-up of neighbourhood planning was low and not focused on climate change. In one case study area where the take-up of neighbourhood plans was significant, there was no strong representation of climate change issues. In those plans that did feature climate-related policy on renewable energy, the policy was described as 'aspirational' rather than realistically deliverable.

6.4 The resources available for plan-making

All of the practitioners interviewed for the case studies, including elected members, highlighted the significant cuts to the planning service as an obstacle to plan preparation – including reduced staffing and limited training, as well as less opportunity to commission external expert evidence from consultants. The position was not uniform, with some authorities able to retain a significant staff team. However, for those in smaller rural districts, the plan-making team was typically about two full-time members of staff, and in some cases they had other responsibilities too. The lack of resources was found frustrating and demoralising, and it was characterised in some LPAs facing severe climate impacts as being at, or below, the critical mass necessary to develop effective local plans. In larger urban areas, forward planning teams could be made up of up to ten full-time employees, although not all were qualified planners.

In the same way, the time given and advice made available to the public and to applicants had, in all cases, been reduced, with greater reliance on standing advice on websites and less opportunity for detailed exchanges on applications.

Respondents raised concerns about the loss of supporting staff on issues such as carbon reduction, energy and sustainable development both in their own authorities and in two-tier areas at the county level. Developing the necessary skills in spatial planning and climate change was also highlighted as a key issue. Specific approaches to dealing with climate change were still novel to many planners, and access to affordable training was a major issue. The same kinds of issues surrounded the Environment Agency, with reduced staff teams on planning, a strong emphasis on meeting the targets for response times, and greater reliance on standing advice in plan-making.

6.5 The skills of planning officers

The four case studies demonstrated that there remains in local government a committed set of practitioners determined to get the best outcomes for their communities. However, there is no doubt that resource cuts to the planning service have reduced some plan-making teams to a point at which they can no longer actively innovate on climate solutions or have access to the latest technological opportunities in renewable energy. This is not simply about reducing the scope of training budgets but, in some cases, is the result of an inability to justify time away from the office for training. The position uncovered by the research was not uniform, but the implications for smaller, cash-strapped authorities was a hollowing out of expertise on climate-related issues, with consequent implications for the quality of local plan policy.

6.6 Political commitment

Practitioners in all four of the case study areas were clear that climate change was no longer seen as the political priority it had been ten years ago. For the staff of government agencies this was signified by messages to 'not to get in the way' of development. For both local government and government agency staff there was an overwhelming focus on the speed of

decision-making and meeting process targets, rather than necessarily being able to achieve high-quality outcomes.

Those local government politicians interviewed for the case studies were emphatic that their priority was jobs and growth. In some cases, this led to the approval of projects against officer advice and in vulnerable locations. This was often to achieve regeneration objectives in places with inherent vulnerability to flood risk and severe weather. In such cases the politicians clearly understood the dilemma, but felt caught between the pursuit of more jobs and economic sustainability and the need to deal with flood risk. Significantly, this did not result in higher standards in individual building resilience, for example, which was ruled out by viability questions, but instead resulted in increased lobbying for traditional flood defence measures.

Only in one location, which had suffered severe flooding, was there a sense that dealing with climate change adaptation was the key foundation to economic growth, rather than a burden on the local authority and private sector. In this case, there appeared to be an important change in culture, not simply through cross-party working to agree local plan objectives, but through a much more open debate with the development community about the necessity of finding solutions. This had led to ambitious plans for growth alongside equally ambitious plans for resilience. Wider corporate 'buy-in' to climate action was also a defining ingredient of success – through seeing the local plan as a key element of corporate strategy and by securing the commitment of senior political and corporate management. This support was the key to continued resourcing of the planning service.

The speed of the preparation of local plans was also enhanced in two of the case study areas by cross-party steering groups of elected members, which provided certainty to planning officers on objectives and timescales. In other cases, low resources and a lack of political engagement in the plan led to much weaker responses, even where severe weather and flooding had been a significant issue in recent years. In such cases, there was clearly frustration among planning officers over the failure to apply the range of available solutions to the growing problems caused by severe weather.

While it is perhaps self-evident that political and corporate commitment is crucial to successful responses to any public policy issue, it is significant in that such commitment is perhaps more important that any structural aspect of the planning system. The local planning system's ability to deal effectively with climate change is defined not simply by the plan and planners, but by the skills, awareness and priorities of local politicians who have the final say on plan content.

6.7 Compliance with national legal and policy frameworks

Section 2 of this report set out the powerful legal and policy frameworks for climate change action in the 2004 Planning and Compulsory Purchase Act and the NPPF and NPPG. One of the key paradoxes revealed by this research is that despite the importance placed upon these frameworks by respondents, the majority of local plans did not comply with them.

This was most evident in relation to climate mitigation, but **the level of non-compliance is even more significant given that both the law and guidance make clear that local plans *must* have policy on mitigation and adaptation**. The research results indicate that while the majority of respondents thought that they had considered Section 19 of the 2004 Planning and Compulsory Purchase Act, a majority of plans also had no carbon reduction targets. There are a number of important implications of these findings, as outlined below.

The first is that local authorities continue to misinterpret the law and guidance on climate change, believing that they need to 'consider' the issue in plan-making but are not obligated to include policy to reflect a clear mitigation approach. There is some evidence from other research that this problem has been reinforced by guidance produced by government agencies.

The second aspect is how such a clear failure to uphold government policy in the plan-making process comes about. There is a direct relationship here with political and corporate priorities as discussed above, but at face value it is hard to find a clear explanation, given that there appears to have been no departmental or ministerial communication that changed the priorities of the NPPF on climate mitigation. Part of the explanation may relate to the very strong message often sent at conferences and events by successive ministers that their overwhelming

priority is the five-year housing land supply and housing provision. As well as the formal messages surrounding curtailing the zero-carbon ambition and onshore wind, an informal culture has been allowed to develop which sees most aspects of climate change as secondary considerations to approving housing units. Flood risk can be seen as the exception to this rule, and further study is required to understand how messages on climate change in planning have evolved over time. The best summary of this complex position is that **practitioners are clear about the importance of climate change in general, but are not clear about its priority in relation to the test of national policy on housing and viability**.

The third factor is the perceived contradiction in national policy between advocacy for taking action on, for example, carbon reduction in principle, but then specific policy barriers that prevent the means of delivering on this commitment. The effective moratorium on onshore wind and the confusion about how to approach building standards after the cancellation of the zero-carbon commitment illustrate how important policy options on reducing carbon dioxide emissions are no longer part of the toolkit of local plans. There was a shared view among respondents in the case studies that this had made delivery on carbon reduction much more difficult and, above all, confusing.

A similar picture emerges on the implementation of SuDS, where changes to the approval process by national government and, in particular, the inclusion of SuDS as a local plan requirement, have led to a complex and sometimes confused pattern of delivery. The first striking feature of the case studies was the confusion in the minds of some practitioners between 'normal' SuDS, reflecting a commitment not to increase run-off from a site, often based on storage solutions (such as underground tanks), and 'green' SuDs, involving designing solutions with multiple flood, biodiversity and human health benefits. While some urban areas were achieving relatively high levels of the former, there was much less focus on 'green' SuDS. The dual and very different meaning of SuDS in national policy and consequently in local plans limits the value of any overall assessment of their level of delivery.

The NPPF viability test was cited as a major issue in the delivery of a whole range of climate mitigation and adaptation measures. The impact of the test appears to indicate another example of the inherent tension in the NPPF between a policy imperative not to compromise the delivery model of the development industry and a desire to achieve outcomes that have important economic and social value. Section 2 of this report described the operation of the viability test and in particular its application to plan policy. The nature of the test, which excludes the economic value of measures such as SuDS, was repeatedly cited in the survey and in the case studies as the dominant factor in the weakening or removal of climate change policy. This applied particularly to energy requirements and to adaptation measures such as SuDS or green roofs. It was less of a factor for policy on traditional flood risk alleviation measures.

The viability test was perhaps the pre-eminent factor in explaining the gap between the imperative in the NPPF for carbon reduction and actual delivery on the ground, since it allowed developers to argue that any measure that comprised the profitability of the highly speculative 'current trader' development model should not be included in plan policy. The policy also appears to have had a much wider impact on the culture of planning: although the number of actual cases of policy being struck down in Planning Inspectors' reports was limited, local authority planners appeared to be engaged in processes of self-censorship – i.e. recognising that directive policy was likely to be struck down, they simply removed it or weakened the language.

Although it was beyond the scope of this study, it is a significant marker that London's strategic plan continues to uphold the strongest expression of climate mitigation policy, including a commitment to zero-carbon. This partly reflects the nature of the viability test and the ability in higher demand areas to require greater commitment from the development community. The implications for many lower-demand areas examined in this study are equally significant, with the variable response to climate change defined by land values. The degree to which this will reinforce regressive outcomes over the long term requires further study.

We can be clear about the important role which the Planning Inspectorate has played in the process. Since the Planning Inspectorate applies the soundness test (and this test clearly involves the degree to which a plan is compliant with

national law and policy), one would expect no plan to be judged sound without some form of, for example, carbon compliance regime. The fact that a significant number of plans cannot meet this test suggests that compliance is based on a highly variable interpretation of the NPPF. In fact, the document analysis process illustrated just this variability in Inspectors' reports. In no cases was the very specific legal requirements of Section 19 of the 2004 Planning and Compulsory Purchase Act (that plans must have policy on climate mitigation) explored in any explicit detail.

Since the role of the Planning Inspectorate is pivotal in signalling the acceptability of plan policy, its approach to the soundness test undoubtedly reinforces the wider sense of climate policy as 'nice to have but not essential', as one study respondents put it. The reasons that the Planning Inspectorate has adopted this approach has a wider resonance with of the de-prioritisation of climate policy nationally. They relate to ministerial messages about growth and housing, to skills and resources, and to a failure to grasp the approach to carbon set down in national policy.

6.8 Variability in policy priority and final policy outcomes

While there was a variable approach to data, there was also a highly variable approach to the expression of climate-related policy. This was evident in a number of ways, and is closely related to the discussion on viability and to the conclusion that climate change often defaults to a discussion of flood risk. There were a limited number of examples in which climate change was a key plan priority and was then articulated as an integrated policy objective in relation to climate mitigation and adaptation. In the majority of cases, the wider policy 'narrative' on climate change was less clear and was again defined by action on flood risk.

There is a useful analytical comparison with how housing is dealt with in local plans. While there is still some variability of approach and of course in detailed outcomes, the metrics and policy for housing provision are much more clearly expressed, resulting in much more directive outcomes through site allocations policy. Housing and climate change policy are both complex spatial questions, but their differential prioritisation in local plans relates not to any intrinsic difference in the nature of policy solutions, but to the contrasting corporate and political priorities given to the two issues.

The detailed expression of climate change policy in local plans was also highly variable in relation to the terminology used. There were a limited number of cases in which the language of policy was clear and directive, involving words such as 'must' and 'should'. However, the majority of policy was framed using qualified and much vaguer language such as 'should normally' or 'should consider'. Policy increasingly directly reflected the viability test, by simply stating that the policy outcome should be delivered 'where viable' or 'where feasible'. This approach defers the question of whether a specific outcome, such as SuDs, is delivered to site-by-site assessments of viability.

6.9 Delivery and outcomes

The final content of local plan core strategies and site allocations reflected the factors identified above, with a general absence of effective carbon dioxide emissions reduction measures.

While the position on adaptation is complex, with some strong positive responses, the study did not find evidence of a fundamental reconsideration of plan policy in the face of the evidence of a dynamic and changing climate. On the whole, development continues to be focused on existing urban areas, even when they have critical long-term vulnerabilities. Consideration of new patterns of growth in intrinsically more resilient places is not yet discernible, and in practice a considerable amount of significant-scale development is located in places that will require extensive resilience measures. One might have expected that, in the face of this continuity of approach to broad patterns of growth, there would be a consequent transformation in building resilience in terms of use, materials and wider design. Even in areas susceptible to flood risk, this approach was largely absent, with reliance placed instead on traditional flood defence measures.

6.10 Monitoring and review

One clear conclusion of the research findings is that without clear policy targets it is difficult to develop successful monitoring regimes for

policy. This was most evident in relation to carbon dioxide emissions, and is directly related to the methodologies and data applied in the evidence base for plans. The annual monitoring reports (AMRs) required of local plans are no longer collated and analysed centrally, and the AMRs examined as part of the document analysis stage of the research reflected a strong emphasis on the five-year land supply requirement. In no cases did the research find a local plan monitoring system that dealt with the carbon performance compliance of policy outcomes. Nor was there any evidence of the monitoring of wider climate adaptation measures beyond the amount of housing allocated in floodplains collated by the Environment Agency. The wider contrast between this position and national data collected for the quantum of housing is striking.

6.11 Conclusions

This research study reveals a major gap between the potential of local plans to shape low-carbon and resilient places which accord with national policy and the actual performance of local plans being prepared now. The poor performance of local plans on carbon is stark, and while the picture on adaptation is more complex, performance still falls short of the kind of challenges and responses outlined in national policy or indicated by the climate science. The reasons for this poor performance are complex, ranging from contradictory national policy to low corporate and political priority and lack of key resources and skills.

section 7
recommendations

Although the research reported here was based on just a sample of post-NPPF local plans, the results are nonetheless stark. Section 5 makes clear not only the extent of the gap between planning's potential to contribute to tackling climate change and its current performance, but the general failure of local plans to achieve the minimum standards set out in national planning policy. **The degree of non-compliance becomes even more significant given that both the law and guidance make clear that local plans *must* include policy on mitigation and adaptation.** The research study found evidence of good practice on climate change, but it was exceptional rather than the norm. The results highlighted the highly variable response of local plans to climate change. This was a reflection not of tailoring policy to local circumstances but of differing prioritisation.

The recommendations do not address all aspects of the complexity of the findings of this report, but instead tackle two fundamental issues:

- the prioritisation of climate policy in line with national requirements; and
- the promotion of greater consistency in local plan policy development.

The recommendations are centred around ten broad areas of action and opportunity which could significantly and cost effectively improve the performance of local plans in relation to climate change. Underpinning the approach taken is the example of planning for housing or minerals, where there is much greater clarity on how objectives and evidence are to be applied in local plans. All of this should be seen in the context of the Government's objective to ensure that there is full plan coverage by 2017, which implies a rapid increase in the production and approval of local plans.

Recommendations for central government

Recommendation 1
Re-prioritise climate change in the local plan system

The dominant pre-condition for improved outcomes on climate change mitigation and adaptation in the local plan process is a clear political signal from central government that such action is a priority outcome for the local plan. Ministers have the opportunity to clarify the place of climate change through an urgent parliamentary statement or through a chief planning officer letter to local authorities.

This message needs to be clearly directed at LPAs, the Planning Inspectorate and government agencies, as well as the wider public. The primary purpose for such a message is to challenge the culture that has evolved in planning practice which sees addressing climate change as optional and always secondary to the growth agenda. In fact, robust responses to climate change are the foundation to a successful housing delivery model – ensuring, for example, that planned growth is in intrinsically more resilient areas and therefore reducing the need for expensive traditional flood defence measures.

The Government can play a significant role in supporting local action by ensuring that local authorities have access to the latest climate science and to the evidence of the impacts of climate change on UK and global communities in a more accessible and streamlined way. While there is a wealth of data and advice available, it is not currently at the front of the corporate priorities of local government, partly because it is not distilled into a series of straightforward and government-endorsed messages.

The economic and social dimensions of climate change need to be at the centre of awareness-raising for politicians, particularly the economic impact of failing to secure and communicate the resilience of communities to investors. Some local authorities have already recognised this imperative, and their efforts need to be encouraged. **Local and central government should invest in training and awareness-raising to ensure that there is a shared understanding among senior politicians and officers of the corporate implications of climate change.**

Recommendation 2

Provide clarity on the legal requirements on climate change

The Government should move quickly to address the widespread misunderstanding about the requirements of Section 19 of the 2004 Planning and Compulsory Purchase Act in relation to climate change mitigation and adaptation. Section 2 makes clear that there is little room for interpretation about what this requirement means in law, in the sense that local plans must include policy on mitigation and adaptation. The precise nature of the policy requirement is set out in the NPPF and NPPG, but in practice LPAs see this as a duty to consider such policy rather than a duty that requires them to have such policy. The heart of this issue is primarily one of communicating current requirements, and this would be a cost-effective way of driving change.

The Department for Communities and Local Government should issue a clear statement through a chief planning officer letter to make clear the nature of the requirements of Section 19 of the 2004 Planning and Compulsory Purchase Act, and in particular that all local plans must contain policy on mitigation and adaptation. Such policy must be in conformity with the NPPF and NPPG requirements on climate change.

Recommendation 3

Provide clarity in national policy

National policy as set out in the NPPF and NPPG does provide for a clear approach to climate change. Changes made by subsequent amendments to energy policy, the 'zero carbon homes' target and the delivery of sustainable urban drainage systems are perceived by practitioners to have created contradictions between the imperative to reduce carbon dioxide emissions and the practical deployment of low- and zero-carbon technologies. In practice, significant numbers of local plans are not compliant with planning law or the NPPF.

Four key changes to national policy set out in the NPPF are required:

- **The imperative, set out in paragraph 6, that NPPF policy should be 'taken as a whole' needs to be reinforced so that all aspects of the NPPF are seen as important to the fulfilment of the soundness test of local plans. This should be emphasised in the section on plan-making which begins at paragraph 150 and currently contains only the briefest mention of climate change. In addition, paragraph 182 of the NPPF, dealing with the examination of local plans, should be reinforced to stress the holistic nature of application of NPPF policy to the soundness test of plans.**
- **The NPPF and the NPPG emphasise the need to consider flood risk and provide for a detailed approach to policy (in the sequential approach and exemption test) which is supported by the resources of the Environment Agency. National policy provides only the briefest mention of other important adaptation responses. Paragraph 99 should set out a fuller range of adaptation impacts and should, along with further detail in the NPPG, reinforce the role of green infrastructure and make explicit the link between social exclusion and the impact on human health of particular aspects of severe weather resulting from climate change, such as high temperatures.**
- **The current definition of viability for plan-making, set out in paragraph 173, needs urgent reform. The main aspect of this reform should be to include as part of the assessment of viability not only the profitability of a development project to the developer and landowner at that time, but the wider and long-term benefits of, for example, climate resilience measures for wider society and**

ultimately the public purse. The cost of retrofitting adaptation measures or dealing with the consequences of damaging severe weather are real, and they fall on the wider economy through taxation and insurance costs. As a result, there can be no logical reason for their exclusion from the assessments of the utility of plan policy designed to prevent damaging carbon dioxide emissions or to ensure resilience.

- **The review of the implementation of sustainable urban drainage systems (SuDS), to which the Government is committed, should focus on providing a clear indication of the current level of SuDS delivery and the split between 'normal' SuDS and 'green' SuDS. In the absence of reforms to the viability test, the Government should consider returning to the original delivery mechanism for SuDS, set out in the Flood and Water Management Act 2010. Guidance should also make clear that LPAs should maintain up-to-date data on changes to the surface characteristics of the urban environment and ensure that policy prevents the provision of non-porous surfaces.**

Recommendation 4

Define the scope of climate evidence in local plans

Section 5 makes clear that evidence relating to climate change is complex, and that the way it is deployed in local plans is often partial. For example, on mitigation the evidence is often simply absent. For adaptation, the evidence-gathering often defaults to considering flood risk. There is a strong case for nationally determined guidelines for mitigation and adaptation evidence for local plan-making.

For mitigation, scope guidelines should make a clear link between the work of the Committee on Climate Change, carbon budgets and the required action to be taken by LPAs through planning, to provide an articulation of what the NPPF currently requires in terms of 'radical reductions in greenhouse gas emissions'. They should include greater detail on how metrics for carbon auditing and monitoring should be deployed across a range of sectors, and where the limits of responsibility might lie for sectors such as transport.

For adaptation, it is vital to set a national standard for the scope of evidence. This requires further detailed consideration, but it should include issues beyond flood risk, including temperature and a wider range of public health risks. On the whole, this evidence is available, but it should be explicitly identified in national guidance as a local plan input.

Recommendation 5

Deal clearly with risk

Evidence on climate change provided at the national level should avoid providing outputs as broad statistical probabilities based on choices about key inputs such as emission scenarios. Proportionate 'rules of thumb', clearly defined as such, would be useful inputs in planning the built environment. The example of the Environment Agency flood risk allowances for climate change provides a useful starting point for this approach. Since all the impacts of climate change play out as complex probabilities (related always to aspects of local conditions), and given the scarcity of skills and resources on the ground, it would be useful to:

- **Ensure a greater national determination of the probability of risk factors based on current emission trends. Much of this national task could be addressed by enhanced roles for the UK Climate Change Risk Assessment and the National Adaptation Programme. This would require a major change to ensure there is a sufficiently useful spatial component and, for the first time, a clear linkage between the National Adaptation Programme and the local planning system.**
- **Support a simple plan-making methodology that combines nationally agreed approaches with an assessment of locally agreed circumstances.**

Recommendation 6

Reform the governance of the delivery of action on climate change

While the focus of the research reported here was the local plan system, Section 4 provides examples of the complex and sometimes contradictory governance of climate change issues at the local and national level. There is, for example, no national agency to support LPAs in meeting carbon reduction objectives. The Environment Agency's role is overwhelmingly to support action on flood risk, but it does not have a clear remit on other key aspects of climate adaptation. This position is illogical and unhelpful

in securing efficient and co-ordinated action at the local level. There are also questions about splitting the functions on establishing flood risk between the Environment Agency, which is the primary source of data, and lead local flood authorities. It is not always clear what added value these arrangements deliver.

At national level the Government should ensure that the Committee on Climate Change has a clear remit to support the work of local government on climate mitigation.

The governance of the delivery of local action on climate change needs wholesale review to determine how actions can be delivered more effectively. The outcomes of the review could consider:

- **expanding the remit of the Environment Agency to ensure that it has a holistic regulatory brief on climate adaptation;**
- **the provision of a new function for the Committee on Climate Change, to provide for policy and evidential support for carbon dioxide emissions reduction; and**
- **reviewing the added value of splitting flood risk responsibilities between lead local flood authorities and the Environment Agency.**

Recommendation 7

Review the scope of the English spatial planning system

The case studies examined in the research reported here highlighted a key factor that requires urgent review and that is within the scope of the English spatial planning system. The control of land use by restricting certain kinds of development and positively planning for others is at the core of the planning system.

However, these controls do not apply to a wide range of land uses that are vital in any overall response to climate change. This is not simply about a loss of control through permitted development, but relates to a more fundamental need to control all land uses, including agriculture, forestry and leisure. The lack of any planning control over most aspects of these issues severely restricts the ability of any branch of government to, for example, ensure that changes are not made in sensitive upland areas which can impact on urban areas lower in the water catchment. It also restricts the efficient promotion of measures that could build long-term resilience. While these land uses can be dealt with in other ways, there is a strong case for integrating the public policy responses in one system to ensure an efficient and co-ordinated effort. The Royal Commission on Environmental Pollution considered some of these issues in 2002 and recognised the need for a holistic approach to environmental planning.

The Government should consider how an integrated strategic planning scheme might be developed for all land uses in those areas of greatest risk from climate change. The Government should reconsider the recommendations in the Royal Commission on Environmental Pollution's 23rd report, *Environmental Planning* (2002), for a wider remit for spatial planning – and to this end should consider commissioning an update of that report in the light of the current climate science.

Recommendations for local government

Recommendation 8

Provide adequate resources to plan for climate change

The resources available for plan-making are varied but generally decreasing. In some rural and semi-rural areas, the forward planning team has fallen to below the resource levels required to deliver an effective plan. In major cities the problem is one of declining resources, increased workloads and low morale. A number of suggestions have been considered by the Government on how to fund the planning service through planning application fees. It is not within the remit of this report to recommend a single solution. Resources are one of the prime factors in the delays to plan-making, but they also affect the quality and scope of policy-making, delivery and enforcement.

National government and agencies should provide a stronger lead on the evidence base on climate change for local plans, including joint commissioning and planning, to help limited resources go further. Any general increase in grant aid for plan-making is currently unlikely. However, since action on climate change is a vital public interest outcome, local government should ensure that minimum service standards are maintained. National government should recognise the specific needs of those authorities experiencing or likely to experience the impacts

of climate change. National government should, along with relevant departments, focus resources on a programme of support services (including training and model policy development) to aid local plan development.

Recommendation 9
Encourage spatial planning over the long term

While the complex impacts of climate change can give rise to challenges in securing a useful evidence base, the timescale over which these impacts play out is also unique in public policy-making. Section 4 shows that local plans were not, on the whole, planning over the long term for such impacts. National policy provides for this approach, but **there should be much greater emphasis on the need to plan for 50- to 100-year time horizons, to avoid lock-in to problems from maladapted developments built now.** This implies greater sophistication in planning, not just for current risk factors but in a proportionate anticipation of future risks. The Environment Agency flood risk allowances for climate change provide the basis for this approach in some aspects of adaptation, but much clearer guidance should be provided to encourage actions now which will lay the foundation for future resilience.

Greater emphasis should be placed on the benefits of such an approach, which would, for example, identify areas of future (rather than just present) vulnerability. This might give rise to new locations for development or new types of construction methods, as well as more traditional resilience measures such as flood defences.

Local authorities must ensure that local plans consider climate change over the longer term, using as a minimum 25- and 50-year time horizons scenarios. In areas with higher exposure to climate impacts such as heat and coastal flooding, plans with 100-year time horizons will be necessary. National policy should be strengthened to require this approach.

Recommendation 10
Promote new forms of strategic co-operation

Section 5 illustrates the variable quality and scope of co-operation between LPAs on climate adaptation and mitigation. It also illustrated the benefits of co-operation in terms of sharing limited resources and expertise. The quality of this co-operation reflects wider concerns about the limitation of the duty to co-operate as a tool for effective strategic planning. Effective responses to climate change must also reflect functional geography – including a regional view of factors such as renewable energy resources, as well as water catchment and coastal geography.

Devolution deals and the establishment of combined authorities provide opportunities to develop strategic responses to climate change. Realising this potential would require a major reorientation of such deals to prioritise action on climate change. In turn, this would require agreement from the Department for Communities and Local Government, the Department for Business, Energy and Industrial Strategy, the Department for Environment, Food and Rural Affairs, and HM Treasury. Outside formal devolution deals, both the Environment Agency and the Department for Communities and Local Government should encourage the formation of informal groupings of local authorities that face similar climate challenges. Partnership working is already under way in places such as Cumbria but could be extended in scope and supported by clear guidance. Such partnerships have strong precedents in Europe and could prove highly valuable in sharing resources and experience, particularly in areas such as the east coast of England from the Humber to the Thames.

section 8
conclusion and key messages

The planning system provides for the regulation and visioning of the built environment in the public interest and has the potential to make a major contribution both to reducing carbon dioxide emissions and preparing for the impacts of climate change. This report reveals that the local plan system is failing to fulfil this potential.

The research reported here found that local plans in England were not dealing with carbon dioxide emissions reduction effectively, nor were they consistently delivering the adaptation actions necessary to secure the long-term social and economic resilience of local communities. There was a wide variety of practice, with some examples of positive responses, but, taken as whole, it was clear that climate change had been de-prioritised as a policy objective in the spatial planning system. The large-scale failure to implement the clear requirements of national planning policy was a striking finding, as was the reduced capacity of the planning service and the reduced capacity of the Environment Agency to support the long-term plan-making process.

There are complex reasons for this situation, ranging from perceived contradictions in national policy to political signals from Ministers about the overwhelming priory to be given to the allocation of housing land. The failure to use the planning system's capability to mitigate and adapt to climate change is inefficient and likely to lead to long-term avoidable costs to the economy. Conversely, there is a real opportunity to harness the system as a key local part of the nation's response to climate change. Fulfilling this potential requires, above all else, a signal from national government that climate change is a primary political, legal and policy priority for the local plan process.

The recommendations in this report provide a range of solutions to these problems, but nothing less than a major refocusing of the English planning system on the immediate and future risks of climate change is likely to drive the scale of the change which is necessary. **The system remains critically unprepared to deliver both carbon dioxide emissions reductions and the kind of resilience measures necessary to deal with the scale of the impacts implied by the scientific evidence on climate change.**

annex 1
analytical framework for the research

In this research, it was important for the 'test' of whether LPAs' plan policy fully engaged with the climate change challenge to be fair and proportionate – reflecting national plan-making requirements, as well as seeking to test how these requirements have been applied to reflect local circumstances. While the Government no longer produces detailed guidance on plan-making, the process can be distilled into seven stages, each with key compliance requirements. These seven stages, detailed below, were used to guide the document analysis and case study research outlined in Section 4:

1 ***Evidence-gathering:*** Climate change does not feature explicitly in the survey requirements for local plans set out in legislation. Overall, guidance contained in the NPPF and NPPG sets a requirement for 'proportionate evidence' to support the plan-making stage. Evidence-gathering forms a key part of the strategic environmental assessment (SEA) and sustainability appraisal (SA) process and is framed by supporting metrics and data on adaptation from the Environment Agency. Section 19 of the Planning and Compulsory Purchase Act 2004 and the NPPF and NPPG provide interlocking policy requiring carbon assessments of plans in line with the Climate Change Act 2008.

2 ***Stakeholder engagement:*** The right to be heard, along with the duty to co-operate, provide the legal context for stakeholder and citizen engagement. The NPPF stresses the need for community engagement upfront and for local authorities to co-operate over, for example, strategic flood risk issues.

3 ***Policy development:*** There is little general guidance on how plan policy should be developed to most effectively reflect the evidence. There are, however, clear gateway tests in guidance, such as the viability test, which allows developers to challenge the inclusion of policy that places an undue burden on their profits. There is specific guidance on policy responses on flood risk – for example the sequential approach and the exemptions test in site identification.

4 ***Policy testing through Planning Inspectorate examination:*** The soundness test applied by Planning Inspectorate during the examination of local plans is the critical route for testing compliance with national law and policy, as well as the general effectiveness and evidential basis of plan policy. The Inspectorate is subject to advice and guidance issued by the Department for Communities and Local Government which has, in recent years, focused on five-year housing land supply. This stage highlights how national policy is being applied in local plans. Inspectors' reports formed a key priority during the document analysis stage of this research.

5 ***Final policy outcomes:*** National policy sets some demanding general requirements on climate change, not least 'radical reductions' in carbon dioxide emissions. How to achieve this in plan policy is less precisely expressed than, for example, housing supply, where the relationship between evidence of need and demand and the provision of sites is highly directive. However, the overall objectives of

national policy on emissions reduction are clear. Judging the final policy content of adopted local plans is challenging, and relates to the overall prioritisation of climate change, as well as the precise language used in policy requirements. Unpublished research by the TCPA for the former Department for Energy and Climate Change (carried out in 2014) illustrated how apparently extensive policy on community energy could in fact be relatively ineffective at actually shaping development – which depends on a clear sense of how policy will be delivered, and on the directive nature of the language used in local plans. For example, there are clear distinctions between whether LPAs use clear targets which must be complied with, or simply encourage a particular outcome.

6 ***Delivery and outcomes:*** Plans are expected to set out policy which is clearly deliverable in the sense of being implemented in a timely way. The presence of a delivery strategy for climate policy, such as series of targets, is a key test of the effectiveness of local plan policy. The final and most significant question is the degree to which development conforms to the plan strategy. The discretionary planning system allows for development to be approved which is not accordance with plan policy, but such development must conform to the planning principles contained in the NPPF. Development may also be approved at appeal against plan policy, and the extent of these departures can increase where a plan is judged to be out of date.

7 ***Monitoring and review:*** LPAs should prepare annual monitoring reports on the implementation of plan policy. These reports are no longer submitted to central government so there is no national picture of implementation issues. Examination of LPA monitoring systems should illustrate the degree to which LPAs are considering the carbon profile of plan policy.

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Planning for the Climate Challenge? Understanding the Performance of English Local Plans

Town and Country Planning Association
17 Carlton House Terrace
London SW1Y 5AS
020 7930 8903
tcpa@tcpa.org.uk
www.tcpa.org.uk