



Department
for Environment
Food & Rural Affairs

www.gov.uk/defra

Evaluation of the arrangements for managing local flood risk in England

Final report

Published January 2017



Llywodraeth Cymru
Welsh Government



Joint Flood and Coastal Erosion Risk Management
Research and Development Programme

**Evaluation of the arrangements for managing
local flood risk in England**

Final report FD2680

Published: January 2017

Funded by the joint Flood and Coastal Erosion Risk Management Research and Development Programme (FCERM R&D). The joint FCERM R&D programme comprises Defra, Environment Agency, Natural Resources Wales and Welsh Government. The programme conducts, manages and promotes flood and coastal erosion risk management research and development.

This is a report of research carried out by CAG Consultants, in conjunction with Databuild and Royal HaskoningDHV, on behalf of the Department for Environment, Food and Rural Affairs.

Research contractor: CAG Consultants, in conjunction with Databuild and Royal HaskoningDHV

Authors: Tim Maiden, Mary Anderson and Bill Kirkup (CAG Consultants), John Fawcett (Databuild), Nicola Wilson and Fola Ogunyoye (Royal HaskoningDHV)

Publishing organisation

Department for Environment, Food and Rural Affairs
Flood Risk Management Division,
Nobel House,
17 Smith Square
London SW1P 3JR

© Crown copyright (Defra); 2017

Copyright in the typographical arrangement and design rests with the Crown. This publication (excluding the logo) may be reproduced free of charge in any format or medium provided that it is reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown copyright with the title and source of the publication specified. The views expressed in this document are not necessarily those of Defra. Its officers, servants or agents accept no liability whatsoever for any loss or damage arising from the interpretation or use of the information, or reliance on views contained herein.

Executive summary

Context

It was estimated that during the summer 2007 floods, two-thirds of the 57,000 properties affected were flooded from local sources (surface water flooding, groundwater flooding and flooding from ordinary watercourses). At the time there were no mechanisms in place to enable an integrated approach to planning and managing the impacts of flooding from such sources. The Flood and Water Management Act 2010 (FWMA or 'the Act') contained provisions to implement recommendations from Sir Michael Pitt's review (Pitt, 2008) to improve the management of local flood risk, helping to better protect people from the effects of flooding.

The FWMA made unitary authorities and county councils (i.e. upper-tier authorities) the Lead Local Flood Authority (LLFA) for their area. Their role involves:

- Developing a local flood risk management strategy;
- Co-operating with other risk management authorities;
- Investigating flooding in its area where appropriate;
- Maintaining a register and record of structures that are significant for flood risk;
- Consenting¹ on ordinary watercourses; and
- Making byelaws for managing flood risk and carrying out works to manage flood risk from surface water and groundwater.

This evaluation was commissioned by Government to provide evidence to inform a review they would be undertaking of parts of the FWMA in 2015. The evidence from this evaluation will help inform any recommendations made as a result of this review.

Objectives of the evaluation

The objectives of the evaluation were to:

1. Assess the impact of the changes introduced through the FWMA in relation to the management of local flood risk;
2. Evaluate the effectiveness and efficiency of LLFAs as a whole;
3. Identify good practice in the way in which LLFAs have delivered their responsibilities, including identifying factors which support and those which act as barriers to improved local flood risk management; and
4. Identify the scope for simplification or efficiencies in the definition or delivery of the relevant statutory responsibilities.

¹ those wishing to carry out certain works on ordinary watercourses must seek the prior approval from the relevant LLFA or, if within an internal drainage district, the IDB.

Methodology

The evaluation had three principal research phases:

- Phase one, inception and scoping, took place between July and September 2014. During this phase, contextual research was conducted and the theoretical framework and methodology for the evaluation were developed;
- Phase two, overview research, took place between September 2014 and January 2015. During this phase, outputs from LLFAs were reviewed and online and telephone surveys of LLFA representatives were conducted; and
- Phase three, in-depth qualitative research, took place between January and April 2015. During this phase, in-depth case studies of 30 LLFAs were carried out.

Delivery of statutory responsibilities

The evaluation explored the extent and effectiveness of the delivery of the statutory responsibilities placed on LLFAs by the FWMA. The findings are summarised below.

Local flood risk management strategies

Prior to 2010 there was limited understanding of the extent and nature of flood risk from local sources. The approach to managing risks from such sources was inconsistent, with only a minority of councils proactively managing these risks. The evaluation found that:

- The FWMA requirement to produce local flood risk management strategies has led to a more comprehensive understanding of local flood risk and a more proactive and coordinated management of this risk;
- There was anecdotal evidence that actions implemented as a result of local flood risk management strategies being developed have reduced flood risk;
- There were widespread perceived benefits in terms of improved collaboration between risk management authorities and improved prioritisation of action to address local flood risk;
- A significant percentage of LLFAs had not yet published their strategy; and
- Whilst most strategies are consistent with statutory requirements, a considerable number of them were weak in terms of identifying the costs and benefits of the measures proposed, which may undermine LLFAs' ability to deliver their strategy commitments in future.

Flood investigations

Prior to 2010, investigation of flooding was patchy and inconsistent, particularly where surface water was the cause or where multiple sources were responsible. The results of investigations were rarely made public or shared between risk management authorities. The evaluation found that:

- Overall, the FWMA appears to have led to a step-change in the investigation of flooding incidents;
- As a result of the FWMA, most floods regarded as significant by LLFAs are now investigated and followed up;
- This is reported to have helped build a greater understanding of risks, has, in many cases, enabled responses to be developed and provided reassurance to affected communities;
- There are variations in the criteria and thresholds used for triggering investigations which, coupled with the variations in the incidence of flooding incidents, has led to huge variations in the numbers of investigations being carried out by LLFAs; and
- The level of detail being applied to section 19 investigations was also reported to be inconsistent.

Registers of flood risk features (or ‘asset registers’)

Before the FWMA, there was no consistency in the recording of data on local flood risk assets. Collation of asset data by local authorities for the purposes of flood risk assessment was unusual. This was particularly true of data on non local authority-owned assets and data on the condition of assets. The evaluation found that:

- Most stakeholders interviewed believed that asset registers were, or in future could be, useful and effective tools in the management of local flood risk, e.g., through highlighting assets which are problematic or in need of repair, highlighting the need for maintenance work, facilitating flood investigation work, allowing more effective input to planning applications and pre-application planning advice and helping in the response to flooding incidents or severe weather warnings;
- Some LLFAs have made very significant progress in setting up and populating their asset register, and are already benefiting from having done so;
- Some LLFAs have not developed an asset register at all, others have very limited registers and most asset registers require considerable further work for them to become of use in the kinds of ways described above; and
- Little use is being made of asset registers by other risk management authorities.

Consenting on ordinary watercourses

Prior to the FWMA, there was no role for local authorities in consenting on the ordinary watercourse network. The evaluation found that:

- In some cases, LLFAs or the authorities to whom they have delegated powers, use the consenting function to proactively manage activities which might affect flood risk from ordinary watercourses and view this role as extremely important;
- In such cases, giving LLFAs responsibility for consenting on ordinary watercourses outside of internal drainage districts, appears to have generated significant benefits. It has allowed their local knowledge to be utilised and provided the opportunity, at least in unitary authorities, for greater integration with the planning system;

- There is a variation in approaches, levels of consenting activity and levels of resources committed to the consenting role, including some LLFAs who have effectively not taken up this role.

Byelaws and works powers

The evaluation found that:

- The powers to create byelaws and the powers to carry out works (except in the case of flood risk management schemes) appear to have been little used to date by LLFAs but the value in having these powers was recognised by many stakeholders;
- More than half of LLFAs had considered introducing byelaws and a small number were actively pursuing this;
- There was a degree of misunderstanding about the process to make and confirm byelaws;
- There was a reluctance to make use of works powers due to the perceived risks involved. However, these powers had been referred to in negotiations with landowners about getting necessary works done and were reported to be an effective negotiating tool.

Local flood risk management in practice

The evaluation also explored a number of the key elements of the practice of local flood risk management. The findings are summarised below.

Partnership working

Partnership working between local authorities and the EA was already well established prior to the FWMA, but partnership working with the water companies was limited and inconsistent. The evaluation found that:

- Generally speaking, the FWMA appears to have led to significant progression in the levels of partnership working between LLFAs, the EA and water companies, as well as IDBs and lower-tier councils where relevant;
- Collaboration between risk management authorities in the preparation of local flood risk management strategies has been a catalyst for wider engagement and joint working;
- Although relations remain problematic in some areas, in some cases, and particularly in more recent years, the evidence from the case studies suggests that there has been an increase in the level of engagement between water companies and other risk management authorities in most LLFA areas;
- Challenges to partnership working remain. Most commonly, these arise from tensions between partners over the responsibility for assets or flooding incidents; and

- Anecdotal evidence suggests that improved partnership working has led to more flood risk management schemes being delivered, including in situations where individual organisations could not have delivered an effective solution, and schemes being more holistic in their approach, delivering a wider range of benefits.

Data and information sharing

Prior to the FWMA, sharing and collation of data and information for the purposes of local flood risk management was unusual and unlikely to occur on a voluntary basis. The evaluation found that:

- The FWMA has led to an increase in data and information sharing both within LLFAs and between risk management authorities;
- Increased data sharing is reported to have led to greater accuracy and effectiveness in the management of local flood risk and it also appears to have played a critical role in delivering the requirements of the Act, particularly local flood risk management strategies, asset registers and section 19 investigations; and
- Commercial sensitivities continue to restrict the sharing of water company data in some areas, but in others the use of data sharing agreements or protocols has facilitated such data being freely shared.

Leadership

One of the intended outcomes of the Act was that the LLFA would take on a leadership role in managing local flood risk and that this role would be clear, understood and demonstrated. The evaluation found that:

- Most case study stakeholders felt that the LLFA in their area was demonstrating leadership in the management of local flood risks;
- Whilst the LLFA may be leading, the contribution of other organisations remained crucial in some areas. For example, the EA were said to be providing a degree of leadership in some cases;
- LLFA leadership is seen to be expressed in a number of ways, including coordination, engaging others, developing a vision for flood risk management and developing projects.

Operational arrangements

Prior to the FWMA, the evidence suggests that councils were struggling to recruit and retain staff with flood risk management expertise. Less than 30% had staff resource committed full time to local flood risk management. The evaluation found that:

- The FWMA responsibilities and associated new burdens funding led to a significant increase in the level of staff resource committed to local flood risk management;
- However, this varies enormously between LLFAs, e.g., from 0.4 FTE in one case study to 10 FTE in another, with an average of 3.5 FTE;

- In spite of the increased resource available, concerns about funding and in-house capacity remain the most significant concerns among LLFA staff in terms of their ability to manage local flood risk in the coming years. These concerns are shared by many external stakeholders;
- Concerns also remain about the levels of technical expertise available to LLFAs, with recruitment of specialist staff remaining challenging;
- There has been ongoing improvement in the capability of LLFA staff since 2010 and the capacity building programme is reported by those staff to have played a very important role in this. However, the scale of the programme may be insufficient to address the skills shortages affecting LLFAs.

Communication and engagement with the public

Prior to the FWMA, the evidence suggests that, amongst the public, there was a low level of understanding of flood risk, what was being done about it and by whom, and what role they could play in helping to address the risk. The evaluation found that:

- Most LLFAs have consulted the public on their local flood risk management strategy and more than half have undertaken other communications or consultation activity;
- These consultation efforts appear to have gained limited traction and, as a result, the Act is unlikely to have made a significant difference to the level of public understanding of flood risk and what they can do about it, except in communities which have been directly affected by flooding incidents where more intensive engagement has taken place.

Funding and costs

Funding

The FWMA resulted in a significant injection of funding for local flood risk management between 2011/12 and 2014/15. This funding was not ring-fenced but approximately 60% of LLFAs (based on self-reported figures) spent all of the money on local flood risk management activities. The evaluation found that:

- The FWMA has levered in additional funding for local flood risk management;
- The statutory responsibilities associated with the FWMA have also, to some degree, helped to shield local flood risk management activity from council budget cuts;
- The increased cooperation and collaboration between risk management authorities is perceived to be leading to more efficiency and effectiveness in the spending of the available funding;
- However, many LLFAs reported finding the funding situation challenging, particularly because of the level of bureaucracy associated with bids for FDGiA and the challenges reported in securing revenue funding for feasibility studies to get schemes through the FDGiA process.

Costs

The limited costs data available suggests that:

- Strategies may have been significantly less expensive to develop than Defra anticipated. The Defra impact assessment assumed that there would be significant input from specialist contractors and this has not always been the case;
- Section 19 investigations have proven more costly than anticipated;
- The costs of developing asset registers varies significantly, depending on the context (nature, extent and complexity of the drainage network), the level of existing data held by the LLFA and the scope and level of detail adopted by the LLFA; and
- The costs of performing the consenting role significantly outstrip the fees which LLFAs can charge to applicants.

Conclusions

Impact of the changes introduced through the FWMA

The evaluation found that:

- There was a general consensus amongst stakeholders that the FWMA had led to better strategic planning of flood risk management;
- The wider evidence generally supports this view. The FWMA has led to a strengthening of the structures, systems and processes for managing local flood risk;
- Based on the views of stakeholders, the principal weakness of the FWMA relates to public perceptions and the development of public resilience to flood risk. There is little evidence that the FWMA has had a material impact on the level of public understanding of flood risk or built the resilience of communities to flood risk, although it should be noted that no research was carried out with the public; and
- There appears to have been considerable variation in the impact of the FWMA depending on different LLFA characteristics. The authority type (two-tier or unitary) and whether the LLFA had drainage staff in place prior to the FWMA, appear to have been key factors in determining the relative impact of the Act.

Good practice, enabling factors and barriers

Examples of good practice are highlighted throughout sections four to six of the report.

Factors which support improved local flood risk management

Adequate resourcing. Where LLFAs have been well-resourced, this appears to have been important in relation to delivering all of the statutory requirements of the Act and in the wider practice of local flood risk management.

Partnership working. Effective partnership working both between different LLFAs and between LLFAs and other risk management authorities, has underpinned much of the successful implementation of the FWMA.

Factors which act as barriers to improved local flood risk management

- **Resource constraints.** Despite the staff resource increasing, staff and funding constraints were the most commonly cited challenge to LLFAs delivering and playing a leadership role in local flood risk management. Concerns about resourcing are shared by LLFAs and many external stakeholders. Limitations in the resource available have hindered delivery of the statutory responsibilities introduced by the Act and limitations in revenue funding mean that accessing funding for capital schemes was felt to be challenging by many LLFAs².
- **Differing objectives, priorities and regulatory environments.** Where they exist, challenges to partnership working have resulted from partners' differing objectives, priorities and regulatory environments. Commercial and legal sensitivities have restricted the water companies' ability to share data in some cases. These differences have also made it challenging to resolve issues regarding the responsibility for some assets and flooding incidents.
- **Public engagement and public expectations.** Some stakeholders believe that the extent to which flooding incidents are being investigated is being hindered by under-reporting of flooding incidents by members of the public, who are often concerned about the impact on property prices or insurance. LLFAs and partner agencies also report finding it challenging to manage public expectations when not all potential solutions can be delivered.
- **LLFA skills and knowledge.** Despite the apparent ongoing improvement in the capability of LLFA staff, concerns remain among some stakeholders about the levels of technical expertise available to LLFAs, with recruitment of specialist staff remaining challenging and some experienced staff being made redundant or retiring, particularly within lower-tier councils

Opportunities for efficiencies and streamlining

There are a number of aspects of local flood risk management where there would appear to be potential to achieve simplification or efficiencies. These include:

- **Accessing capital funding.** Many stakeholders suggested that the current system for accessing FDGiA was ill-suited to local flood risk management schemes and was overly bureaucratic, particularly for smaller schemes. There may be opportunities to streamline this process.

² Capital grant is available to undertake an initial feasibility study where the EA MTP assessment is that a capital scheme is likely. It may be that a lack of awareness of this is behind some of the comments about the challenges in securing funding for feasibility work.

- **Partnership working.** Efforts to improve partnership working are likely to deliver significant benefits. Where they do not exist already, LLFAs could be encouraged to establish formal partnership structures. Wider benefits and greater impact could also be achieved through enabling LLFAs to engage in partnership work beyond ‘the usual suspects’, e.g. working with Local Enterprise Partnerships (LEPs) and Natural England.
- **Joint working by LLFAs.** Many LLFAs have benefited from sharing learning and good practice on a regional or sub-regional basis. A smaller number have developed joint working arrangements. Enabling further opportunities for both could deliver efficiencies.
- **Data sharing.** Data sharing protocols between risk management authorities have been established in some areas. Consideration could be given to facilitation of further such protocols at a regional or national level.
- **Strategies and plans.** Some stakeholders suggested that the number of plans and other documents relating to flood risk brought about confusion and that there was overlap between them. There may be opportunities to rationalise the number of plans and strategies which are prepared.
- **Community resilience.** Building community resilience has been a particular challenge for LLFAs. It is apparent that progress in this area requires intensive community development work. Improved partnership working on this, e.g. with emergency planners, the LRF or wider council community development teams, may offer opportunities for increasing the impact of LLFAs in this area.
- **Delegation.** A minority of LLFAs have delegated the consenting role to IDBs or lower-tier councils. In these cases it has generally been found to have been a cost-effective way of delivering this aspect of the FWMA and therefore could be encouraged elsewhere.

At the end of the report, a number of other issues are listed which have been highlighted by the findings from this evaluation as meriting further consideration as part of the future development of the arrangements for local flood risk management in England.

Contents

1. Introduction	2
1.1 Context	2
1.2 Evaluation objectives	3
1.3 Research team	3
1.4 Report structure	4
2. Methodology	5
2.1 Approach	5
2.2 Method	6
3. Context	17
3.1 Historic legislative context	17
3.2 Policy development	18
3.3 Policy implementation	19
3.4 New legislative context	21
4. Implementation of statutory requirements	23
4.1 Local flood risk management strategies	23
4.2 Flood investigations (section 19)	41
4.3 Register of flood risk features (section 21)	49
4.4 Consenting on ordinary watercourses (schedule 2)	56
4.5 Byelaws and works powers	63
5. Local flood risk management in practice	68
5.1 Partnership working	68
5.2 Data and information sharing	82
5.3 Continuation of pre-Act powers and responsibilities	87
5.4 Leadership	88

5.5	Operational arrangements	89
5.6	Communication and engagement with the public	108
6.	Funding and costs	112
6.1	Funding for local flood risk management	112
6.2	Costs	120
7.	Impact of the FWMA.....	126
7.1	Changes from baseline	126
7.2	Activities, outputs and outcomes	139
7.3	Theory of change.....	146
8.	Conclusions.....	154
8.1	Impact of the changes introduced through the FWMA in relation to the management of local flood risk.....	154
8.2	The effectiveness and efficiency of LLFAs as a whole	156
8.3	Good practice in the way in which LLFAs have delivered their responsibilities, including identifying factors which support and those which act as barriers to improved local flood risk management.....	158
8.4	The scope for simplification or efficiencies in the definition or delivery of the relevant statutory responsibilities	160
	Appendix A: Documents included in document review	164
	Appendix B: Typology	166
	Appendix C: Logic model	169
	Appendix D: Evaluation questions	171
	Appendix E: Statutory requirements of the FWMA	182
	Appendix F: Assessment questions and indicators for the statutory requirements for the local flood risk management strategy	185
	Appendix G: Capabilities of LLFA staff	187
	Appendix H: LLFA cost data	190
	References	192

Acknowledgements

Research team

CAG Consultants: Tim Maiden, Mary Anderson, Bill Kirkup, Emma Jones, Denny Gray, Gerard Couper, Rachel Crozier.

Royal HaskoningDHV: Nicola Wilson, Fola Ogunyoye.

Databuild: John Fawcett, Michelle McGuire.

Steering group

Defra: Amanda Scarfe, Mary Stevens, Stacy Sharman, Nick Haigh, Ruth Thirkettle, Roger Orpin.

Others: Jo Allchurch (Local Government Association), Tim Smith (Severn Trent Water), Josie Bateman (Northamptonshire County Council and ADEPT), Steve Wragg (York City Council), Tim Farr (Trent Valley Internal Drainage Board and the Association of Drainage Authorities), Steve Willis (Lincolnshire County Council and ADEPT), Tim Godson (DCLG), Wendy Brooks (Environment Agency), Sadia Moeed (Environment Agency).

Contributors

We are extremely grateful for the contributions made by the following:

- Key stakeholders interviewed as part of the scoping stage of the evaluation. This included representatives from: the North West Regional Flood and Coastal Committee, National Flood Forum, Association of Drainage Authorities, Highways Agency, Local Government Association (LGA), Environment Agency (EA), Thames Water, York City Council, Lincolnshire County Council and the Local Government Information Unit (LGiU).
- Over 100 council officers who completed the telephone and/or online surveys conducted as part of this evaluation.
- 125 stakeholders in 30 case study locations. These included representatives from Lead Local Flood Authorities (LLFAs), other council officers, council members, water companies, Internal Drainage Boards (IDBs), Local Resilience Forums (LRFs) and the EA.

1. Introduction

1.1 Context

It was estimated that during the summer 2007 floods, two-thirds of the 57,000 properties affected were flooded from local sources (surface water flooding, groundwater flooding and flooding from ordinary watercourses). At the time there were no mechanisms in place to enable an integrated approach to planning and managing the impacts of flooding from such sources. The Flood and Water Management Act 2010 (FWMA or 'the Act') contained provisions to implement recommendations from Sir Michael Pitt's review (Pitt, 2008) to improve the management of local flood risk, helping to better protect people from the effects of flooding.

At the time of the summer 2007 floods, well-established arrangements already existed for the EA to manage flood risk from rivers and the sea, but there were no mechanisms in place to enable an integrated approach to planning and managing the impact of *local sources* of flood risk. It was recognised in the Pitt Review that no single organisation was required to carry out a comprehensive assessment of, or manage, local flood risk, nor was there any obligation on bodies to co-operate and share information to make an effective assessment of local flood risk possible. As a result, those areas at greatest risk from surface water flooding may have been overlooked.

More recent flooding events in 2012 (which included surface water) and 2013/14 (which included groundwater flooding) have once again highlighted the risk of flooding from local sources and the need for effective local flood risk management. Three million properties in England are estimated to be at some risk from surface water flooding.

To ensure there is an organisation responsible for assessing local flood risk and improving surface water management, the FWMA made unitary authorities and county councils (i.e. upper-tier authorities) the Lead Local Flood Authority (LLFA) for their area, with the role of managing the risk of all local causes of floods. An LLFA's role must involve:

- Working in partnership with other relevant organisations, (including lower-tier councils, water and sewerage companies, the EA, highways authorities and IDBs) to effectively manage, and where possible mitigate, the impacts of local floods through the development of a local flood risk management strategy;
- Co-operating with other risk management authorities;
- Investigating flooding in its area where appropriate; and
- Maintaining a register and record of structures that are significant for flood risk.

The Act also puts in place arrangements to ensure compliance with these requirements. These provisions of the FWMA were implemented through secondary legislation in 2010 and 2011.

This evaluation was commissioned by Government to provide evidence to inform a review it would be undertaking of parts of the FWMA in 2015. This will be a post-implementation review, to assess whether Sir Michael Pitt's ambitions for better local flood risk management are being realised. The evidence from this evaluation will help inform any recommendations made as a result of this review.

The scope of the evaluation also included Schedule 2 amendments to the Land Drainage Act 1991 where powers relate to LLFAs. These are explained further in section 3.4. Schedule 3 proposals relating to SuDS were not within the scope of the evaluation, although they were referred to by stakeholders during the course of the research.

1.2 Evaluation objectives

The aim of the project was to evaluate the operation of the arrangements for managing local flood risk put in place by the FWMA. The roles and responsibilities of LLFAs were a particular focus. The evaluation focused on the 152 LLFAs in England.

The objectives of the evaluation were to:

1. Assess the impact of the changes introduced through the FWMA in relation to the management of local flood risk;
2. Evaluate the effectiveness and efficiency of LLFAs as a whole;
3. Identify good practice in the way in which LLFAs have delivered their responsibilities, including identifying factors which support and those which act as barriers to improved local flood risk management; and
4. Identify the scope for simplification or efficiencies in the definition or delivery of the relevant statutory responsibilities, for example through improved partnership-working.

The main intended audience for the evaluation was the Flood Risk Management team in Defra. Other key stakeholders include the EA, Department for Communities and Local Government, the Welsh Government, the LGA and relevant risk management authorities.

1.3 Research team

The evaluation was delivered by a consortium led by CAG Consultants, and including Royal HaskoningDHV and Databuild.

1.4 Report structure

Section two provides an explanation of the methodology used to conduct the evaluation. Section three sets the context for the evaluation by describing the development of policy and legislation for the management of local flood risk.

The main findings from the evaluation are then presented in sections four to seven. Section four focuses on the implementation by LLFAs of the statutory requirements of the FWMA. Section five explores wider issues in relation to the practice of local flood risk management, such as partnership working and sharing of data and information. Section six presents the findings on the costs and funding of local flood risk management. Section seven then provides an overview of the evaluation's findings on the impact of the FWMA. Section eight draws together the conclusions of the evaluation in relation to the four objectives described in section 1.2.

Throughout sections four to seven, text boxes are used to highlight examples of good practice in local flood risk management which have been identified during the evaluation. It should be noted that the good practice outlined is based on 'self-reported' evidence from the LLFAs included as case studies and the efficacy of the good practice has not been independently verified. They are highlighted because they are considered to be notable, e.g., because they appear to be innovative in some way.

Quotes are used throughout sections four to six. These are illustrative of the evidence referred to in the main text.

All stakeholders were interviewed with an assurance of anonymity. Therefore, no individuals are named in this report and the locations of the case studies are not stated. Where quotes are used, these are labelled with the case study number (except in cases where there is a risk that this would compromise anonymity) and the stakeholder type - LLFA lead, other council officer, councillor, lower-tier council, water company, EA or Local Resilience Forum (LRF).

2. Methodology

2.1 Approach

In order to achieve the objectives set, the evaluation included both process and impact evaluation elements. Process evaluations focus on how policies were delivered, whilst impact evaluations focus on what difference policies made. In terms of process, the evaluation has explored the progress that has been achieved to date in the management of local flood risk, including specific outputs such as local flood risk management strategies, as well as working practices and behaviours, success factors and barriers.

Evaluating impact was hindered by the absence of a counterfactual. In England and Wales, the policy was introduced in all areas at the same time and the policy context in Scotland is too different to be used as a meaningful comparator. Scotland is separated into 14 Local Plan Districts based on river catchments rather than administrative boundaries and SEPA (Scottish Environmental Protection Agency) is responsible for producing a Flood Risk Management Strategy for each Local Plan District.

In the absence of a counterfactual, there are three principal ways in which we sought to evaluate impact:

1. Through providing an overall analysis of the current position against our best estimate of the baseline position in 2010. A document review carried out as part of the scoping stage of the evaluation included an analysis of the baseline position in terms of the management of local flood risk prior to the introduction of the FWMA. This was supplemented by findings from the stakeholder interviews conducted during the development of the case studies. Changes from the baseline are discussed throughout sections four to six, and section 7.1 presents an overview of the 'journey travelled' from the baseline position.
2. Through seeking to understand the 'journey travelled' by individual LLFAs. Instead of just comparing the current positions of different LLFAs, we have sought to understand how different LLFAs have moved from their starting positions prior to the introduction of the Act and the causal factors behind their different rates of progress. A typology of LLFAs was developed to facilitate this analysis, allowing comparisons to be made, for example, between unitary and two-tier authorities, and between areas which have experienced significant flooding incidents and those which haven't.
3. Through developing a detailed logic model³ and theory of change⁴ for the FWMA. These have been used to assess the extent to which the intended activities,

³ Logic models describe the relationship between an intervention's inputs, activities, outputs, outcomes, and impacts.

outputs, short-term outcomes and long-term outcomes expected from the FWMA have transpired in practice. Section 7.2 provides an overview of our findings. The theory of change has also been utilised to explore our understanding of the causal links between the inputs, activities, outputs and outcomes and thereby gain a greater understanding of the extent to which any improvements in the management of local flood risk can be attributed to the FWMA and associated inputs. This is discussed in section 7.2.

2.2 Method

2.2.1 Research phases

The evaluation had three principal research phases, as shown in Figure 2.1 below.

- Phase one, inception and scoping, took place between July and September 2014.
- Phase two, overview research, took place between September 2014 and January 2015.
- Phase three, in-depth qualitative research, took place between January and April 2015.

Each of the individual methods is described in the following section.

⁴ Theory of Change evaluation is a systematic and cumulative study of the links between activities, outcomes, and context of a policy intervention.

Figure 2.1: Evaluation methodology

PHASES	METHODS	KEY OUTPUTS	CONTRIBUTION TO OBJECTIVES
1. Inception & scoping	<ul style="list-style-type: none"> • Desk review of key documents • Key stakeholder interviews 	<ul style="list-style-type: none"> • Logic model • Theory of change • Typology of LLFAs • Evaluation framework • Policy context • Draft research instruments 	Establish baseline & methodology for assessing impact (objective 1)
2. Overview research	<ul style="list-style-type: none"> • Review of LLFA outputs • Telephone survey of LLFAs • Online survey of LLFAs 	<ul style="list-style-type: none"> • Interim report on outputs review • Topline LLFA survey findings • Dataset of LLFA survey results 	Provide an overview of impact of the changes introduced through FWMA (objective 1) & effectiveness & efficiency of LLFAs as a whole (objective 2)
3. In-depth qualitative research	<ul style="list-style-type: none"> • 30 case studies 	<ul style="list-style-type: none"> • Interim report on emerging findings 	Provide greater depth to exploration of all objectives, including exploring good practice & barriers (objective 3) & scope for simplification & efficiencies (objective 4)

2.2.2 Methods

Desk review of key documents

The purpose of the document review was to:

- Establish the policy contexts within which LLFAs have operated pre-2010 and post-2010;
- Develop a baseline of the situation before the implementation of the FWMA;
- Understand the assumptions made in the Defra impact assessments against which new data from the evaluation could be compared;
- Assess data on LLFA progress against their statutory responsibilities from national reporting; and

- Provide a summary of review criteria to inform the evaluation framework.

The documents reviewed included a number of reports and commissioned studies from the EA and Defra. This includes the Defra impact assessments, monitoring reports and quantitative data. A full list of the documents included is provided in appendix A.

Key stakeholder interviews

In-depth semi-structured interviews were conducted with key stakeholders in order to inform our understanding of the pre-2010 baseline position and to inform the evaluation framework, including identifying key issues for further exploration during the evaluation. Interviews were conducted with representatives from the North West Regional Flood and Coastal Committee, National Flood Forum, Association of Drainage Authorities, Highways Agency, LGA, EA, Thames Water, York City Council, Lincolnshire County Council and LGiU.

Theory of change workshop

A workshop involving the members of the project steering group⁵ was held in order to inform our understanding of the pre-2010 baseline, to refine Defra's logic model for the FWMA and to begin development of a theory of change for the FWMA. The workshop explored the following questions:

- What were the problems with local flood risk management before FWMA? (to help inform our understanding of baseline and to inform the analysis of barriers in the theory of change);
- What did FWMA set out to achieve? (to refine the logic model);
- What assumptions was the FWMA based on? (to inform the logic model and theory of change);
- How have local authorities differed in their starting points and responses to FWMA? (to inform the typology of LLFAs);
- What are the stepping stones towards achievement of FWMA objectives? (to inform the development of intermediate outcomes in the theory of change);
- How can progress towards local flood risk management be measured? (to inform the measurement of intermediate outcomes in the theory of change); and
- What were the other influences on local flood risk management? (to identify external factors for inclusion in the theory of change).

⁵ Members of the steering group are listed in the Acknowledgements on page 7.

Review of LLFA outputs

A review was undertaken by Royal HaskoningDHV of the following LLFA outputs:

- Local flood risk management strategies;
- Section 19 flood investigation reports and flood investigation policies;
- Register of flood risk features (commonly referred to as an 'asset register'); and
- Availability of guidance and application for consenting on ordinary watercourses.

The review was high-level, with the aim of generating a national overview of the number and characteristics of the outputs being produced by LLFAs.

A set of indicators was developed, against which the outputs were assessed. The indicators used were based on the statutory requirements set out in the FWMA, as well as a number of good practice criteria.

The review was undertaken in two phases: an initial review between October and December 2014 to inform the subsequent phases in the evaluation project; and a final review between March and April 2015 to capture further strategies, investigation reports and 'asset registers' published in the intervening period. The second data collection phase ran to 13th April 2015. Any outputs available after this date have not been included.

Outputs were only included in the review if they had been published (either in draft or final form) and were publicly available. However, due to the trend for 'asset registers' to be made 'available upon request', in order to access these registers an email request was sent to all LLFAs identified as having 'published' registers that were not found to be available on the respective council's websites. Additionally, a request was sent to two LLFAs who had published only the summary version of their local flood risk management strategy to view the full version.

Telephone and online surveys of LLFAs

The online and telephone surveys were conducted concurrently between November and December 2014. Each covered a different area of the research:

- The telephone survey – conducted by Databuild - explored the extent to which LLFAs were progressing with key elements of their responsibilities, as well as exploring the ways in which their duties were being delivered and resourced. The LLFA lead officer – as identified by Defra – was interviewed.
- The online survey – delivered by Royal HaskoningDHV - focused upon the experience, skills and resources of individuals working within LLFAs. As such, this survey included responses from multiple individuals within the same LLFA. The survey had also been conducted in 2012 and 2013 as part of separate monitoring to assess the success of the Defra/EA capacity building programme (Royal

HaskoningDHV 2012 and Royal HaskoningDHV, 2013), on all occasions online, and the questions were kept as consistent as possible with the two previous surveys to maximise the opportunity for comparative analysis. Unless otherwise stated, all results reported from this survey are on the basis of individual respondent rather than LLFA.

Neither of the surveys included respondents from agencies other than LLFAs.

107 LLFAs responded to the telephone survey, a 70% response rate. 145 individuals (across 107 LLFAs – but not the same 107 as the telephone survey) responded to the 2014 online survey.

The data in the surveys were not weighted since, as shown in Table 2.1, there did not appear to be any significant under or over representation to be corrected for, e.g., in terms of type of council.

Table 2.1: Interviewed sample characteristics vs. wider population

	% in the interviewed sample	% in the population
County councils	17%	18%
Unitary councils	34%	37%
London Borough Councils	24%	22%
Metropolitan councils	25%	18%
Published Local Flood Risk Management Strategy	42%	32%

The findings from the outputs review and the surveys were used in two principal ways:

- To inform the in-depth research carried out as part of the development of case studies, through highlighting key research issues requiring further investigation; and
- As part of the overall analysis and synthesis in the final phase of the evaluation. The findings provide an overview of the impact of the changes introduced by the 2010 Act. They also help to provide an understanding of the ‘starting point’ of different LLFAs at the introduction of the Act, which has been utilised in the impact evaluation.

Case studies

Phase three of the evaluation involved the development of 30 case studies. Their purpose was to provide an in-depth understanding of LLFA activity across the country in different contexts. The case studies were intended to contribute to our understanding of the impact of the FWMA and the effectiveness and efficiency of LLFAs (objectives one and two of the evaluation), but the particular focus was on gaining an in-depth understanding of local

practice and delivery, identifying best practice and barriers, and exploring the scope for simplification and efficiencies (evaluation objectives three and four).

A range of case studies was selected to reflect a variety of contexts, types of council, approaches and levels of performance and progress, drawing on the typology developed during phase one (see section 2.2.3) and using the findings from the desk review and survey to help locate LLFAs which met the different criteria in the typology.

In each case study we sought interviews with the LLFA lead officer, other council officers (e.g. emergency planners), a council member and representatives from the Environment Agency, water company and Local Resilience Forum. Where applicable, we also sought interviews with representatives from the Internal Drainage Board and lower-tier councils. A good response rate was achieved from each of these groups (approximately 130 interviews were conducted in total, including a mix of face-to-face and telephone interviews), with the exception of council members. A total of seven interviews were conducted with council members across the 30 case studies.

2.2.3 Typology of LLFAs

A typology of LLFAs was developed during the scoping stage of the evaluation and was used for two principal purposes:

- To inform the selection of case studies, and ensure that a representative spread of local areas is incorporated; and
- To allow more robust comparative analysis to be conducted. The typology seeks to identify some of the characteristics which will have impacted on the nature of each LLFA's response to the FWMA. The evaluation findings could then be compared taking account of these characteristics, e.g., through isolating the sample of unitary councils or the sample of councils which had experienced significant flooding incidents in their area.

The typology is presented in appendix B, Table B.0.1. A number of other criteria were used to help ensure that the sample of LLFAs for the case studies was as representative as possible. These additional criteria are shown in Table B.0.2.

2.2.4 Logic model

Defra produced a logic model of the inputs, activities, outputs, short-term outcomes and longer-term impacts of local flood risk management as put in place by the FWMA. This was developed further through the course of the scoping stage and the revised version is shown in appendix C. This logic model provides an overview of what was intended to result from the introduction of the FWMA and was used as the basis for developing a theory of change and for establishing the scope of the questions for inclusion in the evaluation framework.

2.2.5 Theory of change

An overarching theory of change for improving local flood risk management was also developed during the scoping stage. It provides an indication of the intended causal relationships between the inputs, activities and outcomes, as well as the key assumptions which lie behind those causal relationships. The activities and outcomes (short- and long-term) are grouped into three themes:

- Management of risks;
- Level of risk; and
- Public perception.

The theory of change, shown in Figure 2.2, was utilised in formulating the evaluation questions and probes which were included in the evaluation framework, so that the evaluation could effectively explore and test the key assumptions and intended causal relationships behind the intended improvement in the management of local flood risk.

Given the relatively long-term nature of many of the intended outcomes of the FWMA and the likelihood that most will not yet have been realised, an understanding of intermediate outcomes or 'stepping stones' was considered to be particularly important for the evaluation. With this in mind, a more detailed theory of change was developed which focuses on the intermediate outcomes or 'stepping stones' toward improved local flood risk management which were identified during the scoping stage. These are all process outcomes. In other words, the detailed theory of change (Figure 2.3) shows the theoretical improvement in LLFA processes that resulted from the FWMA, and should in turn lead to the outcomes highlighted in the overarching theory of change (Figure 2.2). The stepping stones are presented in two groups:

1. Stepping stones towards LLFAs engaging in the activities required of them by the FWMA; and
2. Stepping stones towards delivering the key outcomes intended by the FWMA.

For each of the above, the theory of change (Figure 2.3) shows the factors affecting the starting points of the LLFAs, the assumptions which lie behind the move towards the stepping stones and the other external influences which may have impacted on the achievement of the stepping stones. These are labelled as positive or negative, depending on the nature of their expected impact on local flood risk management activity. Through looking for evidence of these stepping stones, testing the causal relationships and assumptions behind them, and exploring the influence of other external factors, the evaluation sought to gain a more nuanced and robust understanding of the impact of the FWMA. An overview of our findings is presented in section 7.3.

Figure 2.2: Overarching theory of change (Note: LFR = local flood risk, LFRM = local flood risk management, RMAs = risk management authorities)

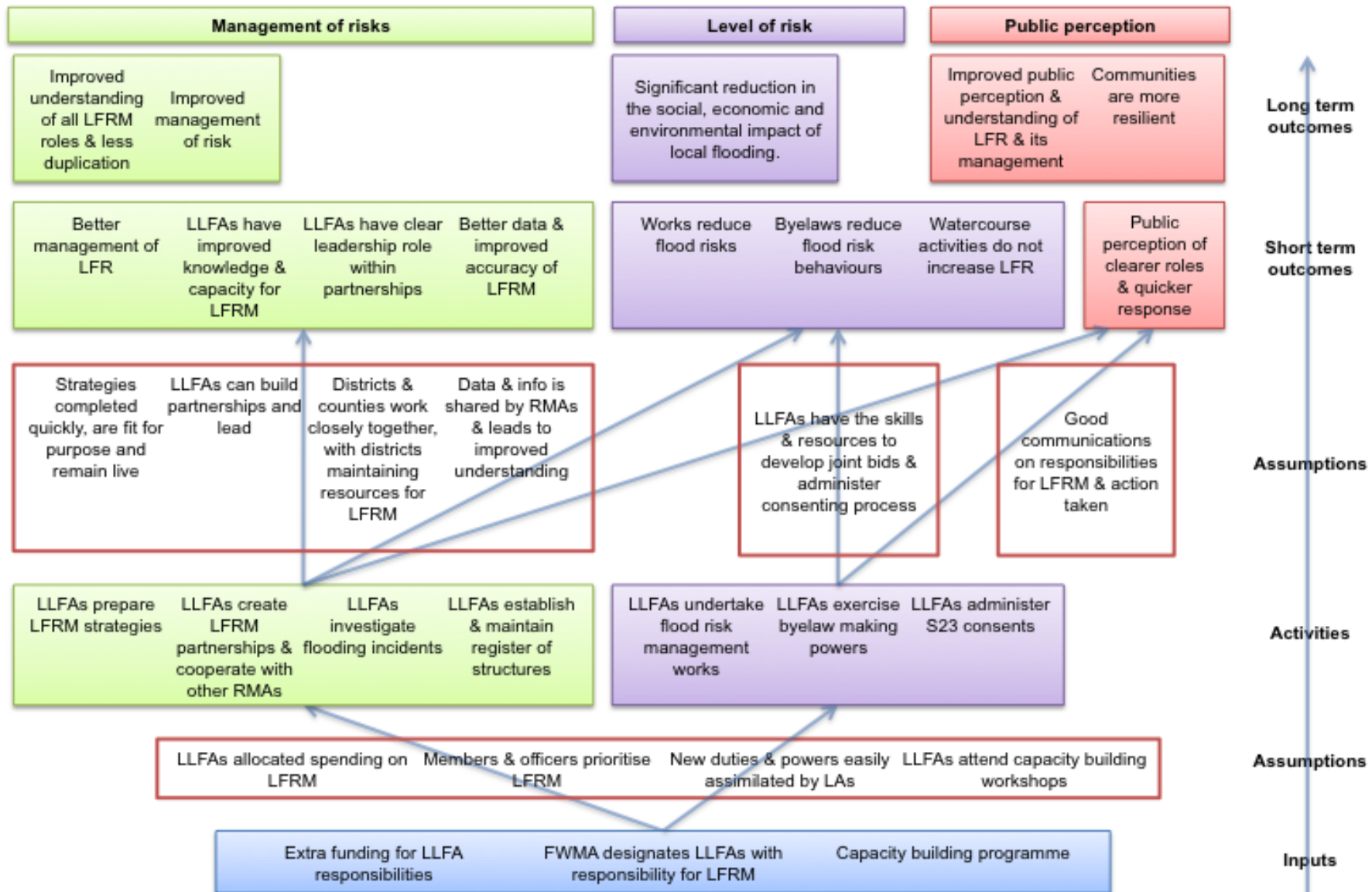
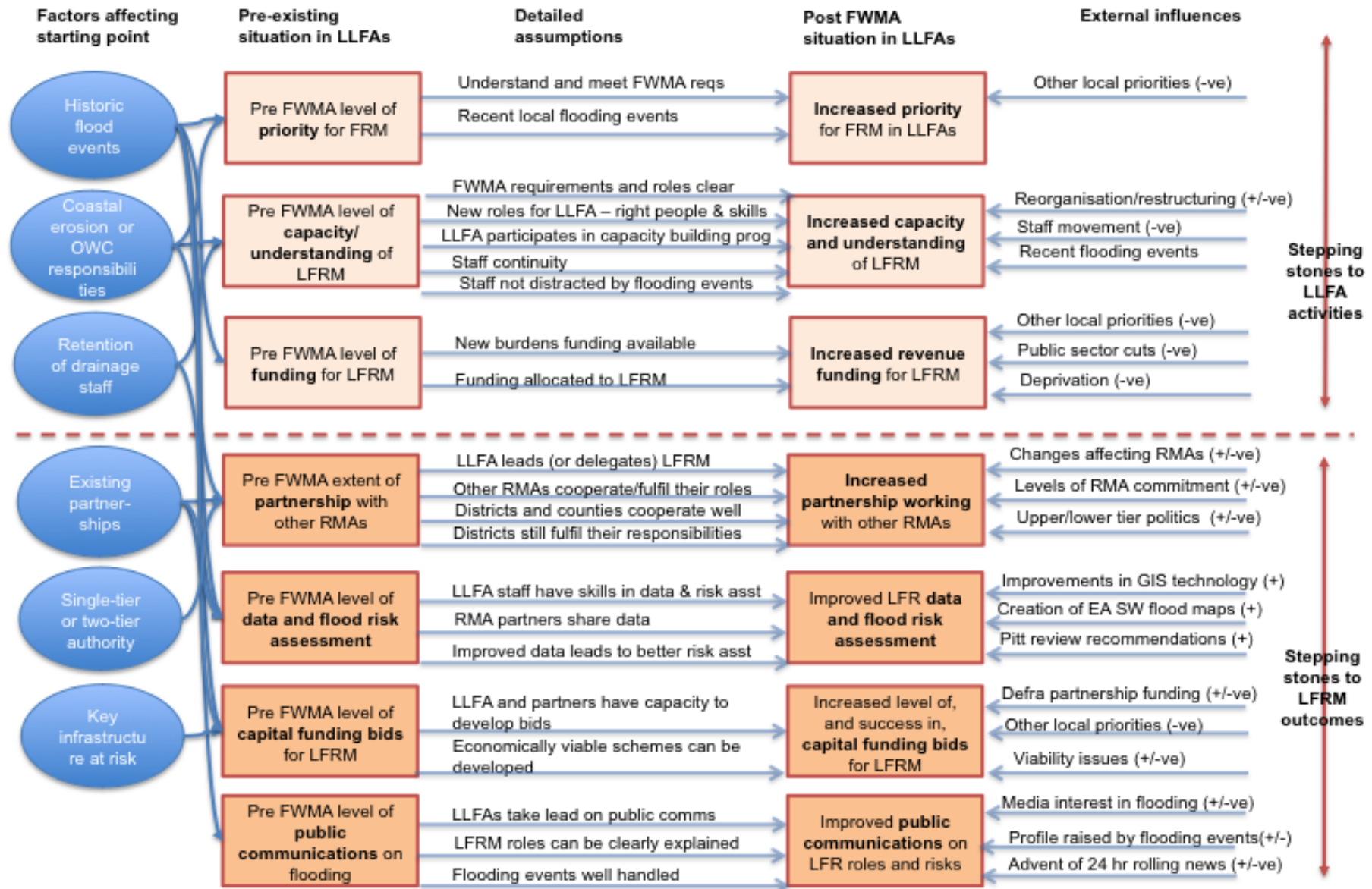


Figure 2.3: Detailed theory of change focusing on intermediate outcomes



2.2.6 Analytical strategy

Separate internal reports were produced which presented the findings from the:

- Document review;
- Online and telephone surveys; and
- LLFA outputs review.

The way in which each research method has informed our response to the evaluation questions is summarised in the table of evaluation questions in appendix B. The findings from each strand of the evaluation are drawn together in this report.

A data review workshop involving team members involved in all of the different strands of research was held once all of the research had been completed. The workshop also involved Defra representatives. This provided an initial opportunity to draw together key findings from the different strands, identify key themes and key areas for further investigation and analysis.

The case study findings and key stakeholder interviews from the scoping stage were coded using qualitative analysis software, using a hierarchical coding frame which was based on the evaluation questions and supplementary questions shown in appendix B. The data from the typology was attached to the case study as descriptors. This allowed analysis of the case study findings to be carried out based on the categories in the typology, e.g., we were able to isolate the findings on a particular question from two-tier authorities or from areas which had not experienced significant flooding incidents.

2.2.7 Limitations

The key limitation of the evaluation relates to the impact evaluation element. Impact evaluations “attempt to provide an objective test of what changes have occurred, and the extent to which these can be attributed to the policy”⁶. Doing this robustly requires a counterfactual but, as already noted, developing a counterfactual is problematic in this case. Our approach to evaluating impact in the absence of a counterfactual is described in section 2.1.

A further limitation relates to the extent of the research which has been possible. Whilst the research has engaged with a wide range of stakeholders, there has been no engagement with members of the general public. To have assessed public

⁶ HM Treasury (2011) *The Magenta Book: Guidance for Evaluation*

responses to the FWMA in a robust fashion would have been very costly and is unlikely to have represented value for money. This is particularly pertinent in the case of the evaluation questions relating to the impact of the FWMA on the levels of public understanding. Caution needs to be exercised in drawing conclusions in relation to these questions.

Finally, it should be recognised that the findings of the research relate to the time during which the research was conducted. The context for local flood risk management is fluid, and some significant changes have taken place since the research was conducted, e.g. changes to funding for LLFAs and the creation of a statutory consultee role for LLFAs on new SuDS schemes. These changes, and others, have not been studied, but should be borne in mind when considering the findings presented in this report.

3. Context

3.1 Historic legislative context

Before the commencement of the FWMA in 2010, responsibilities for flood risk management were split out over multiple authorities with no single authority with a lead responsibility.

The EA assessed flood risk from main rivers and the sea on a national scale to inform future policy direction, long-term investment programmes and shorter-term priorities.

A number of authorities had responsibility for managing various parts of the drainage infrastructure:

- IDBs were responsible for the management of ordinary watercourses within their drainage district;
- Lower-tier (district, borough and city councils) and single-tier (unitary councils) local authorities were the Drainage Authorities under the Land Drainage Act (1991), with permissive powers for smaller watercourses (ordinary watercourses) outside of IDB areas;
- Local highway authorities (i.e upper-tier and single-tier local authorities) were responsible for the management of local highway drains; and
- Water companies were responsible for public surface water sewers and drains.

Within this legislative context there was:

- No organisation with clear responsibility for managing flooding from surface runoff or groundwater sources;
- No clear responsibility for co-ordinating the inter-related responsibilities of others when the drainage infrastructure does not have the capacity to deal with this water; and
- No organisation responsible for the assessment of flood risk from local sources of flooding.

3.2 Policy development

A significant proportion of the damage caused by the summer 2007 floods was a result of surface water run-off in urban areas, which highlighted the serious gap in legislative and organisational arrangements for managing flood risk from sources other than main rivers and the sea. Local floods in England are estimated to account for damage costs of between £1.3 billion to £2.2 billion per year on average and are likely to increase as a result of climate change (Defra, 2009).

Following the 2007 floods, the Pitt Review (Pitt, 2008) was undertaken and this highlighted a lack of clarity around the responsibilities of the relevant organisations tackling local flood risk. To address this issue, the Pitt Review called for an improved understanding of local flood risk, more responsibility for local authorities and better partnership working by the organisations involved. In making the case for increased responsibility for local authorities, Pitt argued that 'local authorities already have a substantial role because of their responsibilities for ordinary watercourses, drainage, highways and planning. Their place-shaping role and local democratic accountability will help to ensure that the right local action is taken' (Pitt, 2008).

The Pitt Review identified failures in the management of local flood risk:

- Clear institutional and market failures in the management of local flood risks, including information failure and unclear responsibilities; and
- No lead co-ordinator to manage measures to tackle flood risk.

In February 2008 the UK Government published 'Future Water', a new strategy for England which set out a coherent policy framework for water management and the UK Government's vision for the water sector for 2030 (Defra, 2008).

The Pitt Review (Pitt, 2008) recommended (recommendation 18) that surface water management plans should provide the basis for managing local flood risk. Following the Making Space for Water programme, Defra instigated a series of 15 pilot studies in 2007 to undertake integrated urban drainage pilot projects (Defra, 2008). These examined:

- Partnership development;
- Data sharing issues;
- Modelling approaches to surface water flood risk assessment; and
- Options to mitigate surface water flooding.

These studies informed the development of the first surface water management plan guidance in February 2009 (Defra, 2010) and the undertaking of six pilot studies⁷.

The FWMA largely took forward the identified legislative needs of these three previous strategy documents (Future Water, Making Space for Water and the Government's Response to Sir Michael Pitt's Review of the summer 2007 Floods).

3.3 Policy implementation

3.3.1 Overall Aim for Local Flood Risk Management

The overall aim of the FWMA was to manage the risk of flooding more effectively and to create a more efficient basis for water management in the face of increasing pressures on industry and water resources (Defra, 2009).

It sought to establish effective mechanisms, underpinned by legislation, for consistently improving the management of local flood risk, to address the following key failings:

- Uncoordinated and inconsistent approach to surface water management;
- Unclear ownership and state of drainage assets which leads to sub-optimal decisions about maintenance and improvements;
- No organisation with overall responsibility and no incentive for any organisation to voluntarily take this role;
- Lack of alignment between risk management authorities (as now defined by the FWMA) with measures to manage flood risk in a piecemeal way; and
- Problems sharing data.

Originally it sought to give surface water management plans a stronger role in coordinating development and investment planning. This measure was later replaced by a requirement to develop local flood risk management strategies to manage local flood risk.

⁷ No evaluation of the 6 SWMP pilot projects was undertaken but the findings from the first edition SWMPs helped to develop the SWMP guidance document for the 77 subsequent SWMPs which were to be produced by the highest risk LAs. This is available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69342/pb13546-swmp-guidance-100319.pdf

3.3.2 Statutory Responsibilities

The FWMA designated upper-tier (county) and single-tier (unitary) local authorities as LLFAs with the overall responsibility for local flood risk management.

The statutory responsibilities relevant to this evaluation and introduced by the FWMA are:

- Develop, maintain, apply and monitor a strategy for local flood risk management in its area (section 9 of the FWMA);
- Act in a manner consistent with the national strategy and guidance (section 11);
- Co-operate and share information with other relevant authorities (section 13);
- Power to request information (section 14);
- An LLFA must investigate significant flood incidents (section 19);
- Duty to maintain a register of flood risk features (section 21);
- Transfer of duty from the EA to the LLFA to undertake consenting of ordinary watercourses (schedule 2); and
- Powers to create bye-laws and undertake works (schedule 2).

A detailed description of requirements in relation to each of the above is included in appendix E.

The Flood Risk Regulations (2009) transposed the EU Floods Directive into UK law. The directive aims to provide a consistent approach to managing flood risk across Europe. This required all LLFAs to produce Preliminary Flood Risk Assessments by December 2011. Those authorities with a 'significant flood risk area' (more than 30,000 properties at risk) were also required to produce:

- Hazard and risk maps by December 2013; and
- Flood risk management plans by December 2015.

Additionally the FWMA calls for the establishment of a SuDS Approval Body (SAB) to be set up within LLFAs. The Act would require SAB approval of all new drainage systems for new and redeveloped sites and highways to be obtained before construction can commence. This part of the legislation has not been implemented.

3.3.3 Timeframes

The FWMA set no deadline for producing the local flood risk management strategy, although the Government’s expectation is that they will be completed and published in a ‘reasonable period of time’. Defra has written to LLFAs and council leaders on a number of occasions i.e., May 2013, July 2014 (jointly with the LGA) and November 2014 to encourage progress in getting strategies in place. LLFAs were initially asked to have them in place by autumn 2013 and in the 2014 letters they were asked to do so by the end of 2014. Furthermore, in March 2015 Defra wrote specifically to those LLFAs they believed had yet to consult on their draft strategies asking that they do so by 31 March 2015.

3.4 New legislative context

3.4.1 Policy objectives and intended outcomes

The objectives, intended outcomes and benefits from the implementation of the FWMA are derived and developed from the Defra impact assessments (Defra, 2009, 2011a, 2011b) and summarised within Table 3.1.

Table 3.1: Policy objectives, intended outcomes and benefits of the relevant statutory responsibilities of the FWMA

Statutory responsibilities	Objectives	Intended outcomes
Flood risk management and local flood risk management strategies (section 9)	<ul style="list-style-type: none"> An improvement in the management of local flooding An improvement in the understanding of local flood risk An increase in the use of sustainable drainage systems (<i>not applicable to this evaluation</i>) Improved assessment of the interaction of local flood risks with any other cause of flood risk such as main rivers or the sea Clarity on roles and responsibilities for local flood risk management 	<ul style="list-style-type: none"> A significant reduction in the social, economic and environmental impact of local flooding. Reduced duplication across organisations involved in flood management.
Section 13 – Cooperation and sharing of information	To develop a common understanding between relevant authorities as to what is required of them to meet s.13 and s.14 of the Act in order to facilitate the development of local flood risk management partnerships and ultimately more effective management of local flood risks, without imposing an unreasonable burden.	More effective management of local flood risks, without imposing an unreasonable burden.

<p>Section 14 – Power to request information</p>	<p>Give organisations responsible for management of local flood risk the necessary powers and duties to do this effectively.</p> <p>To encourage the effective management of flood risks by addressing information failures and unnecessary transaction costs allowing LLFAs and the EA to obtain the reasonable information needed to put in place the flood and coastal erosion risk management plans and strategies.</p>	<p>Address current information failures and transaction costs by allowing the EA and LLFAs to request information relevant to their flood risk functions</p> <p>By addressing this, it will be possible to manage risks more efficiently therefore alleviating some of the social, economic and environmental impacts of flooding.</p>
<p>Section 19 – Investigation of flooding incidents</p>	<p>Give organisations responsible for management of local flood risk the necessary powers and duties to do this effectively.</p> <p>To tackle the problem that sometimes recurrent flooding incidents remain unresolved as a result of no organisation accepting responsibility to investigate the cause of flooding, and if appropriate, pursue remediation therefore addressing the existing institutional failure. Section 19 will address this problem by assigning responsibility to the LLFA to investigate flooding incidents where they consider it necessary.</p>	<p>Address current institutional failures by assigning responsibility to LLFAs to investigate flooding incidents</p> <p>By addressing this, it will be possible to manage risks more efficiently therefore alleviating some of the social, economic and environmental impacts of flooding.</p>
<p>Section 21 – Register of flood risk features</p>	<p>Give organisations responsible for management of local flood risk the necessary powers and duties to do this effectively.</p> <p>To address information failures and to aid the timely resolution of flood incident disputes and to increase LLFAs understanding of existing drainage assets by placing a duty on the LLFA to maintain a register of structures or features, which in the opinion of the authority, are likely to have a significant effect on a flood risk in its area.</p>	<p>Address information failure by placing on LLFAs a duty to maintain a register of significant drainage assets in their areas.</p> <p>By addressing this, it will be possible to manage risks more efficiently therefore alleviating some of the social, economic and environmental impacts of flooding.</p>
<p>Schedule 2 – Amendments to Land Drainage Act</p>	<p>Give organisations responsible for management of local flood risk the necessary powers and duties to do this effectively</p>	<p>Address current institutional failures by providing one single authority with the necessary powers to manage local flood risk.</p> <p>Manage local flood risk more effectively</p>

4. Implementation of statutory requirements

This chapter presents the findings from the evaluation which relate to the implementation of the statutory requirements of the FWMA.

4.1 Local flood risk management strategies

4.1.1 Pre-2010 baseline

Section 9 of the FWMA requires all LLFAs to develop, maintain, apply and monitor a local flood risk management strategy in its area for surface water runoff, groundwater and ordinary watercourses. Prior to the Act's introduction in 2010 however, there was a limited amount of strategic management of local flood risk.

Surface water management plans were one of the first comprehensive studies into surface water flood risk. Before 2010 these had been undertaken only in six of the areas of highest risk through a targeted, Defra-funded, pilot project (see Table 5.1).

Strategic flood risk assessments had also been produced that considered other sources of flooding (i.e. surface water, pluvial, groundwater, sewers and canals, etc.) to some degree. They were produced by local planning authorities to assess flood risks, now and in the future, and to assess the impact that land use changes and development in the area would have on flood risk, in order to inform planning decisions. However a strategic flood risk assessment review study concluded that *"discussions of risks were brief and usually limited to historical flooding records only"* (Defra and Environment Agency, 2009).

There was a limited understanding of all local risk from strategic flood risk assessments because of a lack of available data and mapping (Defra and Environment Agency, 2009). Also, whilst catchment flood management plans were intended to consider all sources of flooding, the coverage of surface and ground water risk was significantly weaker, reflecting the lack of data and detailed modelling available for these sources of flooding (NAO, 2011).

4.1.2 Outputs

Publication of strategies

The outputs review found that by April 2015, out of 152 LLFAs in England, 90 (59%) had published final or consultation draft local flood risk management strategies. This is a significant increase on the number of published strategies in December 2014, when 48 LLFAs had published final or draft strategies, highlighting that the rate of

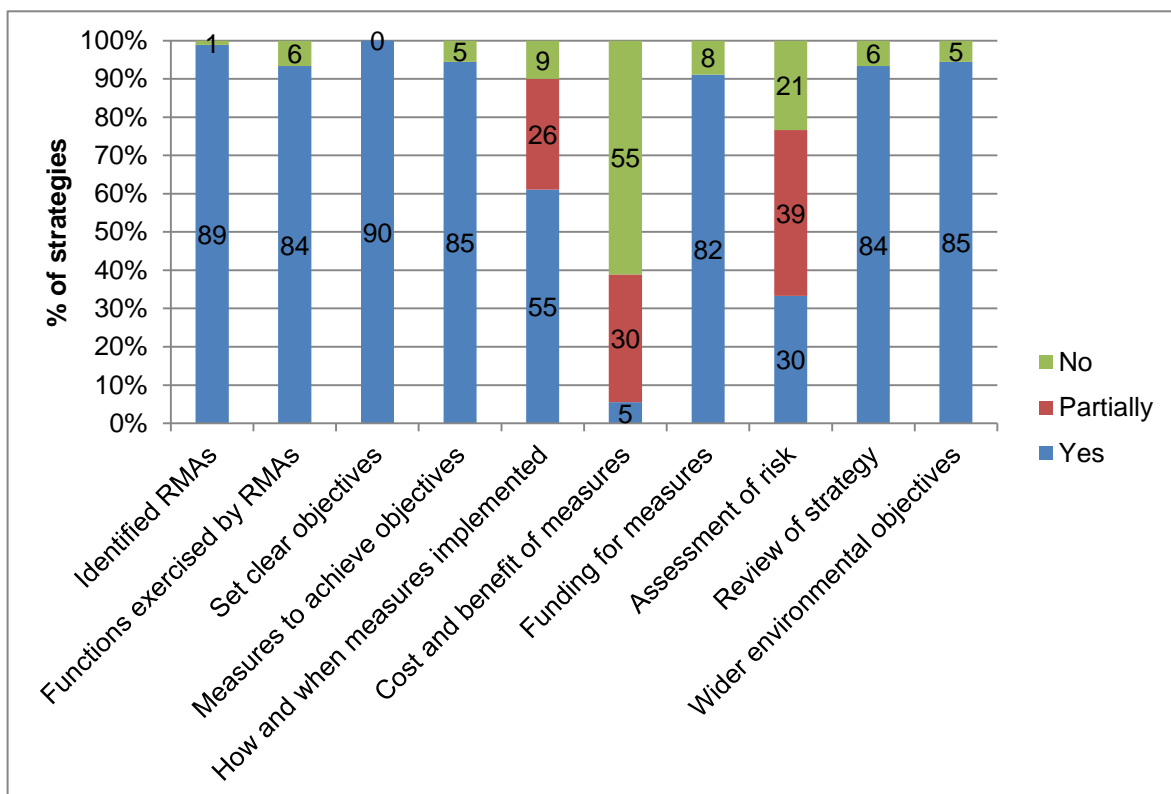
publication during the evaluation’s research period was relatively high. Differences between these figures and those published elsewhere, e.g. by the EA, are likely to be accounted for by differences in the timing of the assessments. A number of the case study LLFAs were in the process of publishing their strategies, which reinforces this conclusion. This may reflect the pressure on LLFAs to produce strategies which had been exerted by Defra and others. We think it is unlikely that the evaluation itself would have had any bearing on this, since assurances of anonymity were given in all communications with LLFAs.

Compliance with statutory requirements

The 90 draft or final strategies were reviewed to assess whether they complied with the statutory requirements set out in section 9 of the FWMA. The assessment questions and indicators used for this review are set out below in appendix F to provide context to these findings.

The review found that the majority of the strategies contained sufficient evidence to demonstrate compliance with the statutory requirements set out in section 9 of the FWMA (Figure 4.1).

Figure 4.1: Local flood risk management strategies assessed against statutory requirements (total (n)=90)



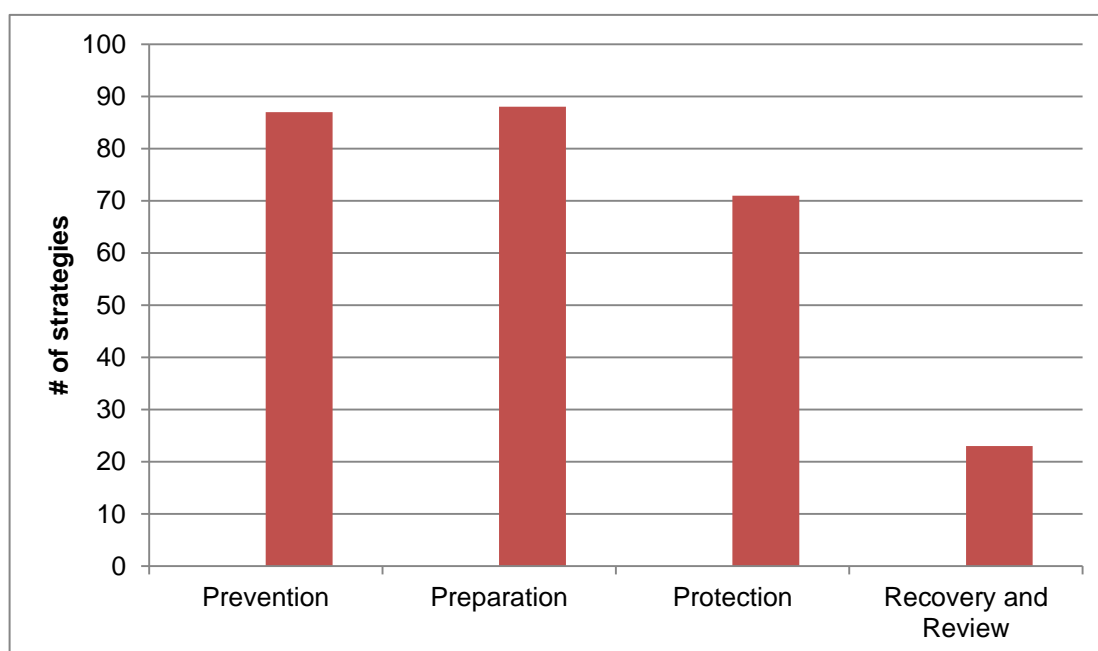
The element of statutorily required information least consistently included within the strategies was information on the costs and benefits of measures. Measures

described in the strategies were often not defined by cost and benefit. The reasons for this were explored in the case studies. Some LLFAs suggested that they had deliberately left out data on costs and benefits, either to keep the strategy more accessible or to avoid the strategy becoming out of date due to changes in data. However, in other cases, it appeared to be due to a difficulty in generating data on costs and benefits. The resource involved in generating the data was cited as one reason but there also appeared to be an issue in terms of accessing suitably robust data on groundwater and surface water flood risks in order to calculate costs and benefits. Assessment of risk was also an area of weakness. Some case study LLFAs reported challenges in accessing sufficiently robust data to assess risk.

The EU Floods Directive describes risk management measures as prevention, protection, preparedness and recovery and review. The strategic objectives contained in the strategies were assessed against these types to determine the scope of objectives that were included within the strategies (Figure 4.2). These are defined as:

- Prevention – avoiding putting people or the environment at risk of flooding;
- Preparation – taking actions that prepare people for flooding;
- Protection – protecting people from risk of flooding;
- Recovery and review – learning from when flooding happens and how to recover from it.

Figure 4.2: Types of objectives included with local flood risk management strategies (n=90)



Most strategies were found to have a combination of objectives relating to prevention, protection and preparedness, with recovery and review objectives being most often overlooked.

Further key findings from the review of strategies

Further key findings from the 90 reviewed strategies are set out below:

- All strategies that were reviewed (n=90) include measures for more than one source of local flood risk (i.e. surface water, and ordinary watercourses) and over half of them (48, 53%) also included measures for main river flood risk as well as local flood risk.
- 89% (n=80) of the reviewed authorities had set up flood risk partnerships for managing local flood risk. 60% (n=54) of authorities stated that overview and scrutiny committees had a role in the governance of flood risk management arrangements. Where strategies did not reference overview and scrutiny committees, this does not necessarily imply that such governance arrangements were not in place, but simply that this was not referenced in the strategy.
- Nine authorities had evidence within their strategy of delegation of powers or duties to another risk management authority. These powers were mainly related to investigation of flooding incidents (n=3) and consenting on ordinary watercourses (n=4). In the majority of cases, these powers or duties were delegated to either lower-tier authorities or IDBs.

- Two councils had entered into a collaborative working agreement and developed a joint local flood risk management strategy.

Consistency with National Flood & Coastal Erosion Risk Management Strategy

The local flood risk management strategy objectives were reviewed against the guiding principles in the National Flood and Coastal Erosion Risk Management Strategy (Environment Agency, 2011) to identify which principles were taken forward in their strategic objectives. The guiding principles are summarised as:

- Community focus and partnership working;
- Proportionate, risk based approaches;
- Sustainable;
- Multiple Benefits; and
- A catchment and coastal “cell” based approach.

All strategies were found to consider, and were at least partially consistent with, the National Strategy guiding principles and 67% (n=60) were considered to fully demonstrate consistency. Where strategies were not considered fully consistent, this was due to the lack of evidence available within the strategy, rather than there being an apparent conflict with the principles of the National Strategy.

Implementation of strategy actions

All of the LLFAs that had published their strategy at the time that the telephone survey was conducted [n=56] said that at least one of the actions from it had been completed or progressed to some degree. The type of actions that had been implemented or were in progress, included:

- Physical flood risk management schemes;
- Establishing local management and communications structures;
- Work to inform prioritisation of resources;
- Producing documentation, such as surface water management plans or asset registers;
- Data collection, such as asset surveys or modelling work;
- Creating publicly accessible information repositories; and
- Building team resources.

4.1.3 Awareness and use of guidance

Awareness and use of guidance

Regardless of their progress with the local flood risk management strategy, respondents to the telephone survey were asked if they were aware of the LGA's 'Framework to Assist the Development of the Local Strategy for Flood Risk Management'⁸ guidance document. 91% [n=97] said that they were aware of this.

Of this group [n=97], 86% [n=83] (78% of all LLFAs) said that they had used the document or were planning to do so; 9% [n=9] said that they had not used it nor had plans to, whilst 5% [n=5] were not sure.

Where they had used the document [n=83], respondents were asked which aspects of the guidance they found most useful. Most were not able to answer⁹, which in some cases may have been due to the time which had elapsed since they developed their strategy, but where they could recall content and single out a specific element, responses included:

- *“It was useful gathering a range of experiences of other LLFAs in various localities.”*
- *“The section showing a structure for creating the Strategy was useful.”*
- *“I assume most authorities would use it as a template - to get commonality of strategies across local authorities in the country is good.”*
- *“At the end of each section there was a prompt / reminder of important aspects to consider, which we found especially helpful.”*
- *“Bullet point check list at the end of each section were useful.”*

Opportunities for improving guidance

Most feedback on the guidance from the case studies was positive. A number of case study stakeholders suggested potential improvements to the guidance but there was no consensus view on this. Some wanted to see more detail, including the

⁸ This was presented as a 'living draft' and there was an intention to update it in future.

⁹ A large number of respondents said that they thought it was “all or generally useful” and / or could not recall the document sufficiently to pick a single element. This could be indicative of respondents reporting use of the document when the LLFA – or at least they personally – did not. Some respondents did acknowledge at this point in the survey that the document was used by colleagues or consultants working for the council rather than them personally. Further to this, several said that they had only dipped into the document for a specific bit of information rather than as a complete companion to the whole local flood risk management strategy preparation process.

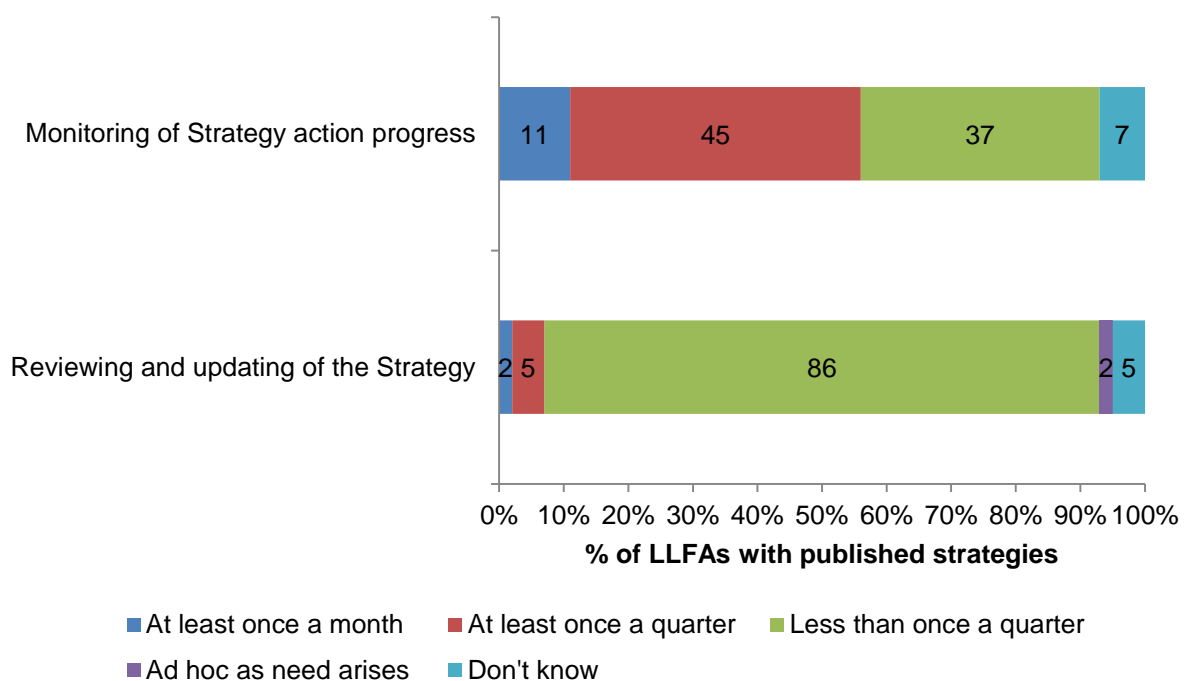
suggestion of standard templates. Others felt the guidance was too detailed and prescriptive, leading to an approach which was considered to be too generic.

4.1.4 Monitoring and review

Frequency of monitoring

LLFAs with a published local flood risk management strategy were asked in the telephone survey how often progress with strategy actions is monitored and how often the strategy itself is reviewed and updated. The results are shown in Figure 4.3. The majority of the LLFAs surveyed were monitoring actions at least once a quarter. Unsurprisingly, the vast majority were reviewing their strategy less than once a quarter.

Figure 4.3: “How often is progress monitored for actions in the Strategy?” and “How often is the Strategy reviewed and updated?” [n=56]



Nature of monitoring

The case studies revealed a variety of approaches to the monitoring of strategies. Some did not have monitoring processes in place or planned yet. This was particularly the case where the LLFA had not yet published their strategy but one LLFA who had published their strategy stated that they would not be carrying out any monitoring because of resource pressures and the perceived absence of any major flood risk issues. Where the LLFA did have monitoring procedures in place, the frequency of monitoring varied between monthly and annually. LLFA 11 had monitoring procedures at two levels: monthly management scrutiny, involving a chief

officer and other senior managers, including the use of some key performance indicators, and annual scrutiny committee reviews.

Challenges of monitoring

As noted above, resource constraints in one LLFA with low perceived levels of flood risk have led to a decision not to monitor the strategy. One other LLFA referred to resource challenges in relation to monitoring but this was more in terms of finding the balance in resource allocation between monitoring and action. The most commonly cited challenge in terms of monitoring, however, related to the nature of the strategy items (objectives and actions) being monitored and the absence of suitable progress measures.

The actions are generally pretty poorly defined, they're not SMART targets or anything, mainly because of a lot of its ongoing work. So things like continued flood event planning with emergency planners, some action we keep ongoing, we keep doing, but how do you measure that? (LLFA 27 LLFA lead).

Local flood risk management in practice - 1

In LLFA 4, actions in the strategy are monitored regularly by the technical group of officers, which is partnership-wide. A quarterly summary goes to the strategic group of the partnership. The LLFA feels that this active monitoring helps to maintain buy-in:

Accountability is good. They are not just actions for us [but for other partners]. Everyone is agreed and signed up to the strategy (LLFA4 LLFA lead).

Benefits of monitoring

Very few case study respondents could pinpoint benefits arising from the monitoring of strategies. Two LLFAs referred to the benefits of monitoring as being able to demonstrate that properties had been protected, whilst two others referred to the benefits in terms of gaining buy-in for the work they are doing. In one case this was in terms of buy-in from councillors and in the other case (LLFA 4 – see text box), it was buy-in from partner agencies.

4.1.5 Success factors

The case studies highlighted a number of factors which were perceived by stakeholders to have helped or enabled strategy preparation.

- **Staffing and resourcing.** A number of those LLFAs with larger and more established teams working on flood risk recognised that this gave them an

Local flood risk management in practice - 2

As part of the strategy preparation process, LLFA 5 tracked down all the council's previous engineers, and got them into a room with the consultants to 'download' their knowledge.

If you just use EA data, there are five at-risk areas in this LLFA. After meeting with the engineers and looking at archived records, there are 17 (LLFA5 LLFA lead).

advantage in terms of strategy preparation compared to those with more limited resources available.

- **Use of consultants.** There was a divergence of views on and experiences of the use of consultants for strategy preparation. As noted above, some were dissatisfied with their work. Others deliberately kept the work in-house in order to make maximum use of local knowledge or to maximise the learning from the process, and highlighted this as a key success factor. However, some LLFAs highlighted the use of consultants as a key success factor in developing their strategy, with various benefits highlighted, including providing value for money and providing an opportunity to progress the strategy when staff recruitment was not possible. Two groups of LLFAs covered by the case studies collaborated to employ consultants to develop a 'generic front-end' for their strategies, with the area-specific 'back-end' being produced individually. This was considered in both cases to have been a cost-effective approach.
- **Secondment of EA staff and wider EA involvement.** A significant number of LLFAs appear to have taken EA staff on secondment to assist with strategy preparation. This generated perceived benefits in terms of providing expertise for the strategy preparation process, but also wider benefits, particularly in terms of strengthening links with the EA. More widely, a significant number of LLFAs highlighted the support of the EA as a key success factor in their strategy preparation.
- **Key individuals.** In a number of case studies, non-LLFA stakeholders cited the qualities of the LLFA lead as a key success factor in strategy preparation. In others, the presence of experienced drainage engineers with extensive local knowledge was seen to be of benefit in terms of understanding risks.

It's very much down to the individuals doing it. If the individual is passionate and interested in the subject, and wants to drive it forwards you will end up with a very good document that has been produced proactively and everything else. If you get the individual that's just been lumbered with it so to speak, they're not particularly interested in it as a subject, it's just another thing to do and you will end up with a very different document (LLFA 7 Water company).

- **Surface water management plans.** A number of LLFAs suggested that where surface water management plans were developed, these formed a key 'building block' for the local flood risk management strategy. As already noted, in some cases the links between the two are so close that some stakeholders considered them to represent a duplication of effort.
- **Building on the experience of others.** Some LLFAs who produced later strategies suggested that learning from earlier strategies was useful. More

widely, the sharing of learning and good practice between LLFAs was found to be of benefit in a number of the case studies. This was often achieved through regional or sub-regional networks, often funded by the local RFCC.

Local flood risk management in practice - 3

LLFA 14 used a shared service agreement to develop their strategy in conjunction with six other LLFAs. All of the LLFAs already sit on a sub-regional flood group together.

They commissioned a consultancy to produce a generic strategy for all of the LLFAs concerned. Each LLFA then tailored it to make it bespoke for their area, producing a priority-based action plan that sits behind the local flood risk management strategy.

Benefits included better value for money and shared learning and ideas. On the downside, the process took longer as a result of involving six councils and some councils were considered to have less ownership of the outputs as a result of the work being done by consultants.

producing their strategies.

- **Context.** The specific challenges facing two-tier areas are highlighted in the following section. It would be too simplistic to say, however, that unitary authorities found the strategy preparation process more straightforward. It is clear that a combination of factors are significant, including the size of the LLFA area, the scale and complexity of the drainage network and the scale and complexity of local flood risks. Unitary authorities covering a small area, with a simple or well-understood drainage network and limited flood risk appeared to be at an advantage in terms of the ease of
- **Defra Pathfinder¹⁰ projects.** Whilst public engagement was highlighted as a key challenge in strategy development, those LLFAs which had been involved in one of the 13 Defra Pathfinder projects, suggested that these had been valuable in engaging with at-risk communities.
- **Deadlines.** Although the absence of an official deadline for strategy publication was cited as a hindrance by some stakeholders, some artificial deadlines were set and these encouraged strategy preparation. In one case, the LLFA suggested that they had been pressured by the EA to complete their strategy and that this had been effective. In one region, the RFCC set a deadline. Although, it was not enforceable, one water company stakeholder who worked across the region considered it to have been an important reputational driver, whilst another LLFA referred to pressure which had been applied by the EA.

¹⁰ The Defra-funded Flood Resilience Community Pathfinder scheme funded innovative community responses to increase flood resilience in 13 communities across the UK

- **Strategic approach.** A number of stakeholders commented on the need for local flood risk management strategies to adopt a genuinely strategic approach, not just focused on technical solutions to known issues, but instead harnessing the wider potential benefits of flood risk management, particularly in relation to planning, economic development and regeneration. This was seen to be important in terms of helping to secure delivery of schemes, but also in terms of securing buy-in from members. It was suggested by some that, where LLFA teams are housed within planning, or where they have close links with planning, this strategic approach is more likely to be present.

A range of other success factors were identified related to collaboration and data sharing between risk management authorities in the preparation of strategies. These are discussed in more detail in the relevant sections later in this report.

4.1.6 Benefits

Evidence of reduced flood risk

Where LLFAs had completed or progressed actions in their strategy [n=54], they were asked whether they had evidence that the actions taken had reduced risk. 58% of those taking action [n=33] said that they had.

In most of these cases the action had been more strategic (e.g., building partnerships or conducting studies) than physical. In such cases respondents could only report a hypothetical benefit that should ultimately arise from such actions. Even where they had undertaken physical flood prevention works, respondents were often limited to citing pre-implementation studies which had demonstrated the need for action and the theoretical benefits from it i.e., the works had yet to be tested. The case studies confirmed that in most cases it was too early to be able to demonstrate reduced risk as a result of strategies being produced, although a number of LLFAs pointed to schemes which had secured funding and were anticipated to reduce risk.

However, case study stakeholders provided anecdotal evidence of schemes reducing risk, including a small number of cases where works had been tested by flooding incidents and LLFAs suggested that they had been able to observe and verify the efficacy of the works.

In some cases, schemes had been implemented but the LLFA could not necessarily attribute this to their local flood risk management strategy. For example, LLFA 28 had implemented two schemes since the introduction of the Act but both were said to have resulted from earlier PFRA work which then informed the strategy, and the LLFA considered that they would have happened in the absence of the Act. In other cases, stakeholders recognised that some schemes may have happened in the absence of a local flood risk management strategy but suggested that the strategy had resulted in them happening sooner.

I think what the strategy did it allowed and enabled those priority schemes to be delivered a lot sooner perhaps than they might have been otherwise without the strategy there, because the strategy contained all the supporting evidence that was actually needed to support the scheme. So the schemes might have happened, but I don't think they would have happened within the same timescales (LLFA18 LLFA lead).

Other benefits of strategies

As with reducing flood risk, when asked about other benefits resulting from local flood risk management strategies, many case study stakeholders felt it was too early to pinpoint specific benefits. However, there are two clear themes in the responses to this question. These encompass even those LLFAs who questioned the overall value of the strategy.

Firstly, many stakeholders referred to the improved working relationships and collaboration between different agencies which resulted from strategy preparation work and other aspects of the Act. In most cases, the improvement in working relationships and collaboration related primarily to the LLFA, EA and water company but in a small number of the case studies, wider linkages had been made, for example with Local Enterprise Partnerships (LEPs). Some reported knock-on benefits from this increased communication and collaboration in terms of delivering a more holistic approach to managing flood risk. For example, LLFA 7 suggested that it had led to a broader approach to flood risk management schemes in the area, taking into account all sources of flooding, upstream and downstream risks and potential development land as well as existing properties. LLFA 12 had linked in to the LEP's growth strategy, and had made the case for flood risk management as a driver for economic growth, opening up access to other funding sources. Collaboration and partnership working issues are discussed further in section 5.1, and funding in section 6.1.

Secondly, even in cases where LLFAs were actively involved in addressing local flood risk prior to the requirement to produce a strategy, many stakeholders identified benefits in terms of prioritising action. This was seen to be important not just in terms of steering and structuring LLFA action but also because it provided an evidence-based approach which could be communicated to council members and the public. This has been important in terms of maintaining flooding as a political priority. One LLFA had secured significant council funding for action as a result of their strategy, whilst another suggested that their strategy had been key in avoiding cuts in spending on flood risk in the context of wider council spending cuts. This also relates to an earlier point in the challenges section about the difficulty of maintaining a focus on addressing risk rather than being unduly swayed by flooding incidents or political pressure. The publication of a strategy was seen by some to have been helpful in this regard.

In a council you get lots of pressures from various people, and the two main pressures really are from the public and councillors. I think previously it may have been a case of who shouts loudest will get the scheme delivered, or whatever, and that still is the case to a certain extent. But when I produce a list of measures and actions I try to prioritise it in a structured way, so I'd be looking at the number of properties, the cost-benefits, how deliverable the scheme is, where can we get the funding, is there any opportunities for partnership funding, all those things I can put into the mix. And then out of that we prioritise it in a much more structured way than we may have done before, whereas whichever member was shouting loudest for their particular patch that scheme may have got delivered, previously (LLFA 9 LLFA lead).

Impact of the absence of strategies

In the cases where strategies had not yet been published, stakeholders were asked what impact they felt this had on the management of local flood risk.

Perhaps unsurprisingly, LLFA lead officers in these cases were unanimous in their view that the absence of a strategy had not had a negative impact on the management of local flood risk. Most suggested that they were pursuing a clear course of action anyway. A number of LLFAs with surface water management plans suggested that these continued to guide action, whilst others referred, for example, to 'having an informal strategy' or 'working as though they have a strategy'. In two cases there were seen to have been benefits from delaying strategy publication because of the background work (e.g., on section 19 investigations), which had been taking place and which would lead to a better strategy.

However, a small number of non-LLFA stakeholders in these cases suggested that the absence of a strategy did have disbenefits. One EA representative suggested that the absence of a strategy was undermining an LLFA's funding bids. They described their schemes as looking 'a bit flakey in the absence of the strategy' and suggested that the order of priorities may not have been correct.

It's like they've come up with an answer too soon and the schemes are not backed up by sufficient studies and data (LLFA 13 EA).

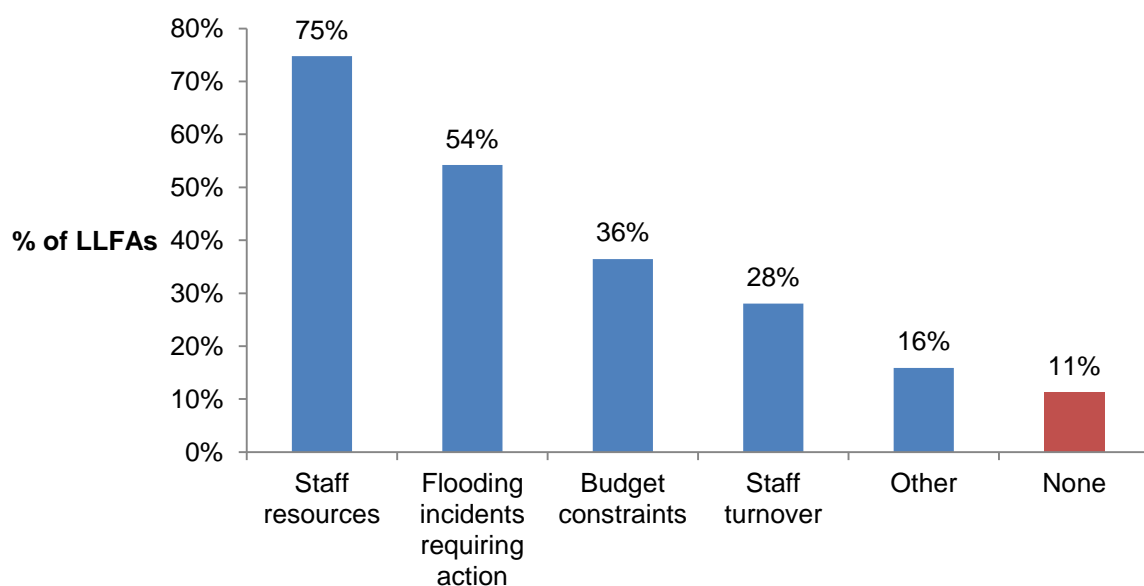
Similarly, one water company representative suggested that the absence of a strategy had limited their ability to identify schemes for potential joint funding. In another case, an EA representative suggested that the absence of a strategy meant that some elected members were still unaware of the council's duties in relation to flooding, which links back to the point in the previous section about strategies playing a role in maintaining a political priority for flooding.

4.1.7 Constraints and challenges

Factors hindering strategy production

Regardless of their progress with the local flood risk management strategy, all telephone survey respondents were prompted with a list of factors which may have adversely affected the time and resource allocated to prepare the strategy. The extent to which each of these was selected is shown in Figure 4.4.

Figure 4.4: “Which of the following factors have adversely affected the amount of time and resource available required to prepare your Strategy? [multiple response] ” [n=107]



‘Other’ factors cited by respondents included delays in receiving input from other stakeholders (ranging from neighbouring authorities to the public), the challenge of aligning it with other strategic documents, and alternative priorities. Two respondents specifically stated that the strategy was pushed down the priority list because there is no deadline on it. The factors explored were to some extent overlapping e.g., staff resource issues may ultimately reflect budget constraints.

Analysis also indicated that flooding incidents could be a factor in completion of the local flood risk management strategies. 55% of LLFAs experiencing significant flooding incidents *prior to the FWMA* [base is n=77] had completed their strategy, compared to 38% amongst those not experiencing incidents [base is n=26]. The proportions are similar for those that have and haven’t experienced incidents post-2010 (56% and 40% respectively). Whilst this suggests that flood incidents have been a driver of strategy completion, it was apparent from the case studies that in some cases, incidents have also significantly delayed the publication of strategies,

due to the resources consumed in responding to, investigating and reporting on the incidents.

Of the LLFAs that did not think any factors had adversely affected them [n=12], all but one had published their local flood risk management strategy.

Other challenges

The case studies highlighted a number of wider challenges relating to local flood risk management strategies, including:

- **Data.** As already noted, securing robust data, particularly on the costs and benefits of action to address local sources of flood risk, was a challenge. The available data on surface water and ground water flood risks was not considered by some stakeholders to be as robust as the data on fluvial and coastal risks. Defra anticipated that preliminary flood risk assessments would have provided the basis for the risk assessments which were included in strategies. It is not clear why they did not do so in all cases. This may warrant further investigation.
- **Use of consultants.** Consultants appear to have been widely used to address the challenges associated with data and for wider assistance in developing strategies. Whilst this has been successful in many cases, a small number of LLFAs reported disappointment with consultancy involvement, either because of the quality of the outputs or the costs involved. One IDB strongly felt that the use of consultants for strategy preparation was inappropriate. They pointed out that the FWMA prevented strategies from being prepared by other risk management authorities, but suggested that this would have been a better and more cost-effective solution than commissioning consultants to produce them.
- **Public engagement.** A significant number of LLFAs stated that they had experienced difficulties in gaining interest in the strategy from members of the public. No LLFAs referred to achieving large-scale public engagement.

We started our broad communications and engagement campaign specifically for the flood risk strategy, on pretty much the day the rains started that were going to produce the 2012 flooding. We were getting reports of local flooding incidents literally as we were going out setting up our stalls for local events.... Well the biggest surprise to us was the amount of interest that we got was minimal, it was really strange... the lack of public interest was amazing (LLFA12 LLFA lead).

In terms of public engagement, a further challenge cited by one LLFA was communicating risk in the context of unprecedented extreme weather. The LLFA had found it difficult to maintain public credibility in that context.

When we had the first one [flood] and we said it was a 1 chance in 30 occurring they accepted: 'ah well these things happen'. When it happened the second year, and we said it was about 1 in 40 they said, 'What? But you said it was a 1 in 30 last year, so shouldn't we be another 30 years before we get such a...?' And then 2007 came and our credibility was close to zero and it is a difficult topic (LLFA 11 LLFA lead).

- **Managing public expectations.** A few LLFAs had found it difficult to develop a strategy with identified actions whilst, at the same time, managing public expectations of what would be delivered.

Once you identify they're in a flood risk area, and in particular if you end up moving towards a local study, expectations can be very high. They don't understand that the local study is to actually identify whether there's a viable project there. So they think just because you're doing a study that you're going to get a project. It's a difficult one to manage (LLFA5 LLFA lead).

- **Definitions and responsibilities.** In one LLFA which had experienced groundwater and sewer flooding, a lack of clarity about the definition of different sources of flooding was cited by the LLFA and the EA as a challenge to strategy development. It was not clear to either party at what point a groundwater flood becomes a surface water issue. Responsibilities were also said to be confusing in some instances because of the inter-relationships in the network.

Water becomes the water company's responsibility when it goes underground, but other water is the highways authority's responsibility. In [area], some infrastructure under the road is owned by [the water company], and some is not – it's very confusing (LLFA 3 other council officer).

- **Some questioning of the overall value of strategies.** A minority of stakeholders questioned the overall added value of producing local flood risk management strategies. In some cases, there was considered to be too much overlap with other strategies, particularly surface water management plans.

Consenting, writing strategies, creating databases doesn't actually reduce flood risk, in fact it increases flood risk because all you are doing is diverting limited funds elsewhere. So I'm very much of a mind

that actually they don't reduce flood risk, and there are so many strategies around because we've just got the EAs consultation on river basin plans and flood risk management plans, and how they fit in with the catchment flood management plan which were only produced 3 or 4 years ago, how does the LLFA flood risk strategy differ from local strategies... why don't we just have one document we all follow in the catchment? (LLFA5 IDB).

In another case, where the LLFA had a large and active drainage team in place, the strategy was not considered by the LLFA lead to have added any value to their existing activity, but had simply been a public statement of what they were already doing. The water company in the area concurred with this view, although they did consider there to have been benefits in terms of the prioritisation of schemes.

- **Challenges relating specifically to two-tier areas.** Some LLFAs in two-tier areas referred to challenges in engaging with lower-tier councils in strategy preparation. Reference was made to the political challenges of engaging with numerous different authorities and also to resource constraints at lower-tier level, which was reported to have hindered their engagement in some cases. One county LLFA stated that the sheer scale of the geographic area their strategy needed to cover was a major challenge and had precluded a detailed approach.
- **Maintaining a focus on risk.** Whilst one of the key outcomes of local flood risk management strategies has been a greater focus on risk (see section 4.1.6), some stakeholders suggested that maintaining a focus on risk rather than on events was a challenge in a local authority setting because of political and public pressure to focus on areas affected by incidents.

We've had the modelling so we know where the risks are, but a lot of the time until they flood there's not a lot we can do about it, because it doesn't become high on the political agenda. Although we put it on our medium term plan, when we've got properties that are flooding elsewhere in the city then they'll have priority at the moment (LLFA 13 LLFA lead).

A range of other challenges were identified related to collaboration and data sharing between risk management authorities in the preparation of strategies. These are discussed in more detail in the relevant sections later in this report.

4.1.8 Summary of findings

Prior to 2010 there was limited understanding of the extent and nature of flood risk from local sources. The approach to managing risks from such sources was inconsistent, with only a minority of councils proactively managing these risks.

The FWMA requirement to produce local flood risk management strategies has led to a more comprehensive understanding of local flood risk and to more proactive and coordinated management of this risk. There is anecdotal evidence that actions implemented as a result of local flood risk management strategies being developed have reduced flood risk. Many more measures identified in these strategies will be implemented in future years, leading to further risks being addressed. The development of local flood risk management strategies has also generated widespread perceived benefits in terms of improved collaboration between risk management authorities and to improved prioritisation of action to address local flood risk. The latter represents a shift for most LLFA areas from a focus on responding to events and areas affected by events, to a focus on areas at greatest risk, although it should be noted that maintaining this focus remains challenging in some areas.

Nevertheless, the evidence from this research suggests that inconsistencies remain. A significant percentage (41% as at April 2015) of LLFAs have not yet published their strategy. Whilst most strategies are consistent with statutory requirements, a considerable number of them are weak in terms of identifying the costs and benefits of the measures proposed. Evidence from the case studies suggests that in a small number of cases, data on costs and benefits was deliberately not included in the strategy, e.g., because it was felt that data could become out of date. However, in other cases, LLFAs admitted struggling with developing this data. The importance of understanding costs and benefits of measures in terms of securing funding, suggests that the absence of this data may undermine LLFAs' ability to deliver their strategy commitments in future.

LLFAs and their delivery partners reported that a number of factors have hindered the production of strategies, but limitations in the resource available, often exacerbated by the need to respond to flooding incidents, have been by far the most significant. Strategy preparation appears to have been more challenging in some two-tier areas, due particularly to the extra level of engagement required.

Where strategy preparation has gone well, adequate resourcing has been an important enabling factor and those LLFAs which had retained drainage teams or had flood risk management staff already in place in 2010 were at an advantage (fewer than one third of LLFAs who responded to the telephone survey had 2 or more FTEs working on flood risk management in 2010). Added value has also been gained from working closely with other risk management authorities and from seeing

flood risk management in its wider context, particularly drawing on the links with planning, economic development and regeneration.

4.2 Flood investigations (section 19)

4.2.1 Pre-2010 baseline

Prior to the FWMA, investigation of flooding was sometimes undertaken, mostly by lower-tier and unitary local authorities (drainage authorities). An LGA survey (2008) found 48% of councils who responded¹¹ were undertaking investigations and recording all flooding incidents prior to the commencement of the Act. The largest proportion undertaking this function were the metropolitan districts and unitary authorities. The lower-tier authorities formed a significant contribution to this function with 48% undertaking investigations and recording of flooding incidents. The extent of what these investigations covered was not explored in the LGA survey.

The assumed baseline situation, supported by evidence from the case studies, is that the extent of these investigations was inconsistent across authorities and the results rarely made public or shared with other risk management authorities. Whilst a significant percentage of councils investigated flooding incidents, surface water flooding was often not investigated as there was no clarity on the responsibility for this type of flooding. The Pitt Review (Pitt, 2008) identified that where sources of flooding were uncertain or multiple sources were responsible, risk management authorities did not work together to solve issues with no one authority taking the lead. The lack of clarity in responsibilities hindered the resolution of flooding problems.

Under section 19 of the FWMA, on becoming aware of a flood in its area, a LLFA must, to the extent that it considers it necessary or appropriate, investigate:

- Which risk management authorities have relevant flood risk management functions; and
- Whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.

Where an authority carries out a section 19 investigation, it must:

- Publish the results of its investigation; and
- Notify any relevant risk management authorities.

¹¹ The survey had a response rate of 66.2% (257 of 388 local authorities in England).

4.2.2 Outputs

Presence of publicly available section 19 policies

All respondents to the telephone survey were asked if the LLFA had a publicly available policy on undertaking investigations under section 19. 62% [n=66] said that they did and 35% [n=38] said that they did not¹² (3% [n=3] did not know). Where they did [n=66], this was almost always available through the council website, though a small proportion (10% [n=7]) said that it was only available on request, whilst 5% [n=4] did not know where it was published.

When all 152 LLFAs' websites were reviewed to identify publicly available investigation reports and policies for undertaking section 19 investigations, only 47% (n=72) of all 152 LLFAs had policies available which set out when a section 19 flood investigation will be undertaken, whether those were published on their websites or set out within the local flood risk management strategy. This suggests either some over-reporting of section 19 policies in the telephone survey or that the policies are not readily accessible on LLFA websites.

Thresholds for section 19 investigations

The outputs review found that 96% (n=69) of LLFAs specified thresholds for triggering a section 19 investigation, with 85% (n=61) of these including number of properties flooded as the key criteria. The threshold number of properties varied from a range of one to six properties suffering from internal flooding. Based on evidence from the case studies, a common threshold is five or more properties suffering internal flooding.

Publication of section 19 investigations

The outputs review found a total of 337 section 19 reports published on LLFA websites.

All respondents to the telephone survey were asked whether their LLFA had carried out any flood investigations under Section 19. 64% [n=68] had done so whilst 36% [n=39] had not.

Because of the variations in the criteria and thresholds used and the variable distribution of flooding events across the country, the number of investigations carried out by LLFAs varies enormously. The case studies included a significant number of LLFAs who had not yet carried out any section 19 investigations, through to one LLFA which had carried out an estimated 200 investigations.

¹² Due to the options available for the question, it was not clear whether a negative response meant that they did not have a policy *at all* or that they had one but it was not publically available.

The telephone survey found that, of those that had carried out section 19 investigations [n=68], 59% [n=40] had published the findings of these on their website. This is broadly consistent with the outputs review, which found that 30% (n=45) of all LLFAs had published investigations.

Of the remainder of those in the telephone survey who said they had carried out investigations, 39% [n=27] had not published and 2% (one LLFA) were not sure. Where LLFAs had not published [n=27], there was generally no intention to do so, though a third [n=9] said that they would be publishing and a further six said that the investigations could be provided upon request.

Those case study LLFAs which had carried out section 19 investigations but had not published their report(s), were asked about the reasons for non-publication. In two cases, this was due to technical difficulties associated with the LLFA's website. In another case, publication had simply been delayed by resource pressures and in a further case, the LLFA was awaiting details of a grant scheme, so that this could be included in the report. In only one case did the reasons for non-publication appear to be substantive. In this case, the delay to publication was being caused by concern about the sign-off process within the council, including the legal team, communications team and cabinet. The LLFA lead was concerned to ensure that the report was 'on firm ground' from all of these angles prior to publication. Concerns about the potential use and impact of section 19 reports are discussed further in section 4.2.5.

Content of section 19 investigations¹³

In the outputs review, where LLFAs had published multiple flood investigation reports, one report was selected at random for inclusion, based on the assumption that the reports for the same authority are likely to follow a similar format.

The review found that:

- In 98% [n=44] of all reviewed reports the risk management authority with relevant flood risk management functions was identified;
- 84% [n=38] identified whether the risk management authority has exercised or is proposing to exercise their functions;
- All [n=45] reports reviewed identified the cause of the flooding incident;
- The review looked at whether the reports identified solutions. It was not always clear if a solution to the problem was identified and in many cases, the

¹³ Defra has commissioned an independent review of the causes of flooding events that Lead Local Flood Authorities (LLFA) have assessed under Section 19 of the Floods and Water Management Act 2010 (FWMA).

investigation reports highlighted that further action was necessary in order to identify a solution. Therefore, the results of the review for this indicator are not considered to provide a useful indication of the extent to which investigations identified solutions; and

- 89% [n=40] identified actions to resolve the problem, 73% [n=33] allocated these to a relevant risk management authority, with 20% [n=9] identifying a timeframe for delivery of those actions.

Whilst the above would suggest a good deal of consistency in terms of the content of section 19 investigations, the case study findings suggest that there are wide variations in the level of detail included within that content. Those with low thresholds and high incidence of flooding incidents reported that they were, out of necessity, investigating incidents in less detail than some other LLFAs. One LLFA reported they were undertaking very detailed investigations. They were taking 18-24 months to produce the reports and the EA described them as a 'Rolls Royce' approach compared to reports by other LLFAs.

Notification of outcomes of section 19 investigations

The FWMA requires LLFAs to notify relevant risk management authorities of the outcomes of section 19 investigations. There is general compliance with this. Where they had carried out section 19 investigations [n=68], 94% [n=64] of telephone survey respondents said that they always notify the relevant risk management authority of the outcome; 3% [n=2] said that they sometimes do this and 3% [n=2] said that they have not done this.

4.2.3 Success factors

As noted above, a range of different approaches have been adopted to section 19 investigations. Where LLFAs considered the process to have worked well, there appears to have been two key factors which enabled this. Firstly, working effectively and collaboratively with other parties, such as the water company, EA and, where relevant, lower-tier councils and the IDB. This allowed a clearer understanding of the issues to be gained, as well as enabling the identification of workable solutions and maintaining positive relationships.

Secondly, linking investigation to action. A number of LLFAs reported their section 19 investigations being important in informing their strategy and in providing evidence for funding bids for flood risk management schemes.

Local flood risk management in practice - 4

LLFA 10 is currently developing an incident management database product which allows anyone (e.g. the public or flood wardens) to put data on flooding incidents into a proforma, to enable it to be collected quickly. They are currently testing this for the DCLG repair and renew grant, ensuring that anyone applying for a grant is also providing information on flooding. The database is also being shared regionally.

4.2.4 Benefits

Case study stakeholders were asked whether they considered the system for flood investigations to be an effective way of building a greater understanding of risks and responding to them appropriately. The majority, across all stakeholder groups, thought that it was. In addition to understanding risks and developing responses, a number of other benefits were cited, including:

Local flood risk management in practice - 5

LLFA 4 is packaging together schemes identified in its section 19 reports in order to make them more feasible for funding under Defra's 'small schemes' fund. 4-5 packages have been created from the 17 section 19 reports they have published to date.

- Providing reassurance to affected communities and council members that incidents have been investigated and action identified;

If you've been flooded you want to know why and will it happen again, and [through a section 19 report] we can offer assurances that we've done this, that and the other, and it was x, y and z fault, it's in a report that has been accepted by all the stakeholders, they've all had comments prior to it being published, it wasn't just a 'this is what I think', it was a collaboration between all parties in all instances (LLFA 28 LLFA lead).

- Providing evidence to help secure funding for schemes;
- One water company representative highlighted the usefulness of section 19 reports in terms of informing flood plans for their assets;
- One LRF representative reported that section 19 reports had been useful in building the evidence base for surface water flood risks which, in turn, had enabled them to target their community resilience work more effectively; and
- One LLFA suggested that section 19 reports were an aid to homeowners and potential purchasers in terms of understanding flood risks in the context of selling and purchasing decisions¹⁴.

¹⁴ It is not clear whether the LLFA representative had been told by homeowners that they were being used for this purpose or if it was their opinion/assumption.

4.2.5 Challenges

The case studies identified a number of challenges related to section 19 investigations:

- **Inconsistency of approaches to carrying out investigations.** As already noted, there were variations across LLFAs in terms of the criteria and thresholds for triggering an investigation and the level of detail to which floods were investigated. Some stakeholders wanted to see greater consistency in the approach to investigations, whilst others expressed concern about the lack of investigations in some LLFAs, implying that not all significant floods were being investigated. One LLFA lead would have liked to have further guidance from Defra on the approach which should be taken.
- **Resource implications.** Some stakeholders expressed concerns that delivering section 19 investigations had been a significant drain on resources in some areas. In one case study, due to workload pressures the threshold for investigations was being ignored. Informal investigations were still being carried out but formal section 19 reports were not being published.

We do the investigations informally but we haven't really said this is a section 19 investigation, purely because of the amount of other work that has to be done on the back of it, whereas what we actually want to do is fix it (LLFA 27 LLFA lead).

One water company representative in another case study area suggested that the LLFA was tending towards an informal approach as a function of workload management. Another LLFA referred to one event having 'slipped by'.

- **Under-reporting of flooding incidents.** In a large number of LLFAs there was felt to be a problem with the public not always reporting flooding incidents, which was mainly thought to be due to concerns about potential impacts on insurance and house values. Some stakeholders suggested that this may also be caused by a lack of awareness amongst the public that floods should be reported and uncertainties about who to report the flood to. One EA representative questioned how the public would report a flood to an LLFA if it was outside office hours (and contrasted this with the EA's 24-hour call centre).
- **Public expectations.** Whilst section 19 investigations have brought benefits in terms of public communication (see section 4.2.4), they can also present challenges.

Local flood risk management in practice - 6

Recognising that section 19 reports take time to produce and that the public often want action more quickly, LLFA 7 has adopted a 2-stage approach to section 19 reports. Initial small-scale reports focus on self-resilience, i.e. what those affected can do to protect themselves from a similar event in the short term. This is then followed up with a much more detailed, in-depth investigation and report.

Time delays in publishing reports were reported to have led to public frustration in some cases. Linked to the point above about the complexity of some flood events, some case study interviewees reported that it is sometimes not possible to fully understand the cause of the flood or to identify a workable solution. Such incidents still need to be reported, however, and this can lead to public concern. In other cases, interviewees expressed concern that actions listed in section 19 reports may raise public expectations unduly. One LLFA suggested, for example, that the public may not appreciate the challenges associated with securing funding for actions identified in the reports. Another pointed to the fact that reports may recommend action by other parties over which the LLFA has no control.

- **Complexity of flood events.** A significant number of stakeholders highlighted the challenges associated with seeking to understand the causes of some flood events, due to the sometimes complex inter-relationships in the drainage network. This links to the points above about resource implications (complexity can lead to the investigation costing more and taking more time) and public expectations (flood events cannot always be fully understood or resolved).
- **Sensitivity of section 19 reports.** As already noted, in one LLFA concerns about the legal and public relations implications of section 19 reports had led to some delays in the reports being published. More widely, some case study stakeholders expressed concern about the sensitive nature of some section 19 reports and the challenges associated with managing the outcomes. One LLFA lead referred to them sometimes resulting in ‘the blame game’ whilst another referred to a section 19 report resulting in a series of insurance claims against the party which owned the asset deemed responsible for causing the flood. Some LLFA legal departments were reportedly concerned about section 19 reports.

And for whatever reason our Legal Department get very tetchy about Section 19 reports, and apportioning blame, and identifying sources and all the rest of it, so I'm not sure if we ever publish a Section 19 report again whether it would take the same form as the first one did. They still wave it in front of me going 'whoever wrote this shouldn't have!' (LLFA 27 LLFA lead).

One LLFA lead expressed concern about the risk of section 19 reports ‘souring’ relationships with other risk management authorities, suggesting that this had occurred in some places. There was evidence of this in one of the other case studies. Concerns about the content of section 19 reports were reported to be making at least one water company reluctant to share data when it is for a section 19 investigation.

Our issue that we've had with the water company is that as soon as I say it is for a Section 19 report they are less likely to provide me open and frank information. If I was to ring them up and say have you done such and such, and I don't mention it's a Section 19 report that we're doing, they're much more likely to be more open. And they've set in place their own methodologies for making sure that information isn't going to be used to their disadvantage, and that it's needed for that purpose, for that report; whereas we would hope that it would be an open book type of situation and it isn't. They actually have to get sanction from senior management to provide information when it's for a Section 19 report, because it's going to be a published document (LLFA 11 LLFA lead).

The issue of data sharing between risk management authorities is discussed further in section 5.2.3.

4.2.6 Summary of findings

Overall, the FWMA appears to have led to a step-change in the investigation of flooding incidents. Prior to 2010, investigation of flooding was patchy and inconsistent, particularly where surface water was the cause or where multiple sources were responsible. The results of investigations were rarely made public or shared between risk management authorities. As a result of the FWMA, most floods regarded as significant by LLFAs are now investigated and most investigations identify the risk management authority (or authorities) responsible, identify actions to resolve the problem and relevant risk management authorities are notified of the findings. This is reported to have helped build a greater understanding of risks and has, in many cases, enabled responses to be developed. In addition, the investigations and subsequent reports were reported by some stakeholders to have been important in providing reassurance to affected communities.

However, approaches to section 19 investigations vary between LLFAs. There are variations in the criteria and thresholds used for triggering investigations which, coupled with the variations in the incidence of flooding incidents, has led to huge variations in the numbers of investigations being carried out by LLFAs. Linked to this, the level of detail being applied to section 19 investigations is also reported to be inconsistent.

The extent and depth to which flooding incidents are being investigated may also be being hindered by under-reporting of flooding incidents by members of the public. This appears largely due to concerns about potential impacts on insurance premiums and/or house values, but may be being exacerbated by a lack of clarity about the need to report flooding incidents and which risk management authority they should be reported to. We have been unable to establish the extent of this

under-reporting. Further research would be required to understand the significance of this issue.

The resource constraints faced by some LLFAs appears to have affected approaches to section 19.

Challenges were also reported by a few case study stakeholders in terms of managing public expectations of what will happen as a result of the investigations and in managing the legal and relationship implications of attributing responsibility for flooding incidents.

4.3 Register of flood risk features (section 21)

4.3.1 Baseline

The Pitt Review (Pitt, 2008) identified an example of proactive asset management pre-FWMA, which was a reaction to the experience of serious flooding. Leeds City Council put in place a water asset management working group with an action plan and budget of approximately £1 million per annum to centralise the maintenance of the watercourses through a process of identifying and recording their location and condition to develop a maintenance regime (Pitt, 2008). This was set up following the serious flooding in 2005 and 2007. However, before the FWMA, there was no consistency in the recording of data on local flood risk assets. Collation of data for the purposes of flood risk assessment was unusual and not voluntary (Halcrow, 2008). Information on local drainage infrastructure was held by the lower-tier local authority (drainage authority), related to their responsibilities under the Land Drainage Act, but this was ad-hoc and inconsistent. Highway asset information, such as on highway culverts, gullies and drains, was more consistently held by the highway authority, but was unlikely to have been shared and used for the purposes of flood risk management.

From the LGA survey in 2008, the majority (85%) of local authorities responded that they had mapped or registered at least some of the local authority owned flood risk assets. 16% had mapped all and 30% had mapped some. The rate of mapping and registering was higher in lower tier councils than upper tier counties with nearly 50% of lower-tier councils having mapped or registered most or all compared to 28% of county councils. This is likely to be the result of lower-tier councils' drainage authority responsibilities.

Mapping and registering of water company and privately owned assets was much lower. 15% of all local authorities had mapped or registered water company-owned assets and only 7% for privately-owned assets.

The extent to which data on the condition of assets was recorded (for those local authorities that had recorded assets), the LGA survey indicated that around half of local authorities (48%) had assessed some of their own assets. Consistently recording asset conditions was more unusual with only 38% having undertaken condition assessments for all or most of their own assets, 10% for water company-owned assets, and 11% for privately owned assets (LGA, 2008).

Under section 21 of the FWMA, a LLFA must establish and maintain:

- A register of structures or features which, in the opinion of the authority, are likely to have a significant effect on a flood risk in its area; and
- A record of information about each of those structures or features including information about ownership and state of repair.

The LLFA must arrange for the register to be available for inspection at all reasonable times.

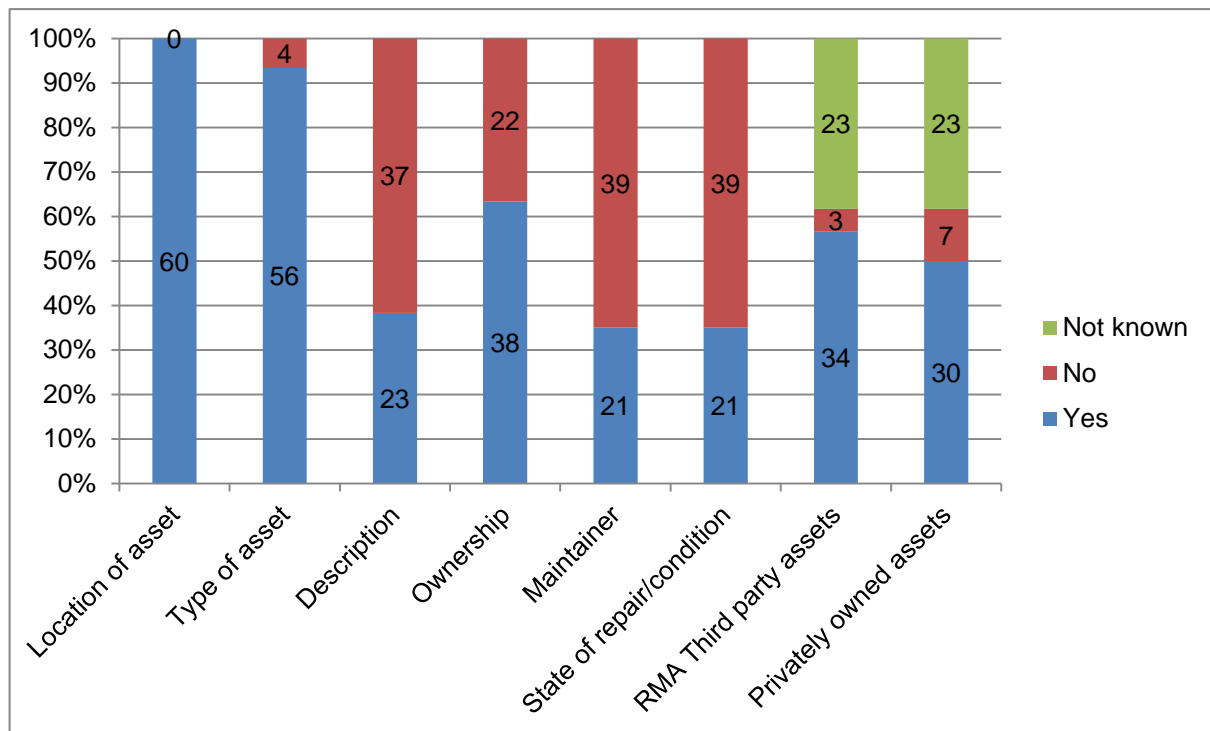
4.3.2 Outputs

All 152 LLFA websites were investigated to identify if an asset register had been made publicly available, or if information was made available on how the register could be accessed. A total number of 60 registers were accessed (39% of LLFAs) and subsequently reviewed. Data from the telephone survey and the Single Data List¹⁵ would suggest that more asset registers have been produced but they were not all accessible for the purposes of this review, as discussed in section 2.2.2.

The content of the reviewed asset registers is set out in Figure 4.5. All of the registers included the basic information of location and 93% [n=56] held information on asset type. Ownership was included within 63% [n=38] of registers and state of repair and condition assessment in 35% [n=21] of registers.

¹⁵ The single data list is a list of all the datasets that local government must submit to central government.

Figure 4.5: Content of asset registers for a sample of 60 reviewed asset registers



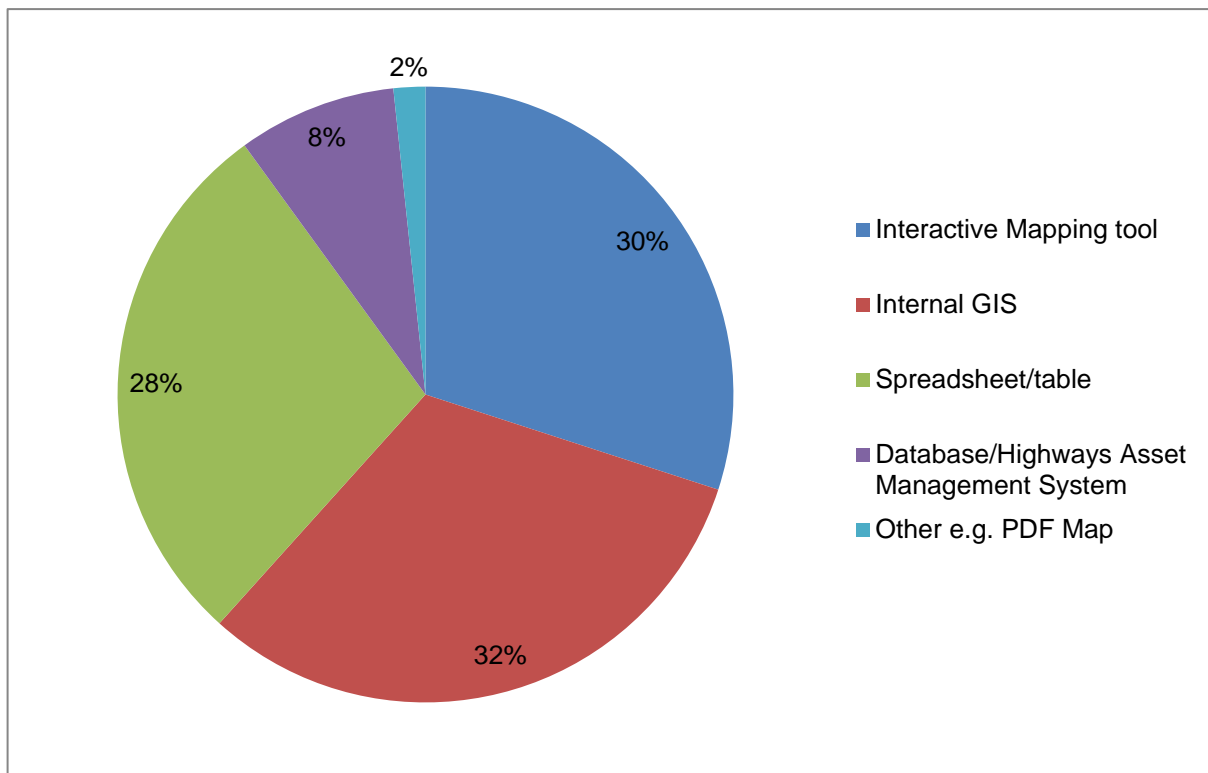
It should be noted that those registers which are freely available on websites had less information available than those requested for viewing as in the latter case the full internal register was shared. It should also be noted that those registers requested were in varying degrees of completeness and many were still under development.

Where ownership was not included within the publicly available information, it was not possible to assess whether third party assets were included (therefore a 'not known' response has been used).

22 LLFAs (14%) had links to their registers on their websites. A further 64 LLFAs (42%) (who, in the Single Data List, were listed as having published their asset register) were approached via email to share their registers. 42 were received. Four of those received did not provide sufficient information or were in an inaccessible format to undertake a review. 77% [n=17] of the registers accessed through a link on the websites were in the form of an interactive mapping tool whilst 45% [n=19] of those shared on request were from an internal GIS system.

Figure 4.6 sets out the format of all the registers received. It should be noted that some of the formats of registers that were shared were of a temporary nature whilst the register was being developed into a more formal system such as a specialist database or GIS system.

Figure 4.6: Format of reviewed asset registers (n=60).



The case study findings confirmed that there is variation in the format, content and scope of asset registers. Only one of the case study LLFAs had not prepared an asset register in any form but almost all considered their asset registers to be a work in progress and it was apparent that some were more progressed than others. There were examples of LLFAs who had invested considerable resources in mapping and investigating assets in their area, and drawing together data from historic records, whilst others had simply pulled together basic datasets held by the council, e.g., on highways assets.

4.3.3 Success factors

As already noted, the starting points for LLFAs in terms of their data on and knowledge of their local assets varied enormously. For those who held good data (in some cases developed as part of a surface water management plan) or retained good knowledge (e.g., where drainage teams had been retained), this was a key factor in enabling an asset register to be developed quickly and effectively.

Whilst software was a barrier for many (see section 4.3.5), some had overcome this challenge. One of the case study LLFAs reported successful use of Flood Station software for their asset register and we understand that this is used by a number of other LLFAs. In another LLFA a member of the team had been assigned with a tablet which was linked to the council's GIS software and had been commissioned to

survey all of the catchments in the area. Avoiding paper records was said to have increased efficiency.

4.3.4 Benefits

All case study stakeholders were asked whether they considered the asset register a useful and effective tool in the management of local flood risk. The majority either felt that it was or that it could be, subject to further development.

Stakeholders referred to examples of the asset registers being valuable, for example, in:

- Highlighting assets that were previously unknown;
- Highlighting assets which are problematic or in need of repair;
- Highlighting the need for maintenance work;
- Making flood investigation work easier;
- Commenting on planning applications and in providing pre-application planning advice;
- Responding to flooding incidents or severe weather warnings, through allowing easy identification of critical assets which need to be checked; and
- Documenting information on assets so that it is less reliant on the knowledge of individuals.

Many non-LLFA stakeholders also anticipated benefits from the presence of asset registers but in most cases they had not yet been realised due to the register not being shared or the register not yet being sufficiently developed to be of use.

4.3.5 Challenges

As outlined in the baseline section above (section 4.3.1) it is clear from the case studies that different LLFAs were at very different starting points in 2010 in terms of preparing their asset registers. Whilst asset registers have proved to be challenging in many circumstances, they appear to have been a particular challenge in two-tier areas. When normalised to take account of the unitary/two-tier ratio in the case study sample, most of the challenges cited in the case study findings related to two-tier situations, whilst all of those who cited benefits from the development of their asset register were from unitary authorities. The particular challenges faced by two-tier areas include:

- The fact that they did not previously have land drainage responsibilities and were therefore less likely than unitary authorities to hold data on drainage assets. In some cases LLFAs were able to access such data from lower-tier authorities but in other cases this has proved to be problematic, particularly in cases where drainage expertise at lower tier level was lost (see section 5.5.2); and
- Upper-tier authorities are more likely to cover very wide geographic areas, which can mean that there is a very large number of assets across a wide area which need to be taken account of.

The case studies highlighted a range of other challenges which were not specific to particularly types of local authority. These included:

- **Resourcing.** Many case study stakeholders cited the challenge of resourcing the work necessary to compile an asset register. The scale of the challenge is illustrated by one urban unitary LLFA which had set a target of mapping and assessing 75% of assets within the next 5 years, but did not feel that this was particularly realistic. Some local authorities had managed to secure significant funding for work on their asset register, e.g., one LLFA had spent £60-70,000 on CCTV work, another had spent £35,000 on consultant support to develop their register and another had secured local levy and FDGiA funding, alongside their own funding, for an authority-wide survey of all drainage assets. However, a considerable number of LLFAs had not secured resources for such work and had done far less in comparison, e.g., one LLFA was compiling asset data on an ad hoc basis as and when there was a flooding problem. The same LLFA confessed that they were hesitant about doing more than this because of a concern that finding out more about asset condition may lead to a bigger maintenance bill in future. Another LLFA also highlighted this quandary.

It's a Catch22 situation – we need to know about our assets to be able to obtain funding, but then if we find an asset is in poor condition, we need funding to fix it (LLFA 24 Other council officer).

A number of stakeholders also highlighted the resource challenges associated with keeping their asset register up-to-date.

- **Software issues.** A significant number of LLFAs reported issues with software for use in preparing and presenting their asset register. Some cited compatibility issues with the systems of other risk management authorities, which was constraining data sharing in some cases. Others had struggled to find suitable software for their register. One EA representative suggested that the EA's Asset Information and Management System (AIMS) could have been utilised by LLFAs and that this represented a missed opportunity. A particular

challenge cited by some was finding software which would allow online publication of the register. Most registers are only available to view on request within council offices. This challenge is apparent in the difficulty in accessing asset registers for review as part of this evaluation.

- **Commercial and other sensitivities of water company data.** This was reported to be hindering the sharing of data in some cases. This is discussed further in section 5.2.3.
- **Data quality.** Identifying ownership appears to have been a particular challenge in some areas. For example, in two of the case studies, the EA questioned the quality of data in the asset registers. In both cases they had incorrectly been identified as the owners of a large number of assets.

There are still quite a lot of things that are relatively unknown as to ownership though, and that's where we've struggled a little bit. There are a number of structures that we haven't yet been able to work out who has been responsible through Land Registry searches, legal advice even (LLFA 14 LLFA lead).

- **Uncertainty about the requirements.** Two case study LLFA lead officers suggested that they were uncertain about what was required for their asset register and stated that they would welcome further guidance from Defra. In one of these cases, a specific issue regarding what constitutes a 'significant asset' was highlighted.
- **Some questioning of the value of asset registers.** One LLFA questioned the added value of an asset register given the relatively small geographic area they covered and their existing knowledge of key assets. In another case, the requirement was said to have simply brought together in one place, data that was already held and being used. Another LLFA lead officer had not found the asset register useful because the LLFA had responsibility for very few assets in the area. Others questioned the value of asset registers in their current form but could appreciate their potential usefulness if further developed.

4.3.6 Summary of findings

Before the FWMA, there was no consistency in the recording of data on local flood risk assets. Collation of asset data by local authorities for the purposes of flood risk assessment was unusual. This was particularly true of data on non local authority-owned assets and data on the condition of assets. The requirement to produce an asset register is therefore a significant change and most stakeholders interviewed as part of this evaluation agreed that asset registers were, or in future could be, useful and effective tools in the management of local flood risk, e.g., through highlighting assets which are problematic or in need of repair, highlighting the need for

maintenance work, facilitating flood investigation work, allowing more effective input to planning applications and pre-application planning advice and helping in the response to flooding incidents or severe weather warnings. Some LLFAs have made very significant progress in setting up and populating their asset register, and are already benefiting from having done so.

However, fewer than half of LLFAs had published and were able to supply their asset register for this evaluation. Some LLFAs have not developed an asset register at all, others have very limited registers and most asset registers require considerable further work for them to become of use in the kinds of ways described above. Furthermore, little use is being made of asset registers by other risk management authorities.

As with the other statutory outputs, resourcing of asset registers is reported to have been a challenge and may preclude the perceived potential benefits of them being fully realised in future. This is particularly the case in two-tier areas where county councils have sometimes had to start from scratch because of the absence of land drainage responsibilities prior to the FWMA. Software issues and gaining access to commercially sensitive water company asset data have also been significant challenges. The latter is discussed further in section 5.2.5.

4.4 Consenting on ordinary watercourses (schedule 2)

4.4.1 Pre-2010 baseline

Prior to the FWMA, the EA had responsibility for consenting on main rivers and ordinary watercourses outside of an internal drainage area. IDBs had responsibility for consenting on ordinary watercourses within their remit. There was previously no role for local authorities in consenting on the ordinary watercourse network.

Anecdotally, enforcement of consents on ordinary watercourses may have been less than on main river as resources focused on the higher risk priority of main rivers. The EA may not have had a presence within the local area to readily identify activities that required enforcement. As lower-tier and unitary authorities were undertaking the drainage authority role, they are likely to have had a better local knowledge of the drainage network.

In contrast to the EA, IDBs had the local knowledge and held the accountability for watercourses within their area and that may have resulted in a more pro-active or thorough consenting process for ordinary watercourses.

Schedule 2 of the FWMA amended sections of the Land Drainage Act (1991) to transfer the regulatory powers of consenting and enforcement on ordinary

watercourses from the EA to LLFAs (section 23). Within internal drainage districts, the IDBs retained their existing powers. The transfer of the consenting role on ordinary watercourses was to ensure that accountability and processes fitted with the new arrangements for flood and coastal risk management elsewhere in the FWMA. The amendment also allows consents to be issued subject to reasonable conditions which may allow more works to be approved than could be the case where the only options were unconditional 'yes' or 'no' decisions.

4.4.2 Outputs

Publication of information on consenting

The websites of all 152 LLFAs in England were reviewed in December 2014 to identify available information on how to apply for consent for works on ordinary watercourses and their policy related to consentable works. 35% (n=53) were found to have information available on their websites on how to apply for consent (i.e. published application form and guidance notes) and 53% (n=80) had no information on, or mention of, how to apply for consent available. The remaining 12% (n=19) either provided contact details for interested parties wishing to discuss the consenting application process or linked to the risk management authority undertaking consenting on their behalf. Where no information was provided by a LLFA on their website, it was not possible to make a further assessment of their consenting role.

Policies on consenting

All respondents to the telephone survey were asked if their LLFA sets out clear criteria for types of work that require consenting under section 23 of the 1991 Land Drainage Act. 73% [n=78] said that they do, 21% [n=22] that they do not and 6% [n=7] did not know. Of LLFAs that have set out these criteria [n=73], 89% (65% of all LLFAs [n=46]) have made these publicly available on the council website. However, the outputs review found that only 18% (n=28) have published policies or specified works for consentable activities. These were usually in the form of illustrated cross-sections of types of consentable works derived from the EA policy.

Approach to consenting

In the outputs review it was difficult to determine from the publicly available information whether a standard or risk-based¹⁶ approach was being undertaken to consenting. However, evidence on the approach to assessment was gathered from

¹⁶ A standard approach would involve assessing all applications in the same way. A risk-based approach would adopt different levels of assessment according to the level of risk posed by the proposed works.

seven of the case studies¹⁷. Most (five) had adopted a standard approach, with the remaining two adopting a risk-based approach.

Level of staff resource committed to consenting role

Respondents to the telephone survey were asked if there is a member of staff within the LLFA or the delegated organisation responsible for enforcement of consents. 74% [n=79] said that there was; 21% [n=22] said not and 5% [n=6] did not know.

For the responsible individuals, on average¹⁸ around 10% of their working time was estimated to be spent on enforcement of consents. In most cases¹⁹ it was less than this.

Level of consenting activity

The case studies revealed variations in the levels of consenting activity taking place.

At least eight of the case study LLFAs had issued no consents, whilst others had dealt with very low numbers. Others were not categorical about the number of consents they had issued but inferred that very little consenting activity had taken place. In four cases this was due to the absence or limited length of ordinary watercourses in the LLFA area. A further LLFA had not dealt with the consenting role due to resource constraints and competing priorities. In the other cases, however, the reasons for the low level of consenting activity were less clear. One water company representative suggested that it may be due to some LLFAs wrongly categorising culverted ordinary watercourses as surface water sewers. Other stakeholders suggested that a lack of awareness about the need for consenting on the part of riparian owners was an issue.

A few LLFAs acknowledged that consentable activity could be taking place without consent. One LLFA, for example, estimated that less than 50% of works which require consent actually generate an application. However, little concern was expressed about this either by LLFA or non-LLFA stakeholders.

A small number of case study LLFAs were very active and had committed significant resource to the consenting role. One county council, for example, had employed two full time consenting officers.

¹⁷ In the other case studies, the approach was either not known or the question was not asked due to time constraints.

¹⁸ The average was affected by some outliers e.g. one LLFA that reported the enforcement of consents required a full-time officer.

¹⁹ In ten of the 79 LLFAs with an individual in principle responsible, 0% of their time has to date been spent on enforcement of consents.

4.4.3 Delegation of powers

Of the LLFAs included in the telephone survey, 10% [n=11] had delegated the consenting role to another organisation; 88% [n=94] had not and 2% [n=2] did not know. Where they have delegated this role [n=11], this was usually county councils delegating to the lower-tier councils; three LLFAs had delegated the role to IDBs and one to the EA. This low level of delegation was evident for other LLFA responsibilities as well.

Four of the case study LLFAs had delegated powers to others. These were:

- A unitary authority which had delegated consenting and enforcement to an IDB;
- A county council which had delegated consenting and enforcement to an IDB;
- A county council which had delegated consenting and enforcement to two consortia of lower-tier councils; and
- A county council which had delegated consenting to lower-tier councils, but carried out the legal side of any necessary enforcement themselves.

Local flood risk management in practice - 7

LLFA 1 has not delegated powers outside of the authority but has delegated the enforcement of consents to its environmental health officers. This was on the grounds that they are familiar with the enforcement role and can use their powers under the Environmental Health Act.

It was also found that in a further case study, the local flood risk management strategy included the principle that section 19 investigations could be undertaken on behalf of the LLFA by other risk management authorities. This had been activated once when a lower-tier council had been asked to conduct a section 19 investigation in 2014.

The perceived benefits and disbenefits of delegated powers and responsibilities identified by stakeholders in each of these cases are summarised in Table 4.1.

Table 4.1: Summary of perceived benefits and disbenefits of delegating powers

Powers delegated	Benefits	Disbenefits
Delegation of consenting and enforcement to an IDB by a unitary authority	Consenting and enforcement benefits from IDB expertise. Service level agreement ensures IDB are paid for their input. Seen as cost-effective	Leaves the LLFA out of pocket. IDB typically charges the LLFA £250 per consent for assessing each application, but the LLFA can only charge £50 to the applicant (although it should

	approach by LLFA.	be noted that some LLFAs reported significantly higher costs from carrying out the consenting in-house).
Delegation of consenting and enforcement to an IDB by a county council	Provides consistent approach to consenting and enforcement across the county. Benefits from proactive approach adopted by IDB, their expertise and their experience of engaging with landowners.	One of the lower-tier councils aggrieved that powers were not delegated to them.
Delegation of consenting and enforcement to two consortia of lower-tier councils by a county council	Lower-tier councils seen to be more aware of 'issues on the ground' and have more local knowledge. Has allowed closer working with planning departments. Has maintained engagement of lower-tiers in flood risk management.	Created potential for confusion regarding roles and responsibilities. Variation in skills and approaches amongst lower-tiers.
Delegation of consenting to lower-tier councils by a county council	Benefits from lower-tier councils' local knowledge and expertise on flood risk management, and their relationships with landowners. Has facilitated links between consenting and planning. Allowed lower-tier councils to retain drainage staff as the New Burdens funding was shared with them.	Not all lower-tier councils were as keen to take on the role. Variation in approaches by lower-tier councils. LLFA has limited resource for legal action.
Delegation of powers to carry out section 19 investigations to other risk management authorities by a county council	Can help to overcome resource constraints in the LLFA and utilise local knowledge.	May cause confusion regarding roles and responsibilities.

4.4.4 Success factors

Where consenting powers had been delegated to an IDB or lower-tier councils this was generally considered to have been successful by all of the stakeholders involved.

One of the reasons for delegation to lower-tier councils being successful was the ability to link the consenting and planning roles. More widely, this was considered to be important in carrying out consenting responsibilities as it allowed the

requirements for consenting to be promoted via the development control system and for issues to be resolved in advance of applications being submitted.

The importance of engaging with other risk management authorities was emphasised in other cases. Most LLFAs have not delegated consenting to IDBs or, in two-tier areas, to lower-tier councils. The benefit of the knowledge and expertise held by IDBs and lower-tier councils can therefore only be gained through consultation with them. One lower-tier council stakeholder praised the county council for consulting with them regarding consents, which allowed them to draw on their knowledge of local assets. Similarly, one IDB highlighted the importance of the LLFA consulting and sharing information on consents with them via a County Land Drainage Group.

A further benefit of delegating to lower-tier councils or IDBs is benefiting from their established relationships with landowners. One case study LLFA, similarly, had sought to utilise one of their parish council's relationships with local landowners. The LLFA is supporting the parish council in having conversations with the landowner to resolve concerns about watercourse management. This is reported to have worked well and LLFA is considering adopting a similar approach with other parish councils.

As noted above, only two LLFAs were identified as using a risk-based approach to consenting applications. However, one of them suggested that this approach was particularly helpful in managing the workload associated with consenting (see box).

4.4.5 Benefits

Case study stakeholders were asked whether they considered the system for consenting and enforcement to be an effective mechanism for managing activities that might have an adverse impact on flood risk from ordinary watercourses. Some stakeholders recognised the benefit of giving LLFAs responsibility for consenting, since it allowed their local knowledge to be utilised and provided the opportunity, at least in unitary authorities, for greater integration with the planning system. It is clear that in some cases, LLFAs or the authorities to whom they have delegated powers, are proactively managing activities which might affect flood risk from ordinary watercourses and view this role as extremely important. However, the varying degrees to which the consenting role has been taken up and the variation in approaches taken, led to a mix of views. Some viewed the role as superfluous because of a lack of consenting applications. In other cases, stakeholders

Local flood risk management in practice - 8

To help avoid the need for expensive enforcement, LLFA 26 has developed a Land Drainage Improvement Grant scheme. Landowners can apply for a small grant to undertake initial work on water courses at risk of flooding, and in return sign an agreement that they will maintain it going forward.

could see a theoretical benefit but the lack of LLFA action meant that this had not been realised.

4.4.6 Challenges

As already noted, resource constraints have meant that a small number of case study LLFAs had effectively not taken on their consenting role. The case study interviews found that resource constraints have been an issue more widely and a key factor in this, cited by many case study stakeholders, was the fee level for consenting applications. The £50 fee was considered to be insufficient to cover costs, which were variously estimated to be from £250 to £700 per consent.

Local flood risk management in practice - 9

LLFA 10 takes a risk-based approach to consenting applications. They have a scoring mechanism for assessing the potential flood risk consequence of the application. If it is low, no consent is required or a very light-touch approach adopted.

The £50 fee is a loss leader. I think we've estimated probably between £600 and £700, it's about 12 hours to do it properly by the time you've consulted. Realistically between £600 and £700, it's about 12 man hours to do it properly, and again the setup we have we're a trading account, so we don't have a budget as such we've a target to make. We recharge our fees, so our recharge rate for an engineer is about £40 an hour. The £50 application fee is gone in the first hour effectively (LLFA 28 LLFA lead).

Some stakeholders, both within and outside LLFAs, expressed concern about the level to which compliance with consenting applications were being checked. A significant number of LLFAs stated that they did not check for compliance.

Enforcement was reported to be challenging by a number of LLFAs. This links back to the resources issue, with LLFAs reporting limited access to legal input. One IDB also stated that resource constraints made enforcement difficult for them.

Some stakeholders expressed concern about LLFAs' capability to carry out the consenting role. A contrast was made with the EA's capability, including their access to expertise in areas such as water quality and biodiversity. The suggestion was that LLFAs may struggle with complex consenting applications and that consenting may be dealt with in a less holistic fashion.

Where an LLFA has an IDB in their area, the consenting and enforcement powers in the internal drainage district were retained by the IDB. In most cases this division of responsibilities does not appear to have led to any issues and, as in the previous section, some LLFAs have delegated all consenting in the LLFA area to an IDB.

However, one LLFA reported the situation to have caused some confusion on the part of developers.

4.4.7 Summary of findings

Prior to the FWMA, the EA had responsibility for consenting on main rivers and ordinary watercourses outside of an internal drainage area. Anecdotal evidence suggests that less attention was paid to ordinary watercourses, as resources were focused on the higher risk priority of main rivers. IDBs had responsibility for consenting on ordinary watercourses within their remit. There was previously no role for local authorities in consenting on the ordinary watercourse network.

In some cases, LLFAs or the authorities to whom they have delegated powers, are reportedly utilising the consenting function to proactively manage activities which might affect flood risk from ordinary watercourses and view this role as extremely important. In such cases, giving LLFAs responsibility for consenting on ordinary watercourses outside of internal drainage districts, appears to have generated significant benefits. It has allowed their local knowledge to be utilised and provided the opportunity, at least in unitary authorities, for greater integration with the planning system.

There is a variation in approaches, levels of consenting activity and levels of resources committed to the consenting role, including some LLFAs who have effectively not taken up this role. Resourcing of consents has proved to be challenging for all, particularly because of the cap on fees. In addition, even where proactive approaches to consenting have been adopted, LLFAs have found it difficult to effectively resource compliance checks and subsequent enforcement where necessary.

4.5 Byelaws and works powers

4.5.1 Pre-2010 baseline

Prior to the FWMA, IDBs, lower-tier local authorities and unitary local authorities had general drainage powers under section 14 of the Land Drainage Act. This gave them powers to carry out works on a watercourse in their district other than main rivers to maintain, improve or construct new works. In addition, they could undertake works on watercourses outside of their district in order to benefit the district.

IDBs and lower-tier local authorities also had the power under section 66 of the Land Drainage Act 1991 to make byelaws 'for the purpose of preventing flooding or remedying or mitigating any damage caused by flooding'. English county councils were exempt from this power pre-FWMA. This was revised in the Act to fit with the

new arrangements. Schedule 2 of the FWMA amended sections of the Land Drainage Act (1991) to:

- Allow all local authorities to make land drainage byelaws for the purpose of preventing flooding or remedying or mitigating any damage caused by flooding (section 66)²⁰; and
- Provide the LLFA with powers to do works to manage flood risk from surface runoff and groundwater.

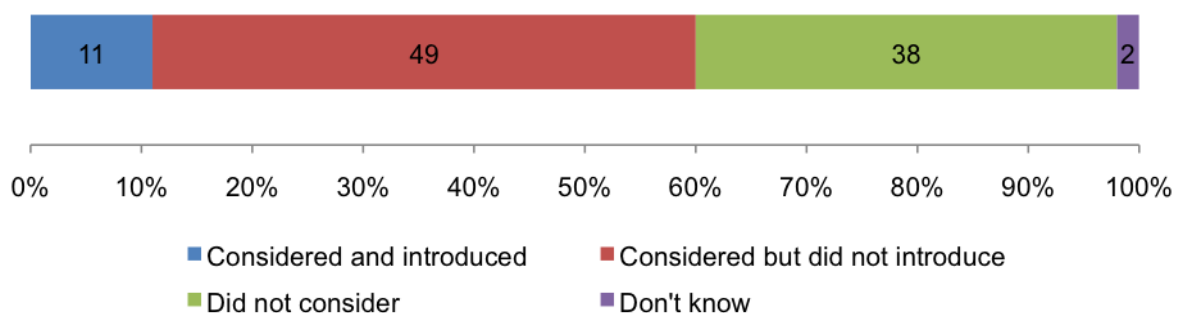
The powers enable lower-tier and unitary local authorities and IDBs to undertake works to address flood risk from ordinary watercourses.

4.5.2 Outputs

Byelaws

All telephone survey respondents were asked whether, since the Act, their LLFA had considered controlling through byelaws any activities being undertaken in the area that related to flood risk or flood risk management. As shown in Figure 4.7, whilst more than half had considered introducing byelaws, and around a tenth claimed that they had introduced them (discussed further below).

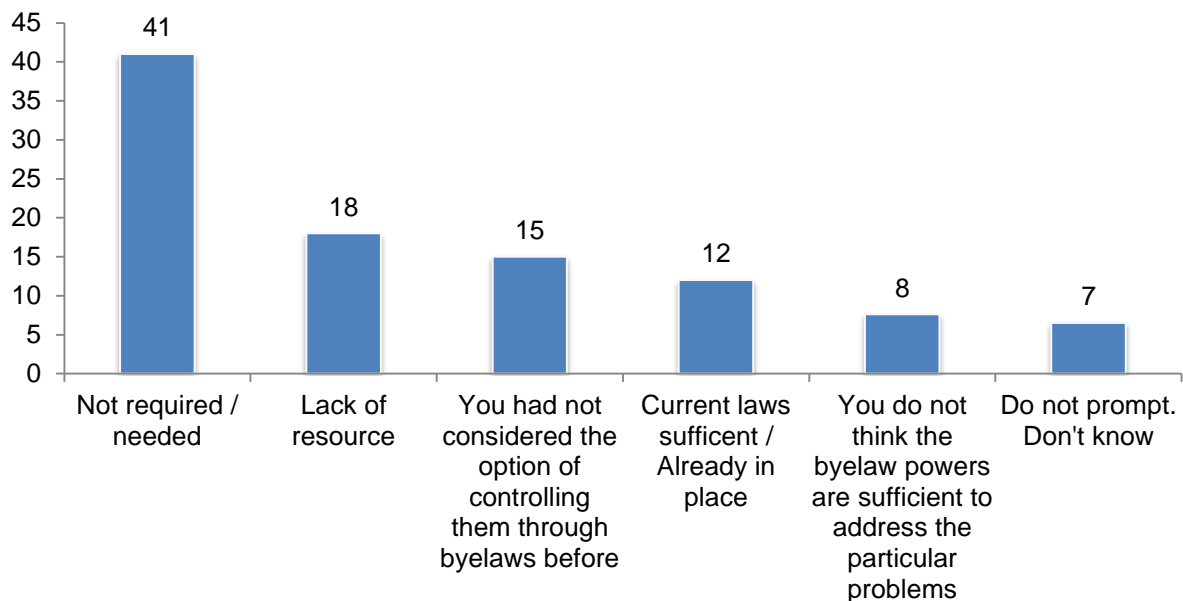
Figure 4.7: “Since the 2010 Act, has your LLFA considered controlling through byelaws any activities being undertaken in your area that relate to flood risk or flood risk management?” [n=107]



Where they had decided not to use byelaws [n=51], or had not considered doing so [n=41], LLFAs were asked why not.

²⁰ There are differences between byelaw-making powers for unitary LLFAs and county LLFAs, as explained in appendix E.

Figure 4.8: “Since the 2010 Act, has your LLFA considered controlling through byelaws any activities being undertaken in your area that relate to flood risk or flood risk management? If not, why not?” [n=92]



The most common reason given was that no need for byelaws had arisen. Several stated that their area had not experienced a significant issue whilst others felt that the current laws in place were sufficient for their needs.

Some respondents had either not considered the idea or had considered it but dismissed it due to perceptions of the resource byelaws might require in both formation and enforcement.

Byelaws must be confirmed by Defra before they can come into effect. There appeared to be a discrepancy between the number of LLFAs who claimed to have made byelaws and the number which had been confirmed by Defra. The case studies therefore sought to explore the reasons for this. The case studies included two examples of LLFAs who claimed to have made byelaws under the FWMA. In one case, the LLFA explained that they had historic byelaws relating to watercourses. In the other, the LLFA claimed to have effectively adopted the IDB’s byelaws by delegating the consenting role to them, but the IDB recognised that unless the LLFA made these byelaws themselves they would not be legally enforceable outside the IDB area.

It would therefore appear that very few LLFAs have made byelaws since the introduction of the FWMA. On the basis of the case study evidence, and the few requests to Defra for confirmation of byelaws, those LLFAs that claimed to have introduced them in the telephone survey are likely to have been mistaken. Nevertheless, although the majority of case study LLFAs were not considering

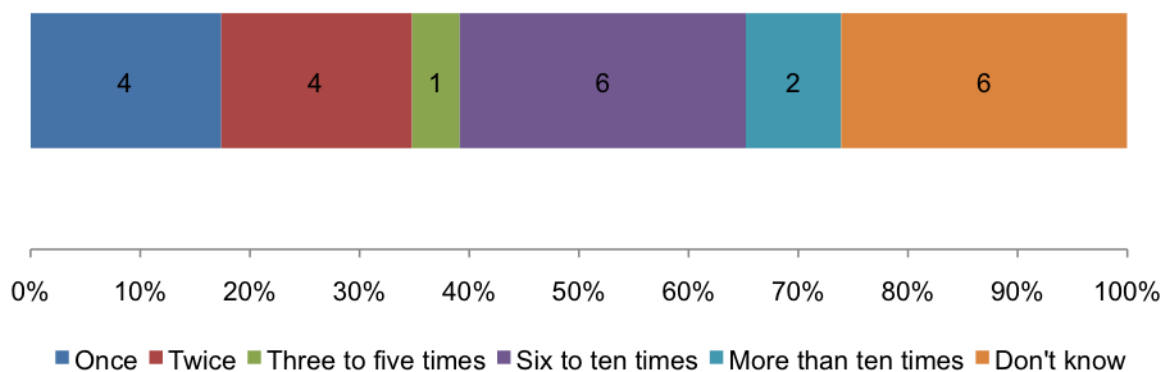
adopting byelaws, a minority said they planned to do so, including one LLFA which had included the adoption of byelaws in its local flood risk management strategy.

Works powers

All telephone survey respondents were reminded of powers for LLFAs to carry out flood risk management works (as per section 14A of the 1991 Land Drainage Act) and asked how many times their LLFA has used these works powers²¹.

78% [n=84] said that these powers had never been used. Where the powers had been used [n=23], the extent varied considerably, as shown in Figure 4.9.

Figure 4.9: “There are powers for LLFAs to carry out flood risk management works. How many times has your LLFA used these works powers?” [n=23]



About half of this group [n=10] had used the powers in conjunction with another risk management authority.

The same group [n=23] were asked to what extent they agreed that the powers arising from the Schedule 2 amendments of the 1991 Land Drainage Act are sufficient for their needs. The group was fairly evenly split, with six agreeing, six being neutral / of mixed opinion, and five disagreeing (the remaining six did not know).

During the analysis of evaluation findings it became apparent that there may have been some confusion about the question of works powers. LLFAs who have implemented flood risk management schemes have effectively made use of these powers in doing so, and some may have recognised this when responding to the telephone survey. However, the question was intended to explore the use of works powers for carrying out urgent works to rectify flood risk issues, including on land

²¹ The powers cover the maintenance of existing watercourse or drainage works, improvement of works and construction of new works.

owned by others. It is likely that most respondents to the telephone survey and case studies will have interpreted it this way.

4.5.3 Discussion and summary

The powers to create byelaws and the powers to carry out works (except in the case of flood risk management schemes) appear to have been little used to date by LLFAs. Nevertheless the value in having these powers was recognised by many stakeholders.

In the case of byelaws, the telephone survey revealed that more than half of LLFAs had considered introducing byelaws and the case study findings suggested that a small number are actively pursuing this. Other LLFAs recognised the potential usefulness of byelaws, particularly in controlling development close to or adjacent to ordinary watercourses, and had not ruled out adopting byelaws in future. In the longer term, the impact of the introduction of these powers looks likely to become more significant.

Some confusion seems to exist. Two county councils included in the case studies did not think that county councils were in a position to adopt byelaws and that this could only be done by lower-tier councils. Over 10% of LLFAs in the telephone survey suggested that they had made byelaws, although confirmation had not been sought. This suggests a degree of general misunderstanding about the process to make and confirm byelaws.

In the case of works powers, it was clear from the case studies that amongst many LLFAs there is a reluctance to make use of these powers due to the perceived risks involved. However, the fact that the majority of LLFAs have not made use of them may be somewhat misleading. A significant number of case study LLFAs suggested that whilst these powers had not been formally used, they had been referred to in negotiations with landowners about getting necessary works done and were reported to be an effective negotiating tool.

We use works powers to get in and carry out works against... Land Drainage Act... but we use the fear of it more! (LLFA 30 LLFA lead)

5. Local flood risk management in practice

This chapter sets out the findings from the evaluation in relation to the practice of local flood risk management beyond the statutory responsibilities introduced by the FWMA.

5.1 Partnership working

5.1.1 Pre-2010 baseline

Early examples of partnership working for the purposes of managing flood risk can be found during the development of related plans and strategies such as during the early development of surface water management plans (pilots undertaken in 2008) and the integrated urban drainage pilot studies undertaken in 2007 (Halcrow, 2008) (see Table 5.1 for locations).

An early example of partnership working to devise pragmatic drainage solutions is the Marston Vale Surface Waters Plan produced in 2001 by the Bedford Group of Drainage Boards and Forest of Marston Vale. This was in response to a proposed large-scale development (Halcrow, 2008).

All local planning authorities were required to produce strategic flood risk assessments under Planning Policy Statement 25. During a survey into the review of strategic flood risk assessments (Defra and Environment Agency, 2009), almost all of the local authority and EA practitioners interviewed stated that relationships between key stakeholders had improved as a result of the creation of the strategic flood risk assessments, particularly between local authorities and the EA. In contrast, partnership working and sharing of information with water companies was inconsistent and limited. In two-tier authorities however, these partnerships would have been established at the lower-tier level rather than the LLFA level. This is reinforced by the findings of the LGA survey (2008) in which most respondents stated that they were involved in a variety of partnerships but most commonly the LRF (87%) (being a requirement of the Civil Contingencies Act since 2004), in comparison to 56% with arrangements with water companies. The LRF and EA partnerships were rated as being productive (75% and 76% respectively stating very or fairly productive) compared to 35% finding water company partnerships productive.

Partnerships were established during the integrated urban drainage pilot studies. The success of the partnership was dependent on the individuals involved in the partnership, rather than being dependent on which was the lead authority. In some areas, the complexity of local government organisation and the non-alignment of

catchments with administrative boundaries resulted in involvement of a large number of organisations (Halcrow, 2008).

As a result of these studies, a number of challenges to partnership working were identified in the flood risk management context pre-FWMA (Halcrow, 2008):

- Data and models were sometimes poor and not available or fit-for-purpose, which could result in incomplete or misleading flood risk assessments;
- Current institutional arrangements and responsibilities could make it very difficult to coordinate and fund an integrated series of cross stakeholder improvements;
- Many surface water flood risk problems are endemic to urban areas. The benefits of an integrated approach may take many years to be realised; and
- Skills required to carry out integrated urban drainage management were in short supply, especially in local authorities.

Table 5.1: Areas where integrated urban drainage studies and surface water management plan pilots were undertaken pre-FWMA

Integrated urban drainage pilots (2008)	Surface water management plan pilots (January – October 2009)
<ul style="list-style-type: none"> • River Aire - Bradford Metropolitan District Council • Brent North (Wealdstone Brook) - Thames Water • Camborne, Pool and Redruth - Kerrier District Council • Forest of Marston Vale, Bedford - Bedfordshire and River Ivel Internal Drainage Board • Hartlepool - Northumbrian Water • River Hogsmill, Surrey - Environment Agency, Thames Region • Lewes - Black & Veatch Ltd on behalf of Lewes Integrated Urban Drainage Steering Group • Lincoln City Area - Environment Agency, Anglian Region • Lower Irwell Valley, Salford - United Utilities • North Gosforth - Environment Agency, North East Region • Poringland - South Norfolk Council • Telford and Wrekin - Borough of Telford and Wrekin • Torbay - Environment Agency, South West Region • Upper Rea, Birmingham - Birmingham City Council • West Garforth, Leeds - Leeds City Council 	<ul style="list-style-type: none"> • Gloucestershire • Hull • Leeds • Richmond and Kingston • Thatcham • Warrington

Under section 13 of the FWMA, risk management authorities must co-operate and share information with other risk management authorities in the exercise of their flood and coastal erosion risk management functions.

5.1.2 Collaboration in the production of local flood risk management strategies

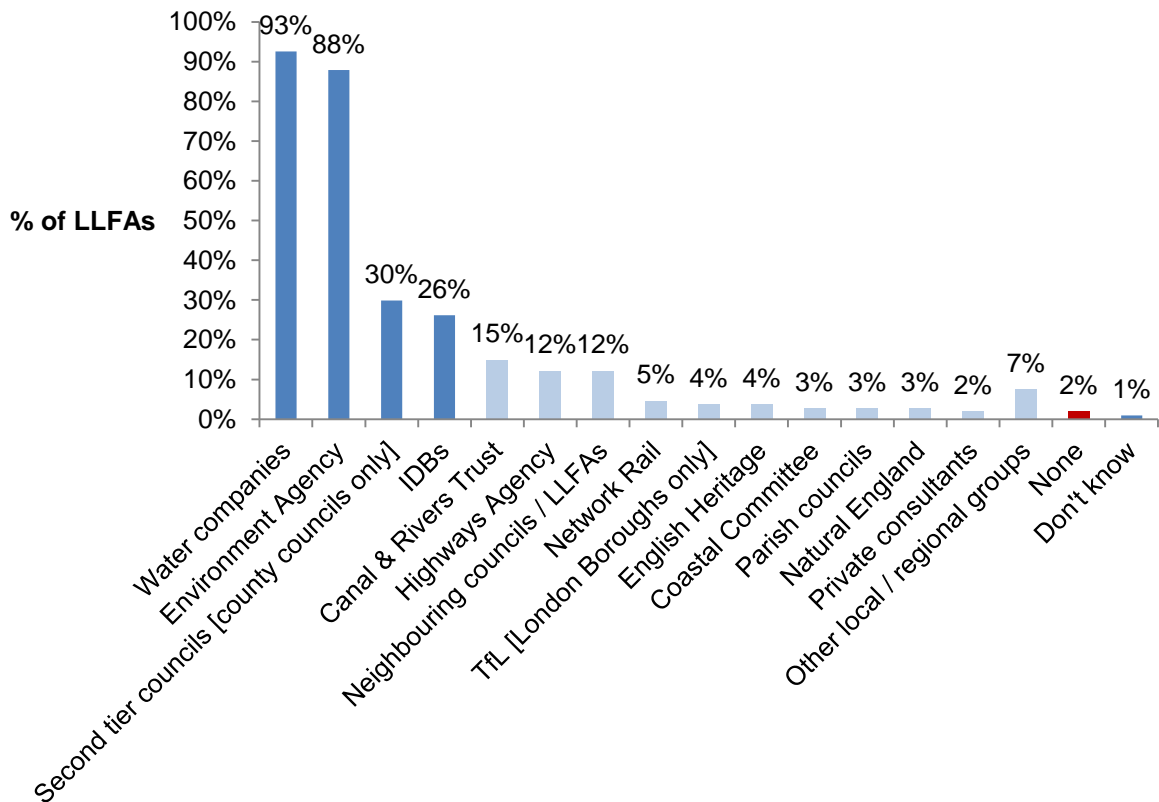
Organisations involved in strategy preparation

In the telephone survey, LLFAs were prompted with a list of organisations that may have been involved in the preparation of their local flood risk management strategy. The proportion of LLFAs involving each organisation is shown in Figure 5.1. The bars in dark blue show the options which were prompted; bars in light blue reflect responses that were given when respondents were asked if there were “any other” organisations involved.

The percentages for the latter group may therefore underestimate the involvement of those organisations across the LLFA population, either through (a) limitations on respondent recall; (b) respondent preconceptions as to which organisation types the survey was interested in; and (c) respondent preconceptions as to what constitutes an organisation being “involved” in the preparation of the strategy.

It is also important to note that a large proportion of LLFAs have not yet published their local flood risk management strategy, so the percentages for organisations below may still increase.

Figure 5.1: “Which of the following organisations have been involved in the preparation of the local flood risk management strategy?” [n=107].



‘Other local/regional groups’ were mentioned by only one respondent. These included the local fire authority, an academic institution, and a “community resilience group”.

Nature of engagement

A small minority of case study LLFAs had not engaged with any external parties in developing their strategies. In other cases, the nature of engagement with partners varied from simply sending out drafts for comment, to holding workshops on key issues for the strategy, to regular engagement through formal mechanisms such as working groups, partnership groups and networking groups. In a few cases, the EA were particularly closely involved through the secondment of staff into the LLFA to assist with strategy development.

In the telephone survey, for all the organisations cited as having been involved in the local flood risk management strategy preparation, respondents were asked if the LLFA continues to have meetings with them. In 82% of cases [n=85] the respondent reported that their LLFA continues to meet all such organisations and 17% [n=18] said that the LLFA continues to meet ‘some’. 1% (one LLFA) does not meet any.

In 84% of cases where meetings still occur [base of n=103], the respondent felt that these could be defined as fixed and formal. For the remainder, the respondents felt that they were more ad hoc as need arises. The case studies revealed that much of this ongoing liaison between organisations occurs through formal working arrangements such as working groups and partnership groups. In some cases, such groups pre-dated the FWMA.

Success factors

The case studies highlighted a number of factors which enabled effective strategy development, including:

- **Early engagement.** Where stakeholders were consulted early in the process of strategy development, this was welcomed;
- **Ongoing engagement.** Non-LLFA stakeholders generally welcomed the opportunity to engage at various stages of the process. Formal joint working arrangements appear to have been particularly useful in this regard;

To be blunt it forces you to work with these people, you do know them, they're colleagues but it is sometimes easy to just work in isolation. But just having that formal mechanism of the strategic group that we're part of, you don't always have to be there for all of the business obviously, being copied into emails and documents. Yes it has helped. It has been a very positive outcome for us (LLFA 16 LRF).

- **Interactive engagement.** Workshops appear to have been widely utilised and were generally seen as having been successful. One LLFA held a series of 6-7 'task and finish' groups with other risk management authorities.
- **Cross-boundary engagement.** A significant number of case study LLFAs had engaged with neighbouring authorities as part of their strategy development, in some cases facilitated by the RFCC or sub-regional groups. This appears to have been beneficial in some cases, both in terms of enabling joined-up approaches within catchments which cross LLFA boundaries and also in terms of sharing good practice and learning between LLFAs. One case study LLFA had adopted a catchment-based approach to their strategy, i.e., structuring their strategy around the different catchments within the LLFA areas, which they suggested had allowed more effective alignment with key partners such as the water company and EA.
- **Commitment to joint working.** The 'spirit' in which engagement took place appears to have been key in some cases, particularly a willingness to understand each others' roles and ways of working and a clear recognition that flood risk can only properly be addressed in partnership.

We did it as a joint production right from the start; it never became a purely county council strategy – it was always a joint vision (LLFA12 LLFA lead).

Benefits

The principal benefit arising from the collaboration which has taken place on strategy development is in terms of providing a focus or a catalyst for joint working more widely, including on action to address issues identified in the strategy. This outcome was reported in a number of the case studies.

In the past, we tried to work alone and pointed the finger at others; this [the strategy] has definitely brought us together. There is a feeling that we need to work together to solve issues. Flooding can rarely be attributed to one organisation (LLFA 10 water company).

Examples were given of joint action which had resulted from the engagement in strategy development, including specific flood risk management schemes and community resilience work. One LLFA highlighted how important the strategy process had been in terms of aligning the priorities and funding plans of different risk management authorities.

One of its biggest advantages is that it's helped us to align [named city's] flood risk priorities with those priorities of the other flood risk management authorities, most notable [Named] Water. Obviously [Named] Water have their own agenda for looking at sewerage related improvements, sewerage and bathing water related improvements in [named city], and what we have been able to do...is to align priorities between ourselves, [Named] Water and the Environment Agency, so that we can deliver multiple benefits. We're not just delivering sewerage related benefits, or we're not just delivering main river benefits, we're delivering multi-party benefits effectively. And obviously that has the advantage in that from a funding point of view you've got multi-party contributions coming into that scheme (LLFA18 LLFA lead).

The strategy making process, in some cases, enabled links to be made between organisations which had previously not engaged with one another. In a number of cases, these were links between IDBs and other organisations.

As result of strategy we are talking to players we weren't talking to before (LLFA 25 IDB).

In more than one case, the strategy process had catalysed wider engagement beyond the risk management authorities. LLFA 10 reported that they had engaged town and parish town councils in the strategy process and this had led to the engagement of communities in flood risk management, e.g., in helping to maintain a watercourse.

Challenges

Where the success factors listed above were not adopted this presented challenges in some cases. For example, some stakeholders complained about being engaged too late in the process. Another felt that not considering cross-boundary issues undermined the effectiveness of strategies. Other challenges identified included:

- **Engagement with the water companies.** A few LLFAs reported difficulties in engaging with water companies. One simply suggested that they had difficulty in getting the water company to attend meetings. In two cases, the LLFA was frustrated at the difficulty in accessing water company data for use in their strategy (see section 5.2.3). In a further case, the water company expressed frustration that their comments had not been taken on board by the LLFA.
- **Engagement with lower-tier councils.** This was highlighted as a challenge in a couple of case studies. One suggested that there were political tensions between the county and some lower-tier local authorities. Another reported that the level of willingness and ability amongst lower-tier councils to engage varied, an issue which is explored in more detail in section 5.1.3.
- **Engagement with the EA.** In the majority of cases, the involvement of the EA in strategy preparation was perceived to be positive and helpful. However, in a minority of cases, issues were raised about EA involvement. One LLFA suggested that they felt 'constantly monitored' by the EA, whilst a stakeholder in another area suggested that the EA was not flexible enough in understanding and engaging with local issues and priorities.

5.1.3 Wider partnership working

Success factors

The case studies highlighted a number of factors which were significant in enabling partnership working more widely, i.e. beyond strategy preparation:

- **Formal structures.** A significant number of case study stakeholders pointed to the importance of having formal structures in place for engagement between partners. These often included separate structures for strategic and operational matters and, where this was the case, this separation was seen to be beneficial. In some cases the structures being utilised were established prior to the FWMA, e.g., Making Space for Water groups established by the EA, but there was a clear sense that the FWMA had led to these structures being further developed or provided with further impetus.

Formal structures appear to have been particularly important in two-tier settings where there is an extra layer of organisations to engage.

We've got a [named county] Flood Risk Partnership Group, and that's never happened before where you've got all the risk management authorities sitting round the table on a regular basis to share information, how we can work better, all related to what's come out of the Act. That's been a huge benefit really. With the partnerships there's a level of representation there at a management level where we can actually influence things to ultimately get things done on the ground, to reduce the flood risk of the properties which is what we're all about really (LLFA 9 LLFA).

- **Regional and sub-regional groups or networks.**

As already noted, these have been important in terms of sharing learning and good practice but they have also been important in facilitating closer working between partners. In some cases, these networks are supported by staff (e.g., funded through the local levy) and these staff have played an important role in some cases in promoting partnership working.

- **Attitudes and relationships.**

There were a whole series of comments from case study stakeholders relating to the attitudes of the individuals involved and the nature of relationships. Reference was made for example to the importance of a 'can-do attitude' and not sticking rigidly to lines of responsibility. Openness and honesty were highlighted by some as being crucial to building trust between partners.

Local flood risk management in practice - 10

In one county council case study where all stakeholders referred to the success of the structures in place, a strategic group had been established, with senior representation from the LLFA, one district council, the EA and the water company. The strategic group feeds into the RFCC on a quarterly basis. There is also a working group, involving engineers from the districts and other organisations. The main structure for joint working with district councils had been in place since before the FWMA, in the form of making space for water groups, which continue to meet quarterly but are now run by the LLFA rather than the EA.

Underneath them there are also community action groups, also established by the EA but now run by the LLFA. There is also engagement with the local committees in the county council structure. This was reported to have been important in maintaining engagement with councillors.

We have formal communications but we also have very good relationships and that helps. We spend time with them, getting to know each other. This is important. It allows a degree of openness and honesty (LLFA 9 water company).

- **Responding to flooding incidents.** In two case studies, the occurrence of flooding incidents acted as a spur to closer collaboration between risk management authorities.
- **Partnership funding.** A small number of stakeholders suggested that the change to a partnership funding model (discussed further in section 6.1) acted as a trigger for closer partnership working.
- **Recognition of benefits.** It was apparent from some of the responses in the case study interviews that some stakeholders had gone through a period of transition over recent years in terms of their commitment to partnership working. This was particularly the case with some of the water companies, who were said to have increasingly recognised the operational and reputational benefits of working in partnership with others. This was acknowledged by some of the water company stakeholders.

As a business we can see the benefits of partnership working... if we can get somebody else to pay for something that we should be doing, fine, let's go and make the effort guys. Why wouldn't you? And to a certain extent that was driving us initially, but we're now in shall we say a slightly more mature position where, okay you still have to pay for stuff maybe but your reputation is enhanced if you're able to demonstrate you're working with other people, and that brings added benefits, especially from a customer point of view. And if they see us, the EA, the Local Authority, whoever, all sitting at the same top table in the public meeting saying the same things, it enhances all our reputations (LLFA 7 water company).

Some water company stakeholders suggested that this had been driven further by regulatory changes affecting them, particularly the drainage strategy framework, which places requirements on them in terms of keeping groundwater and surface water out of the sewerage network.

Clarity of roles and responsibilities

One of the intended outcomes of the FWMA was that it would lead to a greater understanding of roles and responsibilities in relation to local flood risk management and that, as a result, stakeholders and the public would be more resilient. The case studies explored the extent to which the FWMA had led to a greater understanding of roles and responsibilities amongst both stakeholders and the public.

There was a general consensus that the FWMA had helped to clarify roles and responsibilities amongst stakeholders. A minority disagreed. These were primarily from lower-tier councils or water companies. As highlighted above, there were some

issues in engaging these organisations in partnership working, which may explain this finding.

The improvement among stakeholders in their understanding of roles and responsibilities was seen by many to be an important outcome of the Act. In some cases, it had been cemented by memoranda of understanding between the risk management authorities. In other cases, it had gone beyond clarifying lines of responsibility to a more collaborative approach where specific lines of responsibility were seen to be less important.

The FWMA has changed [the LLFA's] attitude and ours too. Previously, the first question we would have asked after an event is 'was it main river or not?' Now it doesn't come up. They just take the lead and lead a combined approach. They are the delivery arm for schemes, including some on main rivers - there's a scheme ongoing at the moment (LLFA 11 EA).

However, two main concerns or reservations were expressed in this context. The first, already noted, was about the grey areas in terms of responsibilities for individual parts of the drainage network or flood risk management assets. Often this related to the interactions between surface water and the sewer network. The situation was summed up by one stakeholder as 'less duplication but more gaps', i.e. broad areas of responsibility are clearer but there are more uncertainties regarding responsibility for individual assets.

The second was about lower-tier councils, and a perception amongst some stakeholders that these councils were not always clear about their continued roles and responsibilities. This was seen to be exacerbated by resource constraints, which meant that some lower-tier councils have no remaining staff with experience in this field.

There was a consensus that, despite considerable efforts on the part of some LLFAs, the FWMA had had no material impact on the level of public understanding of roles and responsibilities²². Some stakeholders, in fact, suggested that the FWMA, by introducing a further body with flood risk responsibility, had made it more challenging for the public to understand who does what. For example, a significant number of stakeholders reported confusion amongst the public about who to call in the event of a flood and one suggested that the FWMA may have made this particular issue worse.

You can, and people did, go round the loop several times, and in a distressing situation people don't care whether it's an ordinary watercourse, surface water

²² As already noted, no research with the public was carried out as part of this evaluation so this cannot be verified.

or fluvial, and often it's a mixture of all of those anyway. How can you distinguish, and you're asking the public to make that distinction in who to call? Pitt was trying to get away from people being passed around and that still happens, possibly to a greater extent because people have defined roles. We're told [by our own management] 'You don't pick that up, because that's not our responsibility. We're not funded to do that.' (LLFA 4 LLFA lead)

The only exception to this was communities in areas which had been subject to flooding incidents and/or major flood risk-related projects. Defra Pathfinder schemes, for example, were highlighted as being effective in educating the public about roles and responsibilities and what to do in the event of a flood.

However, many went on to say that they do not think that this general lack of any change in the level of public understanding mattered. Many felt it far more important from a public perspective that the different risk management authorities were working together effectively, and suggested that the Act had been very positive in this regard. In that sense, improved partnership working implies less of a need for a clear public understanding of roles and responsibilities.

The public don't care where the water comes from they just want it stopped (LLFA 21 LLFA lead)

They [the public] just see it as water which is flooding their property and they expect the authority to deal with that. So I think trying to make it more easily understandable and was the Act's aim, I am not sure that's quite worked, but it's certainly enabled us to work better with all the risk management authorities to try and deliver things in partnership, rather than everybody working in their individual silos and just concentrating on what they are duty-bound to deal with (LLFA 9 LLFA lead).

Other benefits

The extent of effective partnership working was clearly very variable but where it has emerged, there have been knock-on benefits for flood risk management.

As observed in the previous section, where genuine partnership working has emerged, this has obviated the need to some extent for one of the other intended outcomes of the FWMA – improved public understanding of roles and responsibilities.

It was suggested that more action is being taken as a result of partners working together. For example, one stakeholder in a case study where all stakeholders praised the extent and level of partnership working, suggested that partners now sit down and collectively agree schemes and seek funding for them in situations which, prior to the Act, they would have looked at things individually and concluded they couldn't do anything about it.

Some stakeholders also perceived there to be greater efficiencies as a result of partnership working. For example, one stakeholder suggested that collaborative solutions were delivering more for the same amount of money. Another stakeholder spoke of the progression towards delivering more holistic schemes, with multiple benefits.

Challenges and constraints

Establishing effective partnership working has clearly proved to be challenging in many areas. Key challenges include:

- **Tensions over roles and responsibilities.** Most commonly, the tensions between partners related to the involvement of water companies, although many stakeholders also suggested they had very positive working relationships with the water companies, particularly in more recent years. However, there were also tensions between the EA and LLFAs in some cases. In one case, the tension was caused by differences in opinion about approaches to addressing flood risk between the LLFA and the water company. In others, stakeholders cited a lack of understanding of the roles of different organisations and the fact that different organisations have different drivers. For example, LLFAs expressing frustration at the EA not appreciating the political pressures that they have to work with and water companies expressing frustration about LLFAs not appreciating their commercial and regulatory drivers.

Most commonly, however, the tension was brought about by disputes over responsibility for particular incidents or assets, something which may be exacerbated by resource challenges (see the next bullet). This included LLFAs reporting that water companies were reluctant to take responsibility for certain assets because of concerns about costs. As an example, in one case there was a disagreement about the ownership of an asset which had been at fault in a recent flood incident. The LLFA argued that the asset was a sewer, whilst the water company argued that it was a culverted watercourse. The LLFA was getting legal advice on the matter. In the meantime, they decided to carry out works in the asset in any case, in order to prevent any future flood occurrences.

So we've stepped in and we said we will spend money and at least try and get the [Name] up to a condition that we know would prevent or minimise any flood risk. But as I said, moving forward, we still need to try and establish who owns what and how every party deals with whatever asset that they own (LLFA 6 LLFA lead).

A number of stakeholders pointed to tension brought about by the EA pulling back from managing certain assets and passing responsibility to riparian

owners. This was seen to be placing increased pressure on LLFAs in some cases.

People go 'that's not our responsibility'. For example, the EA are pulling back, saying surface water and ground water are not our responsibility. Water companies say 'it's ground water' even though there is sewage all over the road (LLFA 4 LLFA lead).

On riparian responsibilities, there has been a shift in the EA's approach as they can do less on main rivers, and are nudging things onto riparian owners, which then nudges in our direction. The EA will hint to people living in an area that it's a riparian ownership issue, but they haven't necessarily come to the LLFA to say what should be done. There are still some tensions with the EA (LLFA24 LLFA).

- **Resource challenges.** Many stakeholders reportedly struggled to find resources to engage with partners. In some cases this was felt to be exacerbated by complex structures used by LLFAs, which suggests the need for caution when establishing formal structures. A number of stakeholders also referred to increasing resource constraints being faced by the EA, which was reported to have limited their ability to engage. In addition, the restructuring which has taken place within the EA to create the partnerships and strategic overview teams, whilst felt to be positive by some, was said to have disrupted some pre-existing relationships between key individuals.
- **Conflicting boundaries.** A number of stakeholders expressed frustration that the key agencies were working within different geographic boundaries. This had hindered the ability to align strategies and funding and was also said to have exacerbated the resource challenges. One water company pointed out that they cover 22 LLFAs, whilst one group of IDBs, for example, suggested that they were struggling to resource engagement with the 14 LLFAs in their area.

Here we deal with I think, fourteen different local authorities as a one Drainage Board group, so I can fill up my diary going to LLFA meetings. It's very inefficient as far as we're concerned in that respect, because they're all covering their political boundaries not the catchment boundary (IDB).

- **Engaging with lower-tier councils.** As already noted, political tensions and a lack of resource for flood risk management at lower-tier council level, was a constraint on lower-tier councils engaging in flood risk management work in some cases.

- **Engaging beyond the ‘usual suspects’.** Most partnership working has involved the LLFAs, the EA, water companies and, where relevant, lower-tier councils and IDBs. Some LLFA and non-LLFA stakeholders expressed a desire to engage more widely, such as with Natural England, who were seen to be important in terms of rural land use issues which might impact on flood risk, and with LEPs in terms of forging links between flood risk management and economic growth. Examples of engaging with such groups were relatively isolated and some stakeholders expressed frustration about this. In one London case study, the LLFA found it challenging to engage Transport for London and Network Rail in addressing flood risks relating to their networks and suggested that flood risk management was not a sufficiently high priority for such bodies.

5.1.4 Summary of findings

Partnership working between local authorities and the EA was already well established prior to the FWMA, but partnership working with the water companies was limited and inconsistent. Generally speaking, the FWMA appears to have led to significant progression in the levels of partnership working between LLFAs, the EA and water companies, as well as IDBs and lower-tier councils where relevant.

Collaboration between risk management authorities in the preparation of local flood risk management strategies has been a catalyst for wider engagement and joint working. This has proven particularly successful where formal structures have been established for engagement between partners, but it has also been dependent on the attitudes of the individuals involved and their ability to build relationships of trust with partner agencies.

Although relations remain problematic in some areas, in some cases, and particularly in more recent years, the evidence from the case studies suggests that there has been an increase in the level of engagement between water companies and other risk management authorities in most LLFA areas. This has been driven by a growing recognition amongst the water companies of the operational and reputational benefits of partnership working, as well as regulatory changes which have incentivised engagement with partners.

However, challenges to partnership working remain. Most commonly, these arise from tensions between partners over the responsibility for assets or flooding incidents, e.g., distinguishing between culverted watercourses and surface water sewers, and also where there are problematic interactions between different parts of the drainage network, (e.g., surface water from roads exacerbating sewer flooding). It is apparent from such challenges that the drainage network is often so complex and closely inter-related that strictly defining roles and responsibilities is not necessarily the ideal outcome. Rather, what is needed, and what appears to have

happened in a small number of cases, is a collaborative approach in which all parties trust one another and recognise the self-interest in working together to resolve issues.

Where successful partnership working has emerged, evidence from the case studies suggests that it has generated significant benefits. Anecdotal evidence suggests that it has led to more flood risk management schemes being delivered, including in situations where individual organisations could not have delivered an effective solution, and schemes being more holistic in their approach, delivering a wider range of benefits.

5.2 Data and information sharing

5.2.1 Baseline

During the integrated urban drainage pilots, information and data was shared easily, although in many cases data was insufficient, unreliable and out of date. Sometimes commercial or licensing arrangements made sharing difficult (Halcrow, 2008). There was caution on the part of water companies around sharing information that might be inaccurate or misleading and in some circumstances memoranda of understanding were developed to overcome this (Halcrow, 2008). A lack of consistent approaches for capturing and/or sharing data was highlighted as a limitation in the strategic flood risk assessment process (Defra and Environment Agency, 2009).

During the development of strategic flood risk assessments, many local authority planners reported that water companies had been reluctant to provide inputs into the studies, other than the provision of flooding history data from the DG5 register (which only reports records of historical sewer flooding) (Defra and Environment Agency, 2009). Water companies faced particular difficulties in working with sufficient flexibility to support partnerships, largely owing to commercial and regulatory restrictions (NAO, 2011).

As identified in the Integrated Urban Drainage report (Halcrow, 2008), the complex institutional arrangements in urban drainage and surface water management made data sharing and collation of flooding data to understand flood mechanisms unusual and unlikely to occur on a voluntary basis.

Evidence from the Pitt Review (Pitt, 2008) identified examples of burdensome and unfocused data requests in relation to surface water management plans. In an extreme example, following local authority requests for information from a water company, eight months elapsed until information was provided and the local authority incurred additional costs of £31,700 in trying to make up for sewer model data not received.

Under section 13 of the FWMA, risk management authorities must co-operate and share information with other risk management authorities in the exercise of their flood and coastal erosion risk management functions. In addition, under section 14, LLFAs may request a person to provide information in connection with the authorities flood and coastal risk management functions.

5.2.2 Outputs

The majority of LLFAs considered there to have been an increase in data and information sharing, both within LLFAs and between risk management authorities.

91% of all telephone survey respondents [n=97] agreed that the FWMA had led to more sharing of data and information between different council departments.

91% of all telephone survey respondents [n=98] also agreed that the FWMA had led to more sharing of data and information between different risk management authorities.

5.2.3 Success factors

One of the challenges identified in sharing data between risk management authorities was the sensitivity of some data from the water companies (this is discussed in section 5.2.5). To help overcome this, the use of data sharing agreements or data sharing protocols between LLFAs, water companies and, in some cases, other risk management authorities, was found to be relatively common. In one case an agreement had been established at a regional level, including multiple LLFAs, the water company and the EA.

Although only referred to in one case study, one water company representative also welcomed the use of formal data requests in line with section 14 of the Act. This was felt to have given a clear understanding of the data required, the reasons for the request and the timescales required for a response. They also stated that such requests are less easy to put to one side.

A significant number of LLFAs suggested that the sharing of data and information by the water companies had improved in recent years. Some suggested a 'culture shift' had taken place. The FWMA was seen to have been important in this, but public pressure arising from flooding incidents was also cited as a factor. More than one LLFA also suggested that new OFWAT settlements were a factor in this, which they suggested had led the water companies to be more outward-focused in their approach.

There's a culture of thinking in the current [Named] water company team around sustainable drainage and land management that is very open, very outward-facing, and looking to be positive about how they would actually

represent the company working with partners. So I think that's improved dramatically in the last four or five years (LLFA 29 LLFA lead).

Many LLFAs suggested that the EA had been particularly good at sharing data. Some suggested that this had been engendered by work which preceded the FWMA, such as strategic flood risk assessments.

Joint modelling studies have been particularly successful in some cases. One LLFA had investigated and modelled the entire drainage network in their area, in conjunction with the EA and the water company. This was found to have generated benefits for all parties.

It was apparent that, in some ways, improved sharing of data and information was a natural extension of improvements in partnership working. One case study LLFA referred to regular exchanges of data and information via workshops and via operational teams sharing their knowledge of assets and past events.

Local flood risk management in practice - 11

One LLFA, in conjunction with other risk management authorities, has used historic data to create a comprehensive database for 1,700 'floodspots' in their area. Each is prioritised according to their potential level of impact. The prioritisation uses cost-benefit tools. The database also lists the prominent source of flooding, and this information is used to identify a risk management authority lead for addressing issues for each of the

5.2.4 Benefits

Not only was there broad consensus that the FWMA had led to increased sharing of data and information, there was also a consensus in a significant number of the case studies that this had led to greater accuracy and effectiveness in the management of local flood risk.

Other benefits were highlighted in the case studies. In a few case studies, stakeholders referred to the improved understanding of the sources of flooding, which can aid both the response to and investigation of a flooding incident.

If we get a call saying there's flooding on the road we can establish whether it's a block in our highways gulleys, or whether it might be a problem with the water company. So we can work with them and have some knowledge going into the conversation, rather than just guessing what's going on (LLFA 26 LLFA lead).

Other stakeholders referred to the benefits in terms of more effective targeting of resources, for instance, through identifying areas most at risk.

In some cases, the benefits extended beyond the LLFA team to other council departments, particularly emergency planning.

It's worked well for us because the benefit to us is the information we gain which informs our response planning, and I know the information is probably gathered for other reasons... but it has informed our response planning (LLFA 16 LRF).

And in other cases, other risk management authorities said they had benefited from the increased sharing of data and information. For example, one water company referred to a hydraulic modelling study they were doing which was making use of sewer records provided by the LLFA. In two other cases, risk management authorities were developing large-scale integrated urban drainage models using combined data. In both cases, stakeholders suggested that this would lead to important improvements in flood risk management.

5.2.5 Challenges

Case study findings suggest data and information sharing was more challenging in two-tier areas. In the case studies, the challenges cited more commonly related to two-tier areas, whilst the cited benefits more commonly related to unitary councils. This appeared to be due to the challenge faced by some county councils in extracting drainage data from lower-tier councils.

Across both unitary and two-tier areas, many of the cited challenges related to gaining access to data from the water companies. A number of reasons were suggested for this, including:

- LLFAs often wanted to get DG5²³ and other data from water companies at the level of individual properties, but water companies were concerned about the customer confidentiality issues of data at this level;

Local flood risk management in practice - 12

One water company supplies extracts from their sewer flooding history database in a truncated format (i.e. not property-specific but area-specific). They recognise that LLFAs sometimes need more detail, so they offer them the opportunity to come in and have a look at data that they hold, on the agreement that that isn't formally recognised within any report.

I sought legal advice from our internal legal group around if an LLFA are insistent on receiving that [property-level] information, what should we do? And our legal group advised that we would have to write to everybody whose information was being requested, and advise them of that request, and then advise that they should contact the requester to

²³ Properties at risk of flooding from sewers due to hydraulic overload are recorded on a water company's DG5 register and this is based on flooding events that have actually occurred.

ask what it is that they're planning on doing with that information. That's what the best practice was, so that's the line that I normally give. Nobody's pushed it that far (LLFA 6 Water company)

They are often unable to release detailed information. It comes up at almost every meeting. They only supply details up to postcode level whereas the LLFA need to know about individual properties. They are fearful of being seen as blighting properties. I understand their position but it restricts the usefulness of their data a lot. It's a big challenge (LLFA 14 EA).

- The data held by the water companies was considered to have been costly to develop and to have financial value so, in some cases, the water companies were reluctant to release the data freely;
- Providing data for the purpose of section 19 reports was considered to have been particularly problematic in some cases. Water companies were concerned about being apportioned responsibility for flooding incidents in these reports; and
- There were concerns about maintaining control of how the data would be interpreted by third parties once the data had been shared.

What we've said is that [modelling data] should be used by risk management authorities and not used by developers, and that's been a source of tension I think... So if we were to share our model with the local authorities, which we do, and then that model gets handed over to the developer... we would still want to make sure that the developer was coming to us to talk to us about the capacity of our systems. So it's not just a revenue thing, it's also are they talking to the right people about the capacity of our network i.e. are they talking to us about it? Rather than making interpretations from our information (LLFA 8 water company).

More general challenges to the sharing of data and information, included:

- Technical issues. For example, incompatibility of software, data being recorded in different formats; and
- Issues about how widely the data was being shared. Some stakeholders expressed frustration that, whilst they were aware of more data being shared by others, they were being excluded from this. For example, in some case studies, emergency planning teams had access to and were making use of the data being gathered by the LLFA. In others, the emergency planners bemoaned the lack of access to it. In another case study, the EA were

frustrated at their lack of access to data from a hydraulic model, which had been developed by the LLFA and the water company.

5.2.6 Summary of findings

Prior to the FWMA, sharing and collation of data and information for the purposes of local flood risk management was unusual and unlikely to occur on a voluntary basis.

The evaluation evidence suggests that FWMA has led to an increase in data and information sharing both within LLFAs and between risk management authorities. This is particularly the case where close partnership has been established. Stakeholders in many of the case study areas suggested that increased data sharing has led to greater accuracy and effectiveness in the management of local flood risk. It also appears to have played a critical role in delivering the requirements of the Act, particularly local flood risk management strategies, asset registers and section 19 investigations.

Commercial sensitivities continue to restrict the sharing of water company data in some areas, but in others the use of data sharing agreements or protocols has facilitated such data being freely shared.

5.3 Continuation of pre-Act powers and responsibilities

Defra were keen to establish from the evaluation whether there had been any unintended consequences of the Act in terms of how other stakeholders subsequently exercised their related responsibilities. Specifically, the evaluation sought to establish the extent to which:

- Within internal drainage districts, IDBs had continued their consenting and enforcement role on ordinary watercourses;
- IDBs and lower tier authorities had continued to exercise their permissive powers for works on ordinary watercourses;
- Local highway authorities had continued to exercise their responsibilities for the management of local highway drains; and
- Water companies had continued to exercise their responsibilities for public surface water sewers and drains.

As shown in the logic model (Appendix C), delivery of the intended outcomes was partly dependent on these functions continuing to be performed following the introduction of the FWMA.

A significant number of stakeholders suggested that the Act had resulted in no change to the exercising of these powers and responsibilities. There was no suggestion that either the IDBs or the water companies had stepped back from carrying out their responsibilities, although in both cases a number of stakeholders pointed to the more collaborative approach that they had adopted. Where stakeholders identified a change, these mainly related to lower-tier councils and local highways authorities.

As already noted, many lower-tier councils were reported to have cut the resource allocated to local flood risk management as a result of the changes introduced by the FWMA and the resource constraints which have affected them in that time. However, stakeholders made it clear that it was a variable picture, with some lower-tier councils having remained proactive.

The districts are all different, some are more proactive than others. Some don't employ drainage engineers any more. It's a bit hit and miss and it has been exacerbated by budget cuts. Some have taken a step back because the LLFA is now in place. It's been used as an opportunity in some cases for them to step back from the use of land drainage powers (LLFA 8 other council officer).

Views on the extent to which local highway authorities have continued to exercise their responsibilities for the management of local highway drains varied considerably. Some identified no change. Others suggested that less maintenance of local highway drains was taking place, but attributed this to budget cuts rather than to the FWMA. A number of stakeholders suggested that local highway authorities were being more effective in their management of local highway drains as a result of closer working with the LLFA, which has enabled a more integrated approach between highway maintenance and local flood risk management.

5.4 Leadership

The absence of a lead organisation with responsibility for local flood risk was a key driver of the FWMA. One of the intended outcomes of the Act was that the LLFA would take on a leadership role in managing local flood risk and that this role would be clear, understood and demonstrated.

Most case study stakeholders felt that the LLFA in their area was demonstrating leadership in the management of local flood risks. A number of stakeholders suggested that it had taken time for the LLFA to develop this role, and in some cases their position of leadership was felt to be still emerging, as the LLFA become more proactive in implementing the requirements of the FWMA and become less reliant on the EA.

A number of stakeholders were keen to make the point that, whilst the LLFA may be leading, the contribution of other organisations remained crucial. For example, the EA were said to be providing a degree of leadership in some cases. For example, they still ran the partnership groups in some areas and were still perceived to be the lead organisation in some cases. The important role of officers with a sub-regional remit, e.g., funded by the local levy, was emphasised by others, e.g., in arranging partnership meetings, providing guidance and support and facilitating engagement between risk management authorities.

Where powers had been delegated, this was not seen to have undermined the LLFA's leadership role. In one case, the opposite was felt to be true.

The fact that there's been delegation and working with the districts is actually a really good sign of strong leadership, that they've been willing to delegate and build partnerships (LLFA 29 Lower-tier council).

Stakeholders were asked how this leadership role was being demonstrated. A number of common themes are apparent in the responses:

- Coordination. Coordinating both the assessment of flood risk and the response to that risk.
- Engaging others. Engaging other organisations in partnership, through formal structures or otherwise.
- Developing a vision. Local flood risk management strategies were seen by some to be an expression of LLFA leadership. One example was cited of a strategy which sets out a 20-year vision for addressing flood risk.
- Developing projects. Action, in terms of developing projects and securing funding for them, was also seen to be an important expression of LLFA leadership.

Resource constraints were the most commonly cited challenge to LLFAs playing a leadership in flood risk management. A number of stakeholders referred to LLFA lead officers who were combining this role with other responsibilities, suggesting that this undermined their ability to lead.

5.5 Operational arrangements

5.5.1 Baseline

The Institution of Civil Engineers (ICE) acknowledged that local government was experiencing difficulties in recruiting and retaining flood risk management experts, including qualified engineers (ICE, 2011). These skills were needed for local

authorities to implement their new responsibilities effectively. Local authorities estimated that they would need to increase spending on staff related to flood risk management by 30 per cent to meet their new responsibilities (Local Government Group, 2010). In 2008, the LGA reported that 44% of local authorities had a lead member for flood risk management and 56% had a senior officer champion for flood risk management (LGA, 2008).

The baseline in capacity and staffing can be summarised from the Environment Agency and Halcrow report (2011) undertaken as a baseline to the capacity building programme and the Local Government Survey undertaken in 2008²⁴:

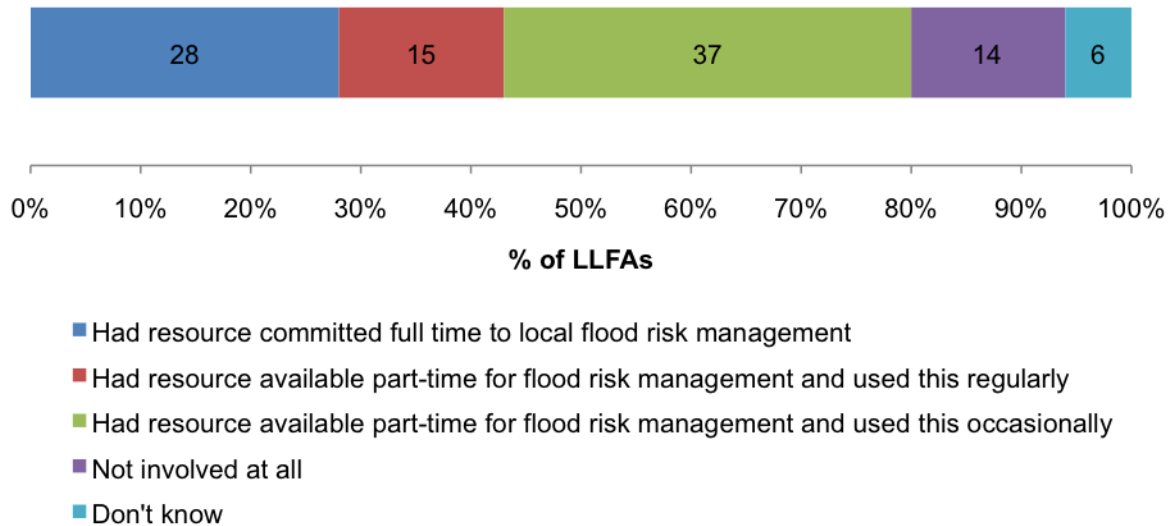
- In 2011, only 30% of local authorities felt they had the necessary technical expertise available (NAO, 2011);
- 33% of local authorities who responded to the survey were finding it either very difficult or fairly difficult to recruit technical staff to fulfil its existing flood risk management role in 2008 (LGA, 2008);
- Recruitment difficulties were considered to be related to a lack of suitably qualified applicants or applicants lacking relevant experience (LGA, 2008);
- There was an ageing workforce within flood risk management with 42% of respondents over the age of 50 and only 17% younger than 30 (Environment Agency and Halcrow, 2011);
- Significant experience was seen within the local authorities (52% had over 21 years' experience), but not in the field of flood risk management (56% had less than 5 years of flood risk management experience) (Environment Agency and Halcrow, 2011);
- There was an existing resource pool working on flood risk management issues. However, approximately 45% of the 217 respondents spent a day or less on flood risk management activities (Environment Agency and Halcrow, 2011); and
- The resource pool was well educated, with 89% having undertaken some form of further or higher education and over half were members of a professional organisation (Environment Agency and Halcrow, 2011).

The telephone survey findings provided further detail on the level of staffing committed to flood risk management prior to the FWMA. All respondents were asked about the extent to which the local authority they represent was involved in local

²⁴ The survey had a response rate of 66.2% (257 of 388 local authorities in England).

flood risk management – including drainage issues – prior to the introduction of the FWMA. The results are shown in Figure 5.2.

Figure 5.2: “To what extent was your authority involved in local flood risk management (including drainage issues) before the 2010 Flood and Water Management Act?” [n=107]



80% [n=86] of local authorities that are now LLFAs had at least some involvement in local flood risk management prior to the introduction of the FWMA in 2010, though less than one third [n=30] had full time resources committed.

Where LLFAs reported at least some involvement in local flood risk management prior to the FWMA [n=86], they were asked whether they had any staff with responsibility for flood risk management. 73% [n=69] reported that they did, 2% [n=4] did not know and 15% [n=13] reported that they did not. County councils were the least likely to say that they did.

The latter 15% included some LLFAs that reported some level of resource commitment (as per Figure 5.2), indicating a potential disconnect in responses. However, in all such cases the LLFAs had said they had ‘part-time’ resource committed, therefore their responses suggest that they did not have a distinct full time member of staff in a flood risk management role, more someone who could pick this up as part of their role if and when required.

Amongst those that said they did have staff involved in flood risk management [n=69], the average level of staff resource was 2 FTEs. This was in some cases representative of the figures being cumulative from several people having some role rather than being individual(s) dedicated solely to flood risk management activities, though respondents were not asked from which departments or teams the resource was drawn.

Defra provided £1 million funding in 2010-2011 to support implementation of the FWMA. A further £21 million was allocated amongst LLFAs in 2011/12, and £36 million each year from 2012/13 until 2014/15. Since 2013 the funding has been administered through a mixture of DCLG's Settlement Funding Assessment and Local Services Support Grant (LSSG). The £21 million DCLG component is paid through retained business rates and Revenue Support Grant (known collectively as the Business Rates Retention scheme) and the Defra component is transferred from Defra to DCLG and paid through the Local Services Support Grant. None of the revenue funding is ring fenced by Government for flood risk management work. In addition, Defra published a capacity building strategy, with the aim of increasing the capacity and skills of LLFAs to help them deliver their new role and responsibilities under the FWMA, the Flood Risk Regulations 2009 and other actions recommended in the Pitt Review (Pitt, 2008). The resulting capacity building programme comprised: workshops and e-learning modules for LLFA staff; further education courses in river and coastal engineering; and information sharing mechanisms such as FlowNet (LGA based flood risk management portal).

5.5.2 Staff resource committed to local flood risk management

Level of resource

77% of respondents to the online survey²⁵ [n=111] (2013 survey; 71%) said that their authority had a flood risk management team.

When those with a team [n=111] were asked how many FTEs work in flood risk management in their authority, figures quoted by respondents ranged from 0.5 to 20, with a mean average of 3.5 FTEs (2013; 2.8 FTEs). Compared to pre-FWMA resourcing levels, this indicates a significant increase in authorities allocating full time resource to managing flood risk and to the number of FTE in those authorities. The case studies confirmed that the level of staff resource committed to local flood risk management varied enormously between LLFAs. One case study LLFA had a team of 10 FTE, whilst another had 0.4 FTE working on flood risk management. County councils and unitary councils which had retained drainage teams in 2010 tended to have a bigger staff resource.

In terms of wider resources, 30% of all online survey respondents [n=43] said that their LLFA shared staff resources with other LLFAs (2013; 22%) and 77% [n=111]

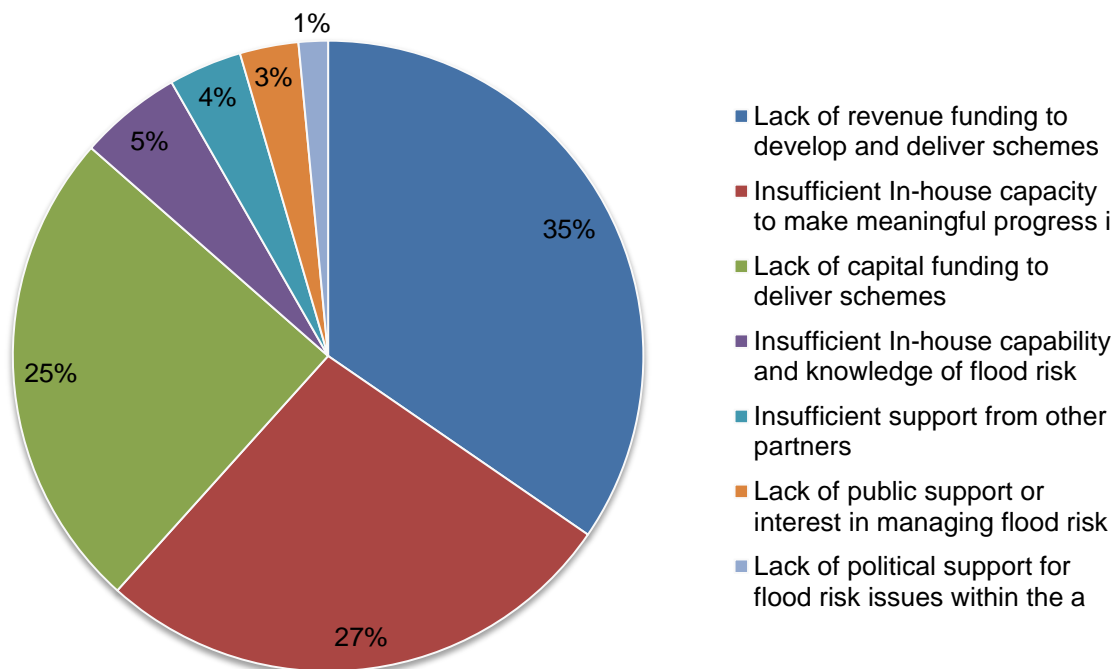
²⁵ There were a total of 145 responses to the online survey, across 107 LLFAs

had used external consultants in 2014 to deliver LLFA responsibilities or requirements²⁶.

Staffing/resources issues

All online survey respondents were asked to state (from a list) their single biggest concern in being able to manage local flood risk in the next 1-2 years in their authority. Figure 5.3 shows the responses.

Figure 5.3: “What is your single biggest concern in being able to manage local flood risk in the next one to two years in your authority?” [n=145]



Concerns about funding and in-house capacity were by far the most significant concerns, and these were echoed in the case studies. In 22 of the 30 case studies,

²⁶ Amalgamating responses from individuals in the same LLFA to avoid double counting, 33% of LFFAs in the on-line survey shared staff resources with other LFFAs and 81% used external consultants in 2014 to deliver LLFA responsibilities / requirements. Responses reported at the Local Authority level have been amalgamated, such that if any one individual from a specific local authority reported that they shared staff resources, this was the result reported for that Local Authority as a whole. It follows that the percentage reported at the Local Authority level could therefore be higher (or lower) than if individual responses are reported separately.

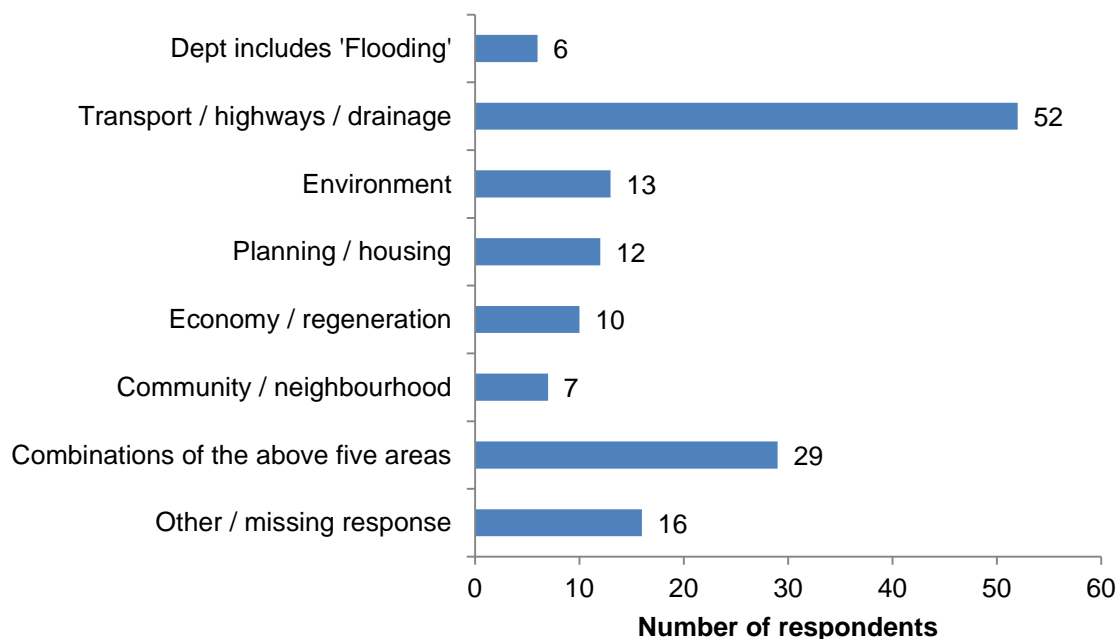
concerns were expressed about staffing and/or resource issues. Many stakeholders also expressed concern about further pressures on staffing and resources in future, both as a result of increasing resource constraints and the addition of a statutory consultee role for LLFAs for new SuDS schemes.

The case study findings suggest no clear correlation between the presence of staffing/resource issues and levels of deprivation (as hypothesised in the typology) or any of the other typology indicators. Instead, these issues seem to be common across most LLFAs to one degree or another. However, a small number of LLFAs suggested that there was a relationship between their level of resourcing and flooding incidents, i.e. when flooding incidents occur they are more likely to be able to secure council funding for flood risk management work.

Department

All on-line survey respondents were asked to state the LLFA department they work in. Again, the caution around these responses applies - it is not certain that all the individuals responding were those most closely involved in local flood risk management (i.e. LLFA leads).

Figure 5.4: Breakdown of LLFA departments in which respondents work [n=145]



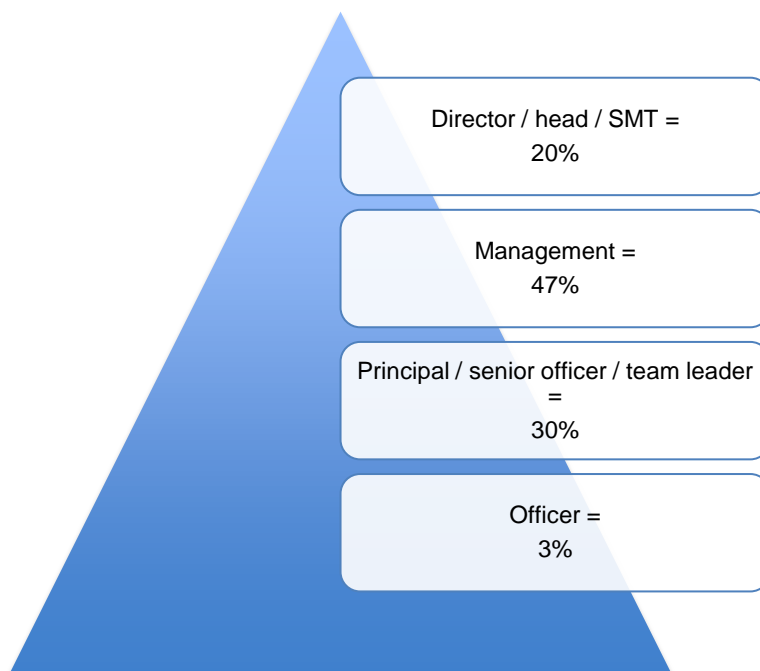
As can be seen in figure Figure 5.4, six respondents reported that their department name actually includes the word 'flood' or 'flooding'. Respondents were most commonly based in a transport/highways department. Almost all department names given were related to transport, environment, planning, economy, community or a combination of those.

Seniority

All on-line survey respondents were asked to describe their role and job title in the LLFA they represented. Analysis of this data carries the caveat that we cannot be certain that the lead LLFA officer was the individual responding, therefore caution should be taken in drawing conclusions from the existing data about the priority placed upon, or specialist expertise assigned to, flood risk etc.

Respondents' open-ended descriptions of their job title were collated and coded to enable some analysis of seniority, as shown in Figure 5.5.

Figure 5.5: Breakdown of on-line survey respondent seniority [n=145]

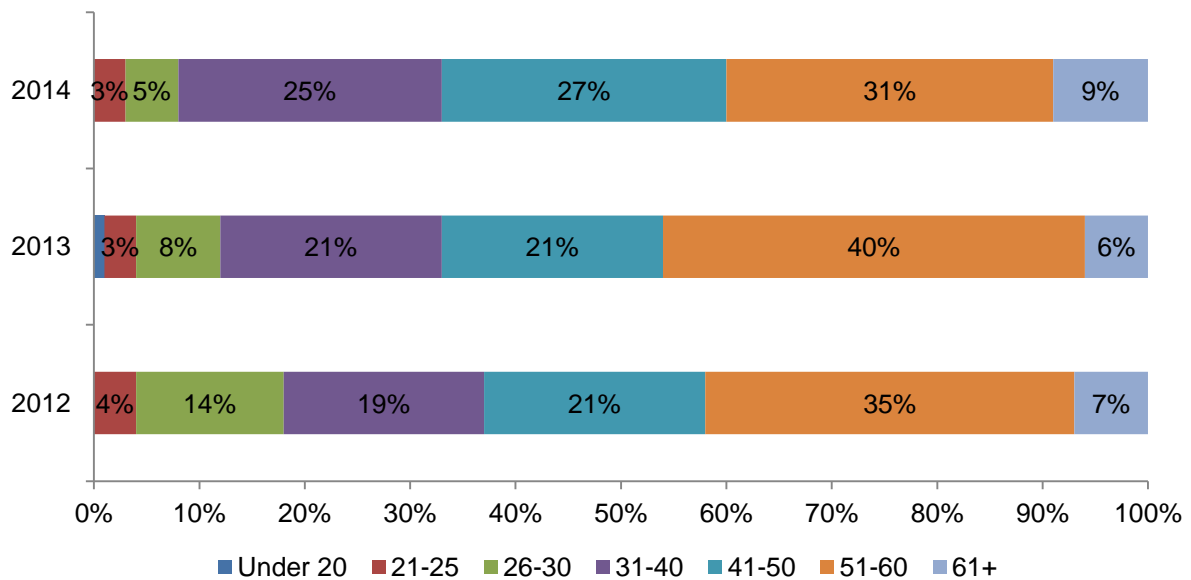


In terms of precise roles, 46% of on-line survey respondents described their role as being specific to flooding. Most others described it as being in a related area e.g., drainage, resilience, infrastructure or engineering. Regarding the latter, almost one fifth (19%) described their job as being an engineer.

Experience

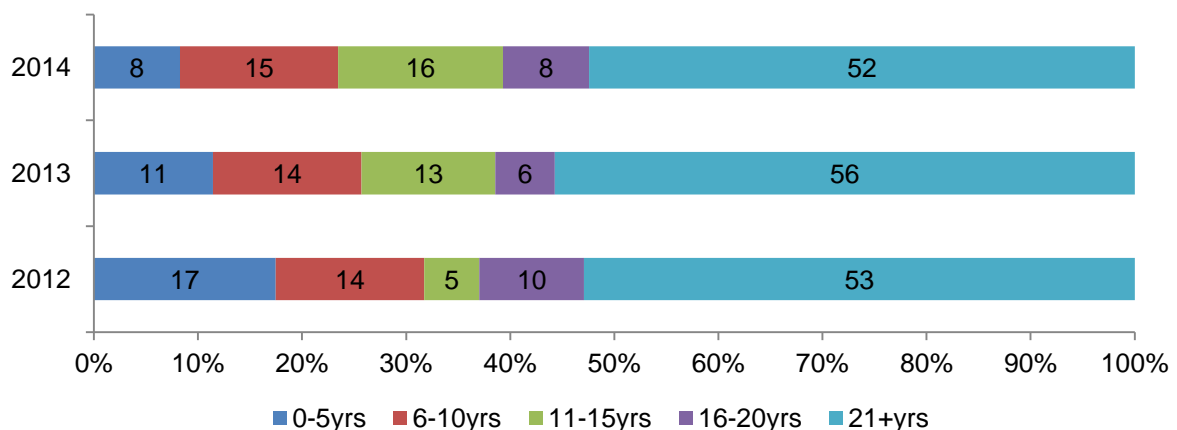
All respondents to the online survey were asked which of a series of prompted age groups they were in. As can be seen in Figure 5.6, as in the previous surveys, 40% of the respondent group were over 50.

Figure 5.6: “Please indicate your age group.” [2014 n=145; 2013 n=140; 2012 n=194]



Respondents were also asked how many years of professional experience (whether in flood management related roles or otherwise) they had. The results are shown in Figure 5.7.

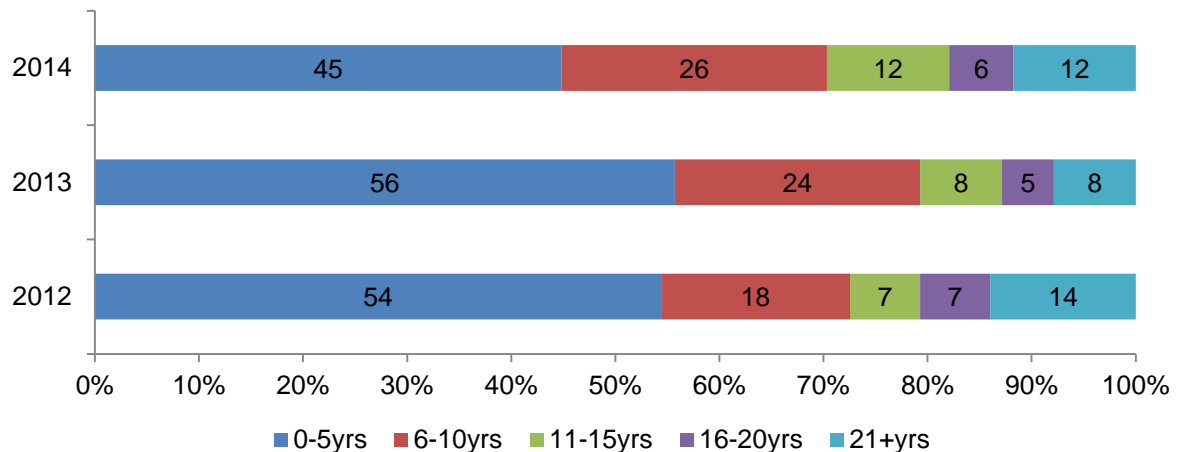
Figure 5.7: “How many years professional experience do you have?” [2014 n=145; 2013 n=140; 2012 n=194]



The chart shows that LLFA team representatives are on average highly experienced in a professional role (more than half have more than 20 years experience) and that the breakdown of levels of professional experience in LLFA teams has remained almost static from 2012-14. This in turn implies either very little staff turnover and / or that any departing staff are being replaced by someone with similar experience levels. However, a significant number of case study stakeholders expressed concern about the loss of experienced staff, particularly at lower-tier council level, and a fear about the loss of further staff in the years ahead as a result of budget cuts.

Respondents were asked how many years of experience they had working in flood risk management specifically, with the results shown in Figure 5.8.

Figure 5.8: “How many years of experience do you have working in flood risk management?” [2014 n=145; 2013 n=140; 2012 n=194]



When this stipulation is introduced, the chart shows a reversal, with the highest proportion of respondents (more than half in 2012 and 2013) having less than five years experience. The 2014 survey shows a slight decrease in this low experience group and a slight increase in the 6-10 year group. This could be because team members are staying in their roles and slowly more are moving up a bracket or that experienced staff from other departments or from the EA are being brought in to flood risk management teams.

5.5.3 Involvement of senior officers and members

65% of telephone survey respondents [n=70] said that there was a portfolio holder in the council with specific responsibility for local flood risk management. A further 28% [n=30] said that there was a member with a wider portfolio which included local flood risk management. 6% [n=6] said there was no elected member for local flood risk management and 1% [n=1] did not know.

79% of respondents [n=85] said that scrutiny committees were involved in at least one aspect of the LLFA. 20% [n=21] said that they were not and 1% [n=1] did not know. From respondent explanations and from the case study findings, the ways in which these committees are involved included the following:

- General overview and steering of the LLFA and its activities;
- Review and sign off of documentation – from the Strategy to periodic flood reports and monitoring reports;

- Discussion of policies before they are adopted by executive board;
- Representing the council at RFCC and regional and sub-regional partnership meetings; and
- Discussion and agreement of flood investigation procedures.

The case studies revealed variation in the extent of member involvement between and within LLFAs. Some LLFAs reported close engagement with members in wards affected by flooding, but very little engagement with others. A significant number of stakeholders also suggested that the level of involvement within individual LLFAs can vary over time, with flooding incidents and elections cited as factors in this.

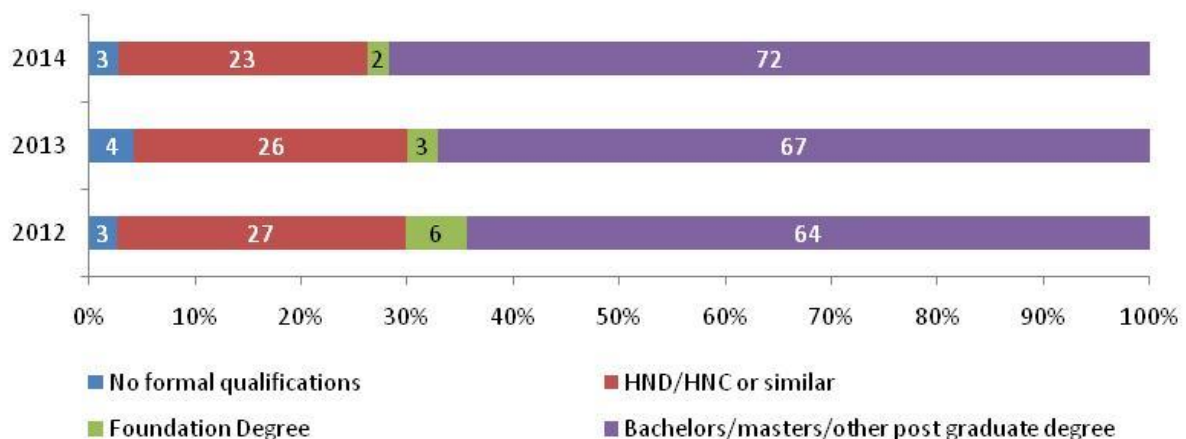
Around a third of case study LLFAs reported an increase in the level of member involvement since 2010. The FWMA was seen to be a key contributor to this, but flooding incidents in some cases were also significant. Demonstrating that flood risk management activities could attract funding was also cited as a factor.

5.5.4 Skills

Academic qualifications

All online survey respondents were asked to state their level of academic qualifications. The results are shown in Figure 5.9.

Figure 5.9: “Please select any qualifications you hold” [2014 n=145; 2013 n=140; 2012 n=194]



The proportion with graduate or post-graduate degrees has been over 60% in all of the online surveys and appears to have grown slightly each year from 2012.

In 2014, 57% of online survey respondents [n=83] reported that they were members of a professional institution. Whilst more than half, this appears to show a steady decline from 63% in 2012 and 60% in 2013.

Capabilities

All respondents to the online survey were asked to self-rate their capability (choosing one of five categories /levels) across the following areas:

- Current level of understanding of the Flood and Water Management Act (2010);
- Current understanding of local authority responsibilities in relation to local flood risk management;
- Current level of understanding of the Flood Risk Regulations (2009);
- Current level of expertise in developing and delivering a local flood risk management strategy;
- Current management skills (including leadership, negotiating, partnerships & communications);
- Current level of expertise in Sustainable Drainage Systems (SuDS);
- Current level of expertise in GIS mapping and data management;
- Current knowledge/skills to carry out your flood risk enforcement and consenting role;
- Current knowledge/skills for the application of the partnership funding requirements to deliver projects;
- Current knowledge/skills to develop and appraise projects and to prepare your Medium Term Plan;
- Current ability to designate and manage Flood Risk Assets and Features; and
- Current knowledge/skills to investigate flooding in your area and publish the results.

Overall, on nine of the twelve indicators there appears to have been some improvement (albeit self-rated) in LLFA team capability between 2012 and 2014. On the remaining three there appears to be a mixed picture of improvement and/or self-ratings have remained largely static overall. It is notable that one of those three areas is in relation to SuDS, an area highlighted by many respondents to the

telephone survey as an area for improvement for Defra guidance and an area in which there was considerable uncertainty at the time of the survey²⁷.

The full results are shown in appendix G.

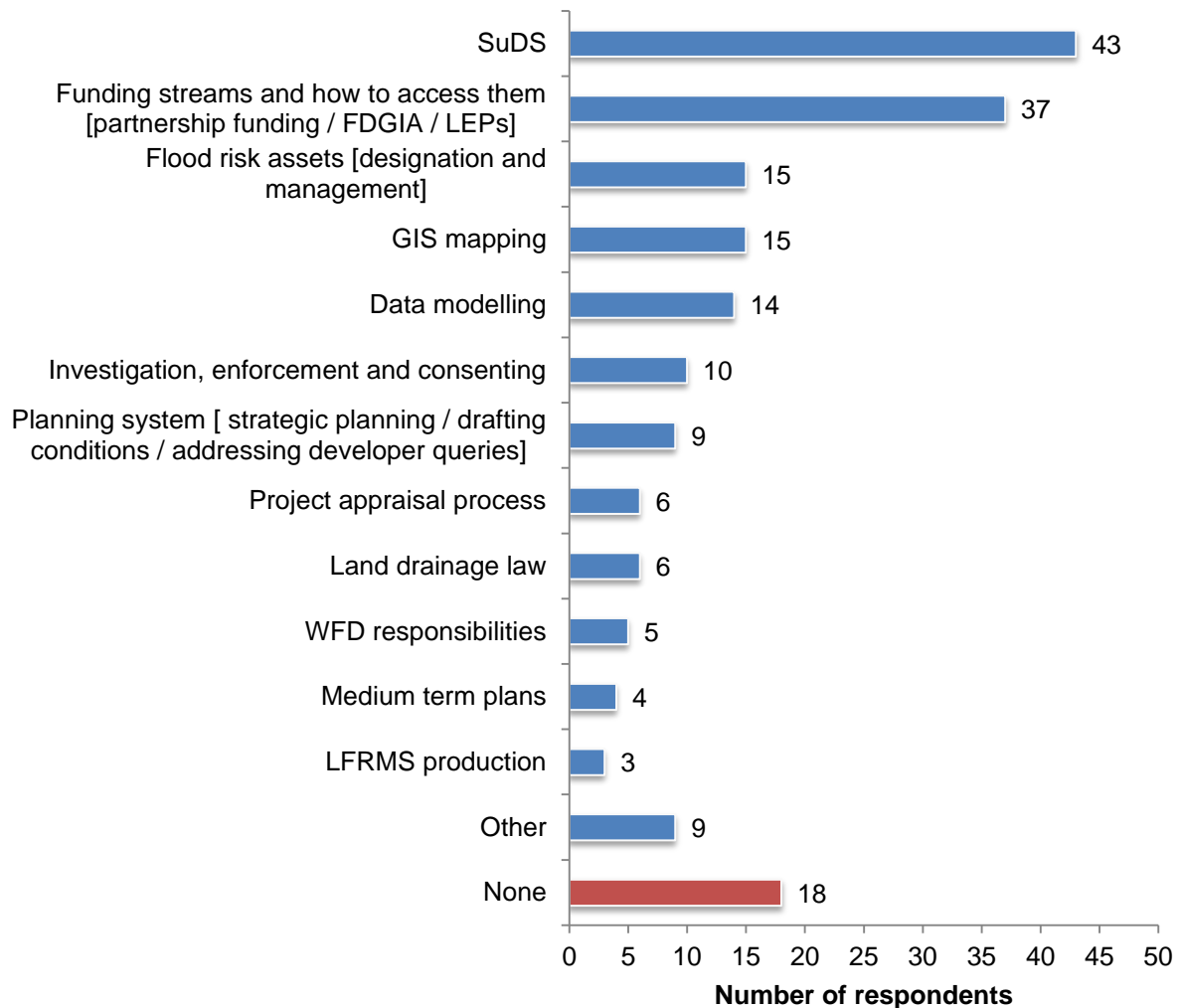
Key skills gaps

The case studies sought to explore the extent to which stakeholders considered there to be skills gaps within LLFAs. The responses from both LLFA and non-LLFA stakeholders were very mixed, with some suggesting that their LLFA had the necessary skills, others that their LLFA lacked skills in key areas. There was no apparent correlation between the perceived presence of skills gaps in an LLFA and any of the typology indicators.

All respondents to the on-line survey were asked to list up to three key skills or knowledge gaps that they felt they or their department had. For the 2014 survey, the open-ended responses on this have been collated and coded to establish the extent to which different skills and knowledge gaps were cited. The results are shown in Figure 5.10.

²⁷ At the time of the survey it was not known whether and how the responsibilities relating to SUDS which were outlined in the FWMA would be implemented.

Figure 5.10: “What are the key gaps in your knowledge/skills that you would like to improve?” [n=145]



Overall, 88% of respondents could think of at least one gap. SuDS was the most commonly cited knowledge gap, with respondents often saying that this was due to a lack of Government steer on the topic at the time of the survey.

The other commonly cited gap was around various funding opportunities that respondents had heard of. They wanted to understand what these were, eligibility, how to apply for them, and what other sources might be available.

Only gaps mentioned at least three times were included as a separate bar. ‘Other’ gaps cited by respondents included watercourse maintenance and inspection, delivering flood and coastal erosion risk management schemes, and community engagement.

The gaps cited in 2014 – as well as the frequency with which they were cited – align closely to those cited in the 2013 on-line survey. SuDS seems to be slightly less commonly cited in 2014 than in 2013, but overall the suite is broadly similar. This

would seem to imply that some gaps are not being successfully addressed or resolved, though it may be different individuals citing the same gaps as they encounter them, and there were more respondents in 2014 who said they had no gaps. The way in which data was collected differed in 2012²⁸ (making comparison difficult), though SuDS was a very commonly selected issue in that survey too.

The case studies confirmed that SuDS and accessing funding (particularly in the context of partnership funding and the need to access multiple funding streams) were perceived to be areas of weakness in some LLFAs. A number of stakeholders expressed concern about LLFAs' ability to perform the statutory consultee role in relation to proposed new SuDS schemes.

It was apparent from the case studies and the results of the online survey that the staff involved in delivering LLFA responsibilities were from varied backgrounds, with varied qualifications and levels of training. It was also apparent from the data that councils were at very different starting points in terms of capacity and skills when the FWMA was introduced. Some had no staff with any experience of flood risk management. Others had large and experienced drainage teams. It is perhaps unsurprising therefore that the skills gaps cited by case study stakeholders also varied enormously. Based on the case study findings, in very broad terms at the LLFA level, the skills gaps could be categorised as follows:

- LLFAs who lacked engineering expertise (which in a significant number of cases had been exacerbated by the loss of experienced engineers both within unitary authorities and at the lower-tier level) but who may have been strong in terms of strategy development;
- LLFAs who were felt to have the technical and engineering skills but lacked softer skills such as strategy development and engagement; and
- LLFAs who had very little resource committed to flood risk management and were considered to have wide-ranging skills deficiencies.

A number of LLFAs who needed further engineering and technical expertise suggested that they found it difficult to recruit such staff, whilst other stakeholders suggested that there was a general lack of flood risk management expertise in the employment market.

The departments within which LLFA teams reside may be a factor in determining their particular strengths and weaknesses in terms of skills. For example, some stakeholders suggested that being based within planning often meant the LLFA

²⁸ The survey had a small number of pre-defined gaps for respondents to select, some of which overlapped or included multiple potential gaps.

would be strong in terms of strategy development, whilst being based within a highways and/or drainage department may lead to strengths on the technical and engineering side. Some LLFAs suggested that combining input from planning and highways/drainage was important for effective delivery of LLFA responsibilities.

A further key area of perceived weakness was in terms of project management and delivery of flood risk schemes. A number of LLFAs suggested that they were on a learning curve in this area, and a number of non-LLFA stakeholders expressed concern about the shortage of experience of project delivery in many LLFAs.

5.5.5 Capacity building programme

Workshop attendance

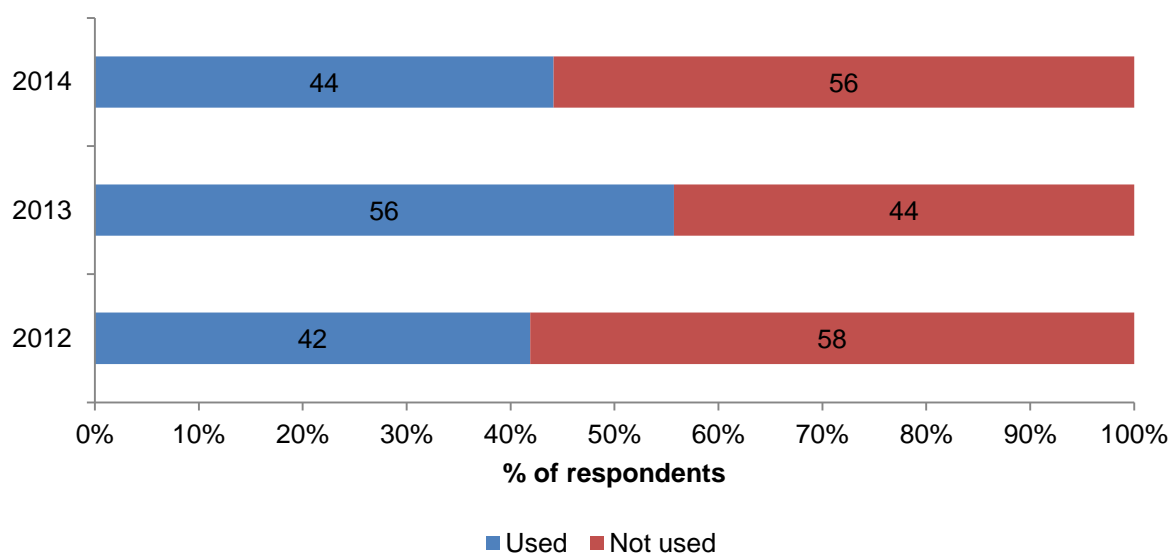
All respondents to the on-line survey were asked which of a list of workshops they had attended.

The 2014 survey showed that the best attended workshop in 2014 was the one on SuDS and SAB. Whilst this is the first time this workshop was provided, the high attendance would also seem to endorse the view in section 3.1 and 3.5 that this is perceived by LLFA representatives to be a gap in their knowledge or understanding.

E-learning modules

All respondents were asked if they had made use of the programme's e-learning modules. The results are shown in Figure 5.11.

Figure 5.11: “Have you made use of the capacity building programme to date by using e-learning modules?” [2014 n=145; 2013 n=140; 2012 n=194]



Where they had accessed e-learning modules [n=64], respondents were asked to specify which they had accessed. Table 5.2 shows – for 2014 respondents – the extent of use of different modules from most to least accessed.

Table 5.2: Ranking of modules by extent of use in 2014, based upon responses to the question “Which e-learning modules did you use? (tick where applicable)” [n=64]

Module	% of those using modules that accessed
Local Flood Strategies	66%
Understanding the new FCERM Legislation	55%
Flood Risk management	52%
Consenting and enforcement – ordinary watercourses	50%
Sustainable Drainage	48%
Partnership Funding	25%
Property Level Protection	23%
Basic drainage engineering	22%
Water Framework Directive (WFD) and flood risk management	22%
Designation of Assets	16%
Climate Change	13%
Guide to FCRM Community Engagement	9%
Collaborative working Skills	8%

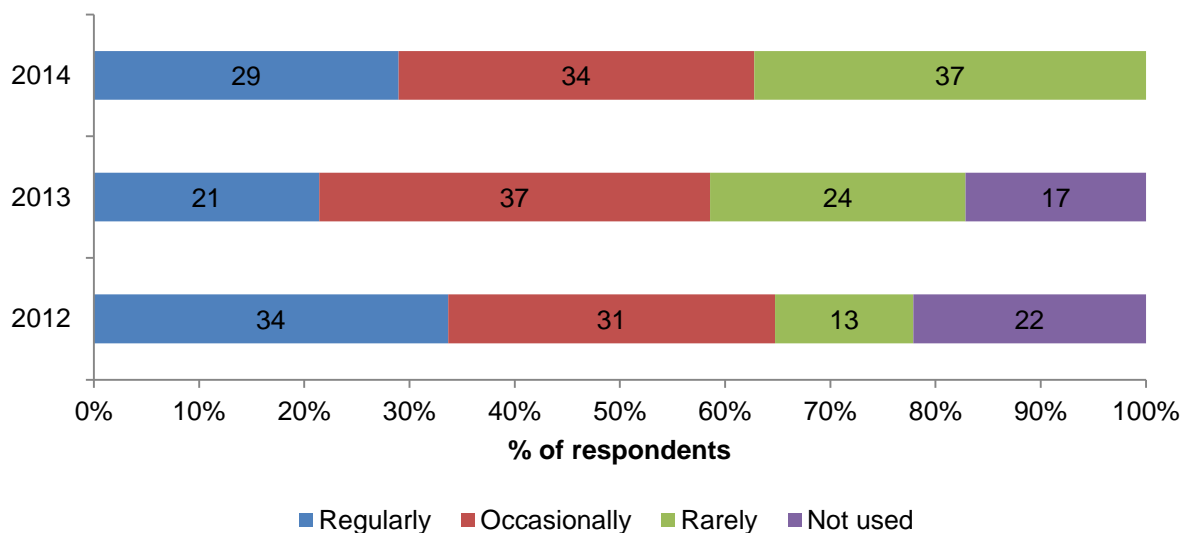
Project Appraisal	8%
Modelling and Information (Modules 1, 2 or 3)	8%
Introduction to Asset Information System (AIMS)	8%
Making better decisions with the Flood Guidance Statement	6%
Climate Change Wales	3%

Of those that had accessed at least one module [n=64], 56% [n=36] (2013; 35%) said that they had found the module(s) 'very helpful and informative', 41% [n=26] (2013; 45%) had found them of 'some use but limited value', whilst the remaining 3% [n=2] (2013; 20%) found them to be 'not particularly helpful'. The results show a slight increase in user satisfaction.

Use of LGA Flood Risk Portal

All respondents were asked if they had used the LGA's Flood Risk Portal - which includes FlowNet, the online discussion forum – and, if so, how often they do so. The results are shown in Figure 5.12.

Figure 5.12: “How often do you use LGA's Flood Risk Portal (which includes FlowNet – the online discussion forum) www.local.gov.uk/floodportal ?” [2014 n=145; 2013 n=140; 2012 n=194]

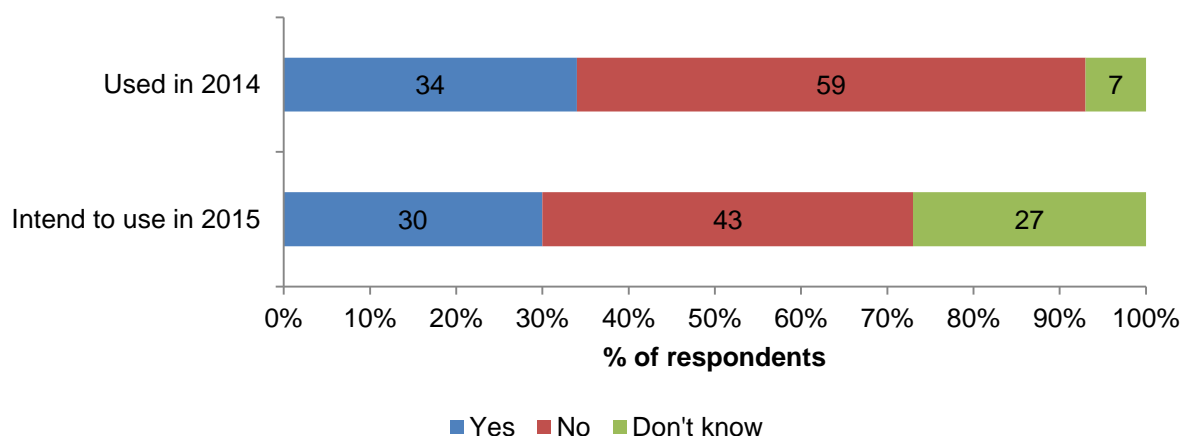


In contrast to previous years, all respondents had at least once accessed the LGA Flood Risk Portal, though the proportion of LLFA representatives accessing this on a regular basis had not grown. This may be partly explained by the reduced opportunity to promote the portal through the capacity building workshops, due to fewer of these being held in 2014.

Further education courses

All respondents were asked if their authority had made use of in 2014 – and / or intend to make use of in 2015 – the further education courses offered through the Capacity Building Programme. The results are shown in Figure 5.13.

Figure 5.13: “Is your local authority considering making use of further education courses in the coming year?” [n=145]



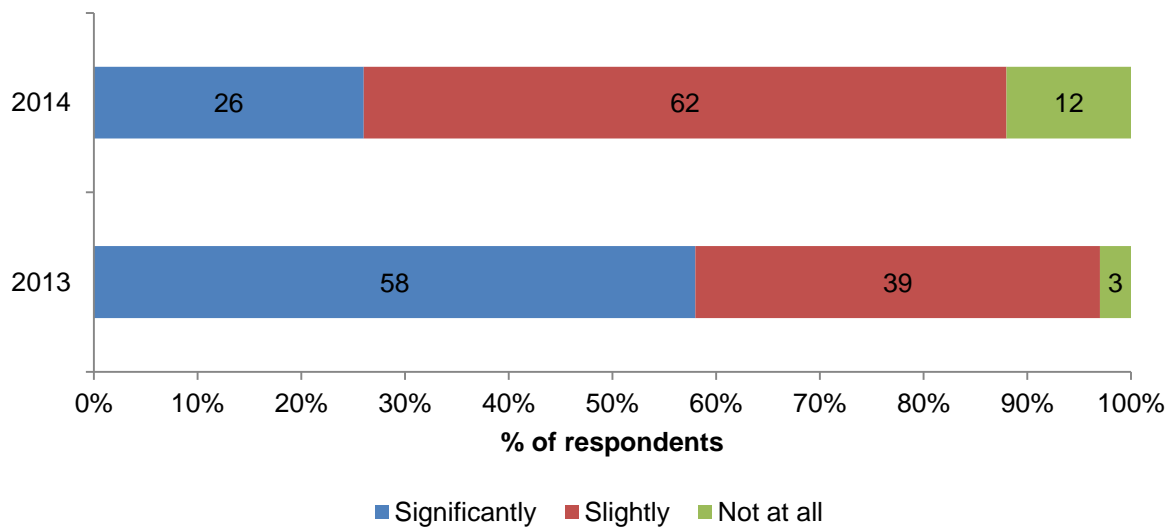
The proportion saying that their authority had made use of the courses was almost identical to that in the previous year's survey (35%). The 2013 survey also provided an opportunity to see how far authority considerations result in use. In 2013, 24% of respondents said that their authority was considering use, whilst 36% were not sure. 2014 figures indicate that in at least half of authorities considering the courses, these are then taken up.

Programme outcomes

All online survey respondents were asked if, overall, they felt more confident carrying out their role in local flood risk management than a year ago. The results are shown in Figure 5.14. 81% [n=117] said that they did (2013; 86%)²⁹. Those feeling more confident [n=117] were asked how much the capacity building programme supported this. Respondents in 2014 seemed less likely to attribute job confidence increases to the programme. Even where they did, the attribution was on balance less strong than in 2013.

²⁹ It should be noted that a 'no' response might indicate that the respondent was already very confident.

Figure 5.14: “Overall do you feel more confident carrying out your role in local flood risk management than a year ago?” [2014 n=118; 2013 n=122]



The majority of case study stakeholders who commented on the capacity building programme were positive about its impact. There was a clear sense that it had played an important role in building the capacity of LLFAs to carry out their responsibilities. However, some stakeholders suggested that the scale of the programme was insufficient to address the scale of the skills shortages within LLFAs³⁰.

5.5.6 Summary of findings

Prior to the FWMA, the evidence suggests that councils were struggling to recruit and retain staff with flood risk management expertise. As a result, a significant number lacked technical expertise and there was an ageing workforce within drainage and flood risk management. Less than 30% had staff resource committed full time to local flood risk management.

The FWMA responsibilities and associated new burdens funding has led to a significant increase in the level of staff resource committed to local flood risk management. However, this varies enormously between LLFAs, e.g., from 0.4 FTE in one case study to 10 FTE in another.

In spite of the increased resource available, concerns about funding and in-house capacity remain the most significant concerns among LLFA staff in terms of their

³⁰ There had been a significant shift in 2014 to a more LLFA-led programme but this has meant that the number of events has reduced.

ability to manage local flood risk in the coming years. These concerns are shared by many external stakeholders.

Concerns also remain about the levels of technical expertise available to LLFAs, with recruitment of specialist staff remaining challenging because of a reported shortage of such staff in the employment market and experienced staff reportedly being made redundant or retiring, particularly within lower-tier councils. It is important to note however, that there has been ongoing improvement in the capability of LLFA staff since 2010 and the capacity building programme is reported by those staff to have played a very important role in this. However, the scale of the programme may be insufficient to address the skills shortages affecting LLFAs.

Council member involvement has increased in a significant number of LLFAs since 2010 but the evidence suggests that there is variation in the levels of member involvement and the levels of involvement often fluctuate with the occurrence of flooding incidents.

5.6 Communication and engagement with the public

5.6.1 Baseline

One of the intended outcomes of the FWMA was to address a situation prior to 2010 in which, amongst the public, there was a low level of understanding of flood risk, what was being done about it and by whom, and what role they could play in helping to address the risk. The FWMA sought to make the public more resilient to flood risks through generating a better understanding of flood risks in their area, what is being done about it and which authority has responsibility for the different aspects of the system.

The FWMA required LLFAs to consult the public in the development of their local flood risk management strategies and the other principal LLFA outputs (section 19 reports and asset registers) also had to be published.

This sub-section presents the evaluation findings relating to public engagement. As already stated, it should be noted that the evaluation has not involved any engagement with the public. The findings are based on the perceptions of stakeholders.

5.6.2 Outputs

76% [n=81] of telephone survey respondents reported that their LLFA had consulted the public during the preparation of the draft local flood risk management strategy. 21% [n=23] said that the public had not been consulted and 3% [n=3] did not know.

A smaller proportion (59%) [n=63] said that they had consulted the public *after* the draft had been produced. At the time of the survey, many LLFAs had not yet published their strategy, meaning they may not yet have had a draft and so may have yet to conduct public consultation pre and or post draft production (intentions to do so were not explored). At the time of the survey, 45% of LLFAs [n=48] had consulted both before and after the draft was produced.

Where LLFAs reported having conducted public consultation either before or after producing a draft local flood risk management strategy [n=96], they were asked what form this had taken.

Consultation conducted to inform preparation of the draft local flood risk management strategy tended to be on-line i.e. the initial draft placed on the council website for comment or consultation responses. A number of LLFAs also sent out surveys to residents and publicised in parish newsletters and / or via social media. A small number of LLFAs also conducted public exhibitions.

Post-draft consultation approaches included public meetings, road shows, approaches to parish councils, leaflet drops, surveys sent to businesses and residents (in particular in areas recently affected by flooding), stands at significant public events / fairs, and use of local radio.

In addition to specific consultation on the draft local flood risk management strategy, 54% of LLFAs [n=58] in the telephone survey reported having undertaken other communications / consultations with the public. In addition, 71% [n=76] claimed to have a publicly accessible statement of the LLFA's responsibilities.

5.6.3 Success factors

A few LLFAs reported some success in schemes to build community resilience, e.g., setting up Flood Action Groups in areas affected by flooding. Pathfinder schemes had also helped to build understanding and resilience in some case study areas. A few stakeholders viewed the requirements to publish section 19 reports and local flood risk management strategies as helpful in building public understanding, but most success in this area was attributed to more intensive localised community resilience work such as through the Defra Community Pathfinder schemes. This is consistent with the challenge identified above of the need to achieve a cultural shift in public understanding and expectations.

I'm going to go back to Pitt, and what the Pitt Review was saying fundamentally was that people should be at the centre of the Flood & Water Management agenda, and I think what the Act has done to some degree in my view, has shown that just publishing things on websites and making information available in its own right is not good enough. And what things like our Community Pathfinder has shown... was you need to find the way of

translating your language as an organisation much more effectively to local people in terms of what you do on a daily basis, rather than just when there's an incident and what have you... simply publishing things which is all really the Act is asking you to do in terms of the public-facing elements is not enough, you've got to go a lot further than that (LLFA 20 LLFA lead).

5.6.4 Benefits

The majority of case study stakeholders did not feel that the FWMA had made a significant difference to the level of public understanding of flood risk and what they can do about it. The exception to this was communities who have been directly affected by flooding incidents, where engagement as part of section 19 investigations and subsequent follow-up work was seen to have made an impact. In the few cases where there appears to have been a significant shift in the level of public understanding and engagement, the Act was seen as a contributory factor but other factors were often more significant, particularly the Pathfinder schemes.

5.6.5 Challenges

As already discussed in section 4.1.5, securing public engagement in the development of local flood risk strategies was reported to be a challenge by many LLFAs, even in areas which had experienced significant flooding incidents.

Challenges were also reported in relation to the publication of asset registers, with very few LLFAs making their asset registers widely available to the public, e.g., by publishing online.

The terminology used to describe risk was cited as a wider challenge. Describing risks in terms of 1 in 20 years or 1 in 50 years etc. was thought to be confusing, particularly in the context of the weather patterns of recent years, which have led to some of these categorisations being viewed as inaccurate.

Improved local flood risk management is reported to have led to heightened public expectations about the extent to which flood risks will be addressed, e.g., when solutions are proposed in section 19 reports. LLFAs and other risk management authorities report finding it challenging to manage expectations when not all potential solutions can be delivered.

A small number of stakeholders suggested that a cultural shift was needed in terms of public expectations, from an expectation that the risk management authorities would deal with all flood risk to a sense in which the public themselves had a key role to play. This was considered to be a considerable challenge, not least because of the perceived political sensitivities associated with such a message.

5.6.6 Summary of findings

Prior to the FWMA, amongst the public the evidence suggests that there was a low level of understanding of flood risk, what was being done about it and by whom, and what role they could play in helping to address the risk.

Most LLFAs have consulted the public on their local flood risk management strategy and more than half have undertaken other communications or consultation activity.

However, these consultation efforts appear to have gained limited traction and, as a result, the Act is unlikely to have made a significant difference to the level of public understanding of flood risk and what they can do about it, except in communities which have been directly affected by flooding incidents where more intensive engagement has taken place.

A cultural shift is seen by some to be needed in terms of public expectations, from an expectation that the risk management authorities will deal with all flood risk to a sense in which the public themselves had a key role to play. This is likely to require more intensive efforts to build community resilience than is required under the FWMA, such as that carried out through the Pathfinder schemes.

6. Funding and costs

This chapter sets out the findings of the evaluation in relation to the funding and costs of local flood risk management following the introduction of the FWMA.

6.1 Funding for local flood risk management

6.1.1 Baseline

During the 2008 LGA survey, the average budgeted expenditure (per authority) for undertaking flood risk management functions in 2008/09 was £270,000, varying between £1.41 million in counties and £110,000 in lower tier districts. Around two fifths of authorities who responded (39%)³¹ were unable to supply a figure (LGA, 2008). It was not clarified what activities were considered 'flood risk management functions' and therefore what was included within these figures. They are therefore of limited usefulness in terms of making post-FWMA comparisons.

As already noted above, following the introduction of the new responsibilities for LLFAs in the FWMA, Defra allocated £21 million of new burdens funding amongst LLFAs in 2011/12, and £36 million each year from 2012/13 until 2014/15. Since 2013 the funding has been administered through a mixture of DCLG's Settlement Funding Assessment and Local Services Support Grant (LSSG). The £21 million DCLG component is paid through retained business rates and Revenue Support Grant (known collectively as the Business Rates Retention scheme) and the Defra component is transferred from Defra to DCLG and paid through the Local Services Support Grant. None of the revenue funding is ring fenced by Government for flood risk management work.

Each LLFA received a floor amount, which was then topped up according to the measurement of flood risk for each LLFA. A ceiling of £750,000 was set, so that no single LLFA received a disproportionately high amount of funding.

6.1.2 Funding sources

New burdens funding

All telephone survey respondents were asked what proportion of the new burdens funding had been spent on local flood risk management in their area. 61% [n=65] said that all new burdens funding had been spent as such. 27% [n=29] said that a

³¹ The survey had a response rate of 66.2% (257 of 388 local authorities in England).

proportion of the funding had been spent as such (a wide range of proportions were quoted between 20% and 90%), whilst 12% [n=13] did not know.

Council funding

57% of telephone survey respondents [n=61] said that their authority had contributed funds additional to new burdens funding since the FWMA was introduced. In one third of cases [n=21] this was maintenance of the pre-2010 allocation, but for the remaining two thirds [n=40] this was an increase of that budget (in addition to the new burdens funding).

A number of case study stakeholders suggested that the statutory duties introduced by the FWMA had helped to protect drainage and flood risk management work from council budget cuts.

That [the FWMA] has helped to shield us because of the statutory duties that have gone with it, because effectively in a local authority environment at the moment, anything that is non-statutory we're just not doing, or we're cutting drastically. So the statutory role of the LLFA has protected us without a doubt (LLFA 8 LLFA lead).

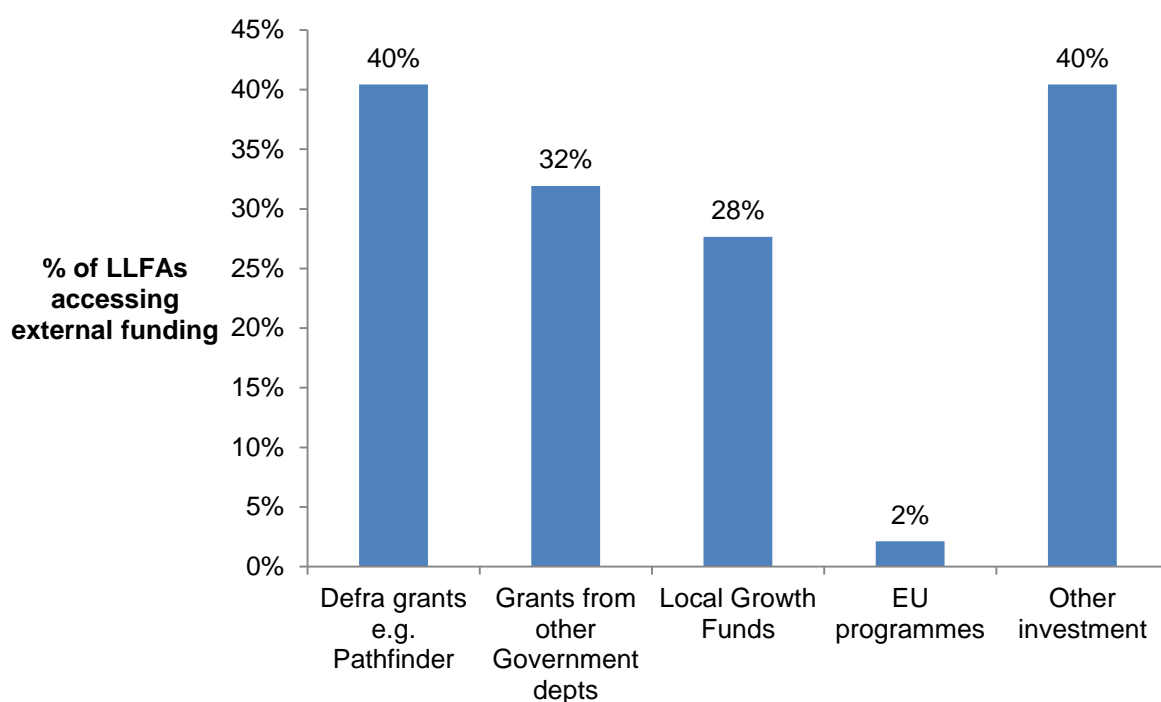
Flood Defence Grant in Aid (FDGiA)

78% of LLFAs [n=83] in the telephone survey reported that they had secured funding for capital projects and/or local flood risk management activities through the EA's investment programme.

Other external funding [TS]

Since being created, 44% of LLFAs [n=47] in the telephone survey reported having secured external funding outside of the sources already discussed. The extent to which various sources (prompted with the respondents) have been utilised is shown in Figure 6.1.

Figure 6.1: “Since it was created, has your LLFA secured any other capital or revenue funding for local flood risk management activities outside of those already covered? Was this from any of the following sources?” [n=47]



‘Other’ investment came from a wide range of organisations across the public, private and third sector, including water companies, parish councils, local community groups / trusts, developer contributions and – in one case – individual public contributions.

A further important source of funding which was not apparent in the telephone survey results (it wasn’t specifically asked about) but was apparent in the case studies was funding from the local levy. This was reported to have played an important role in providing match funding for schemes, which is critical under the partnership funding model³².

Overall level of funding

There were mixed views and no consensus amongst case study stakeholders about whether the FWMA had led to an increase in the overall level of funding being allocated to flood risk management work. In addition to the new burdens funding, some LLFAs reported increases in funding from sources such as water companies and private developers. However, funding was reported to have been cut elsewhere,

³² Introduced in 2011, the partnership funding model allows flood and coastal erosion risk management (FCERM) projects to apply for Flood Defence Grant-in-Aid (FDGiA), and encourages funding from other sources to be secured. The proportion of central funding that a project receives depends on the benefits it will bring.

such as in the level of funding allocated to flood risk management by some lower-tier councils, cuts to some council budgets for maintenance regimes and cuts in the EA's budget.

Notwithstanding the change in the overall level of funding, it was suggested by a number of stakeholders that the increased cooperation and collaboration between risk management authorities and others may be leading to more efficiency and effectiveness in spending.

Financial benefits arising from local flood risk management

The case studies generated anecdotal evidence of LLFA activities generating financial benefits for councils. These included:

- An LLFA which suggested that its local flood risk management strategy had been crucial to attracting Defra funding for a Pathfinder project;
- An LLFA which suggested that a more strategic approach to managing flood risks would generate longer term savings for maintenance budgets;

We're trying to sit down with the area managers of the highways and say 'You're saying you've got 'x' number of issues here, and you're going out and just dealing with the consequences of the issue. Can we look at what the source of that is and do something more strategic?' Rather than keep going back and cleaning the gullies, why is that gully getting blocked all the time? Can we go and talk to the farmer, is it due to them losing soil off their land? So if they plough across rather than up and down, or if they put some sort of grip in there (LLFA 4 LLFA lead).

- A number of LLFAs which suggested that longer term savings could be expected in terms of incident response;

Part of our remit is to reduce the flood risk to the properties... And as long as we continue to do that, then that's going to ultimately reduce the strain on resources when we do have a flooding event, because at the moment when we do have a flooding event the amount of resource we put in to response to that is still quite significant (LLFA 9 LLFA lead).

- An LLFA which was implementing a flood risk scheme on a major road junction, which, it was suggested, would enable people to get to work more quickly and generate benefits to the local economy;

- An LLFA which, through a flood risk management scheme, had created developable land which in turn had allowed them to benefit from the New Homes Bonus;
- Similarly, another LLFA which had created developable land and had then secured section 106 contributions from the developer; and
- Two LLFAs which referred to flood risk management schemes which formed part of wider regeneration initiatives and were considered, therefore, to be important in delivering long term economic benefits.

Local flood risk management in practice - 13

As part of the development of their local flood risk management strategy, one LLFA has developed a common works programme, which provides an overview of planned flood risk and drainage management works to be carried out across the county by the relevant risk management authorities. This provides the public with a view of what every risk management authority is planning to do and helps to identify the common pieces of work that the authorities can deliver together.

6.1.3 Funding - success factors and barriers

Success factors

Publishing local flood risk management strategies was reported by some LLFAs and by the EA to be important in successfully securing funding for schemes. A number of EA representatives suggested that bids for inclusion in the medium term plan were more likely to attract FDGiA funding if they were demonstrated to be part of a wider strategy. One LLFA also suggested that their strategy provided a 'hook' for planners to secure section 106 contributions from developers.

It is apparent from some of the case studies that building successful partnership working with other agencies can be a key success factor in securing external funding for flood risk management work. This is particularly true following the introduction of the partnership funding model. There were mixed views on whether the move to a partnership funding model had benefited the funding situation and this mix may be explained by the mixed experiences of building partnerships. Some cited struggles in attracting match funding, exacerbated by cuts to council budgets. Others suggested it had opened up potential for schemes to be delivered which would have struggled to attract FDGiA previously.

Developing good data on the costs and benefits of schemes was highlighted in more than one case study as a key enabling factor to securing external funding. However,

as discussed in the following section, developing such data can be challenging to resource.

A few LLFAs reported success in securing EU and Local Growth funding through LEPs. The link between flood risk management work and work on climate change adaptation by LEPs had been capitalised upon in some cases. This links to a more general point about seeing flood risk management work in its wider context. For example, two LLFAs reported securing funding for schemes partly because they were part of wider regeneration initiatives.

Barriers

In the case studies, the most commonly cited barrier to accessing funding was the bureaucracy associated with bids for FDGiA. Many LLFAs considered the level of evidence required and the associated costs to be disproportionately high, particularly for smaller schemes. The sense was that the system had been designed for larger main river schemes and was ill-suited to the often smaller schemes for addressing surface water and groundwater issues³³.

A scheme for £700k or £7m requires the same level of bureaucracy. We've discounted going for anything below £50,000. It's too complex and not worth it (LLFA12 LLFA lead).

More than one LLFA contrasted FDGiA applications with applications for other public funding, such as Department for Transport (DfT) schemes.

We recently completed a DfT bid for a placement of a bridge which was £10 million, whereas when I want to get £250,000 of Environment Agency funding it takes 10 times as long. It does put you off, you think I know the order we've had from [Name] the cost of the work is £300,000, but can I get more of that internally so I only have to bid for £200,000 so I don't have to complete that massive form. It's that bad, it's so time consuming and other authorities will say the same thing (LLFA 13 LLFA lead).

The situation was said to be exacerbated in some LLFAs which straddled EA regional boundaries, where the LLFAs have to deal with two separate teams in progressing schemes and bidding for funding.

The absence of any Government ring-fencing of new burdens funding was cited by a significant number of LLFAs as a major hindrance to them securing sufficient funding

³³ A measure of proportionality is built into the application and approvals process e.g. smaller schemes require a simpler business case providing certain criteria are met e.g. meets the criteria in the shoreline management plan, local flood risk management strategy etc. It may be that some of the comments about the bureaucratic nature of the FDGiA process reflect a lack of awareness of this.

to carry out their work effectively. Many stakeholders also expressed concern about future cuts to new burdens funding.

Whilst the FWMA was seen by many to have limited the extent of budget cuts to council work on flood risk management, these cuts were still said to have had a significant impact in many of the case studies. All telephone survey respondents were asked whether they thought that as a result of local government budget cuts, the funding available for local flood risk management within their local area is less than it would otherwise have been or about the same³⁴. 49% [n=52] felt that the funding for local flood risk management was less than it might otherwise have been due to cuts, though 45% [n=48] felt the funding has been about the same as it would have been anyway; 6% [n=7] did not know. The case studies highlighted that this is a particular

issue for developing funding bids, since council funding is often a critical component in this. It was also reported to be hindering the development of schemes to the point of formalising bids, because schemes often require significant council investment in feasibility work to generate the data and evidence required for bids.

As already noted, some LLFAs found that the move to partnership funding made it more difficult to secure funding for schemes. A significant number of stakeholders reported particular difficulties in securing funding from private beneficiaries, i.e. businesses and householders.

I think unless there's as a direct consequence on a business, that potentially could threaten their whole operation, I can't see why they would ever contribute, and householders their view is, well I pay my council tax, and I pay my tax to the government why should I pay anything else? So, no, I don't think it's as easy as it's been portrayed and that's been from genuine experience (LLFA 21 LLFA lead).

A further challenge to securing funding from partners was a mismatch in the funding timescales and budgeting periods of different partners. Whilst the regulatory

Local flood risk management in practice - 14

One LLFA was closely involved in LEP activity. A £15 million flood relief scheme was being progressed involving Growth Fund money, alongside other sources. The LLFA had also been allocated £6 million from the European Structural and Investment Fund for flood risk management work over the next four years. In conjunction with the EA and water company, the LLFA has established an informal infrastructure group to develop ways of accessing further LEP funding.

³⁴ The precise question wording was as follows: "Do you think that as a result of local government budget cuts, funding available for local flood risk management within your local area has been (a) less than it would otherwise have been; (b) the same as it would otherwise have been (c) don't know."

environment which the water companies were working in was seen to have been a further hindrance to them funding schemes in partnership, a number of stakeholders suggested that the new OFWAT settlements agreed in March 2015 would provide much greater flexibility in the kinds of schemes they are able to fund.

Some LLFAs in more rural areas suggested that it was more difficult for them to secure funding for schemes because the protection of properties was the key measure of value and often their schemes were in areas with a lower concentration of properties.

6.1.4 Summary of findings

The FWMA resulted in a significant injection of funding for local flood risk management between 2011/12 and 2014/15. This funding was not ring-fenced but approximately 60% of LLFAs (based on self-reported figures) spent all of the money on local flood risk management activities.

The FWMA has levered in additional funding for local flood risk management, including additional council funding in a significant number of cases, FDGiA and other sources. The statutory responsibilities associated with the FWMA have also, to some degree, helped to shield local flood risk management activity from council budget cuts. In addition, the increased cooperation and collaboration between risk management authorities is perceived to be leading to more efficiency and effectiveness in the spending of the available funding, although this has not been verified. Longer-term financial savings may be accrued by LLFAs, e.g., in terms of lower response costs for flooding incidents, as a result of flood risk management work.

However, many LLFAs reported finding the funding situation challenging, particularly because of the level of bureaucracy associated with bids for FDGiA. The system is seen to be ill-suited to funding local flood risk management schemes. In addition, securing revenue funding for feasibility studies to get schemes through the FDGiA process is reported to be increasingly difficult for LLFAs due to resource constraints³⁵.

³⁵ Capital grant is available to undertake an initial feasibility study where the EA Medium Term Plan assessment is that a capital scheme is likely. It may be that a lack of awareness of this is behind some of the comments about the challenges in securing funding for feasibility work.

6.2 Costs

6.2.1 Projected and reported costs

As part of the case study research all participating lead LLFAs were asked to provide data on the costs associated with responding to the requirements of the FWMA and specifically the following:

- Initial development of strategy;
- Review(s) of strategy;
- Capital investment flowing from strategy recommendations;
- Development and management of partnerships;
- Section 19 investigations;
- Initial development of asset register;
- Ongoing management of asset register;
- Other elements, e.g., coordinating partnerships;

Limited information was received. Often the LLFAs did not record details of costs by tasks and/or were unable to separate costs for flood risk management from other related activities within the same department which the flood risk function was based. Only eleven out of the thirty case study LLFAs provided any cost information. In most cases, only partial information was provided and in some instances it did not correlate to the specific cost elements requested.

A comparison of reported costs against those expected by Defra is provided in Table 6.1 below (the detailed data on costs from individual LLFAs is included in appendix H) and this is followed by some observations in relation to each element. However, the limited dataset means that the findings of any analysis of costs need to be treated with caution.

Perhaps a more significant reason for caution however is the variations in the ways that the requirements of the FWMA have been delivered. The starting points of LLFAs when the FWMA was introduced were very different. In addition, as described in this report, the nature of LLFAs' responses to the FWMA, even with regard to individual elements such as section 19 investigations, has varied significantly. As a result of these factors, the costs to LLFAs will inevitably have varied significantly too. Comparisons between LLFA costs should be treated with great caution. The cost data may simply be useful in providing an indication of the range of costs which

LLFAs have incurred, or chosen to incur by way of their chosen responses to the FWMA’s requirements.

Table 6.1: Projected and reported cost ranges

Element	Projected Cost Range ³⁶ (£)	Reported Cost Range (£)
Initial development of strategy	90,000 – 165,000 ³⁷	7,000 – 37,000
Review(s) of strategy	25,000 – 50,000 ³⁸	2,000 (pa) - 20,000
Development and management of partnerships	2,857 – 13,129	2,500 – 40,000
Section 19 investigations	2,857 – 13,129	5,000 – 35,000
Initial development of asset register	13,469 – 61,291	3,000 – 44,000
Ongoing management of asset register	20,000	2,000 – 20,000

6.2.2 Costs for initial development of strategy

Nine LLFAs provided information on the costs for the initial development of their strategy. Reported costs ranged between £7,000 -£37,000. The variation may be partly explained by differences in interpretation of what should be included, e.g., some of the figures below represent the costs of commissioning consultants to develop a strategy, without any additional direct LLFA costs added. Others are estimates of the overall cost to the LLFA. The lowest figure (£7,000) in the range was attained through the LLFA participating in a collaborative procurement exercise with adjacent LLFAs.

All of the figures reported were significantly below those forecast in Defra’s 2009 Impact Assessment, which assumed significant input from specialist contractors as well as significant LA staff time. Two LLFAs reported estimated staff costs of £15,000 and £20,000 respectively. The Defra Impact Assessment estimated these as being £15,000.

³⁶ Taken from Defra Impact Assessment 2009.

³⁷ The cost estimates in the Impact Assessment were based on the preparation of Surface Water Management Plans, rather than Local Flood Risk Management Strategies. The costs listed in the table include the costs of specialist contractors (estimated at 75-150,000) and additional LA staff costs (estimated at 15,000).

³⁸ Defra assumptions were that plans would be updated every five years and that this would cost around a third of the cost of developing the original plan.

Table 6.2: Costs of initial development of strategy

LLFA	Cost (£)
LLFA1	7,000
LLFA2	15,000
LLFA3	35,000
LLFA5	24,000
LLFA8	12,000
LLFA10	20,000
LLFA13	37,000
LLFA18	17,000
LLFA29	30,000

6.2.3 Costs for reviews of Strategy

Only two LLFAs provided costs for the review of the strategy. This is unsurprising given that strategies are expected to have a lifespan of five years and no local flood risk management strategy has yet been in place that long. Reported costs were £2,000 (pa) and £20,000. Both figures are lower than those estimated by Defra's Impact Assessment.

6.2.4 Costs for development and management of partnerships

Five LLFAs provided information on the costs associated with the development and management of partnerships. Four of the LLFAs reported costs between £2 -10,000 (presumed to be annual costs) and these figures are consistent with those estimated by Defra. The fifth LLFA reported a cost of £40,000. This authority was the only county council who provided data against this cost element. Counties had more partners to engage and this LLFA had established partnership groups at two different levels, i.e. it was a relatively resource-intensive approach.

Table 6.3: Costs of development and management of partnerships

LLFA	Cost (£ p.a.)
LLFA2	5,000
LLFA3	2,000
LLFA10	40,000
LLFA13	10,000
LLFA18	6,500

6.2.5 Costs of section 19 investigations

Costs were provided by four LLFAs. As with other cost elements there was significant variation in the figures reported with the range being between £5-£35,000 per annum. This is unsurprising given the variation in approaches to section 19 investigations which the evaluation has highlighted. One LLFA estimated a cost to their authority of £15,000 per investigation. Both the lower and higher figures exceed those estimated in Defra's impact assessment.

Table 6.4: Costs of section 19 investigations

LLFA	Cost (£)
LLFA3	7-10,000 p.a.
LLFA8	15,000 per investigation
LLFA10	35,000 p.a.
LLFA13	5-10,000 p.a.

6.2.6 Costs of initial development of asset registers

Seven LLFAs provided cost estimates for the initial development of their asset registers. Again, the wide variation is unsurprising given the variation of experiences in developing asset registers and the variation in approaches adopted. The lowest cost quoted was £3,000 and the highest £44,000. These figures are below the low and high range figures estimated by Defra.

Table 6.5: Costs of initial development of asset registers

LLFA	Cost (£)
LLFA2	5,000
LLFA2	5,000
LLFA3	10
LLFA8	13,000 since 2010
LLFA10	5,000
LLFA13	44,000
LLFA20	3,000
LLFA28	35,000

6.2.7 Costs of on-going management of asset registers

Four LLFAs provided estimates of the on-going costs associated with the management and maintenance of their asset registers. The figures provided were all

below and in some cases significantly below the costs estimated by Defra’s impact assessment. However, the case study findings suggest that very few LLFAs have got to the stage of ongoing management and most are still at the development stage.

Table 6.6: Costs of ongoing management of asset registers

LLFA	Cost (£)
LLFA2	3,000
LLFA3	2 - 5,000
LLFA13	15-20,000
LLFA20	10,000

6.2.8 Costs of consenting

The case studies also generated some information on the costs of consenting and this is quoted in section 4.4.6. Costs of individual consents were estimated at between £250-700, whereas the fee which LLFAs can charge is limited to £50.

6.2.9 Summary

It is difficult to draw conclusions from the available data on costs because the data is limited and inconsistent and because the approaches adopted in each LLFA have varied significantly. Costs have been determined partly by the requirements but also by the different starting points of LLFAs (e.g., whether or not they had existing available data on assets, whether or not they had a surface water management plan which could provide a building-block for their strategy) and by the different approaches adopted (e.g., whether or not they set up formal partnership working arrangements, the scope and level of detail of their asset register, the level of detail applied to section 19 investigations). With those cautions in mind, the limited data available suggests that:

- Strategies may have been significantly less expensive to develop than Defra anticipated. The Defra impact assessment assumed that there would be significant input from specialist contractors and this has not always been the case;
- Section 19 investigations have proven more costly than anticipated;
- The costs of developing asset registers varies significantly, depending on the context (nature, extent and complexity of the drainage network), the level of existing data held by the LLFA and the scope and level of detail adopted by the LLFA; and

- The costs of performing the consenting role significantly outstrip the fees which LLFAs can charge to applicants.

7. Impact of the FWMA

7.1 Changes from baseline

7.1.1 Baseline position – pre FWMA

This section summarises the changes which have occurred in local flood risk management since the introduction of the FWMA, relative to the baseline situation in 2010. It draws on the detailed findings presented in sections four to six, and relates them to the theoretical framework for the evaluation that was presented in section two.

This section looks at what has changed, and begins to explore why changes have happened. A fuller assessment of the extent to which changes are attributable to the FWMA is presented in section 7.3.

Our assessment of the situation prior to the FWMA is based on the document review which was undertaken during the early stages of this study. The documents reviewed are listed in appendix A.

Figure 7.1 summarises the baseline situation for local flood risk management.

Figure 7.1: Baseline position for local flood risk management in 2010

1. Sharing of data between authorities was undertaken as required for the purposes of developing specialist studies and since 2008 occurred more regularly as part of the development of surface water management plans;
2. Staff in local authorities with relevant knowledge of integrated drainage and surface water management was limited and not widespread;
3. Production of strategic assessment of surface water was confined to those authorities that undertook surface water management plans or those that took part in the integrated urban drainage studies;
4. Complex institutional arrangements made data sharing and collation of flood data across authorities unusual and unlikely to occur;
5. Partnerships were established and existed usually for project specific purposes e.g., for the purposes of undertaking projects such as surface water management plans and strategic flood risk assessments;
6. Relationships between officers in public bodies (e.g., tiers of local authorities and EA) were established. Partnership working with water companies was inconsistent and limited, constrained by regulatory requirements and commercial sensitivities;
7. Data for the purposes of risk assessment was often incomplete, out of date and sometimes commercial or licensing arrangement made sharing difficult;
8. Assessment of all sources of flood risk had been lacking due to the absence of

- detailed modelling;
9. Flood risk management was ad-hoc and inconsistent, mainly in reaction to an experience of recent serious flooding in the area;
 10. Investigation of local flooding incidents was most commonly undertaken by the lower tier authority (drainage authority);
 11. The extent of flood investigations was ad-hoc and inconsistent due to lack of clarity on responsibilities and accountability;
 12. Mapping flood risk and drainage assets was undertaken by authorities mainly for local authority owned assets but the extent of the information was inconsistent. Recording of water company or privately owned assets was unusual (15.2% and 7.4% respectively);
 13. The extent of data recorded for assets is less consistent with condition assessments unusual for water company (10.4%) or privately owned assets (10.5%) but more likely for local authority owned (38.4%);
 14. Estimates of spending by all local authorities on flood risk management pre-2010 varied from £6 million per year (according to Defra³⁹) to nearly £20 million per year (according to LGA).

Source: document review undertaken during this study.

This understanding of the baseline position pre-2010 and the intended activities, outputs and outcomes of the FWMA, developed through the logic model and theory of change, informed the definition of success criteria for the FWMA. These formed part of the theoretical framework for this evaluation. The success criteria can be used to assess how far the current situation has changed from the pre-2010 baseline, as described in the following section.

7.1.2 Observed changes from baseline

Detailed findings from the evaluation research have been presented in sections four to six. Table 7.1 summarises the evidence of changes against the success criteria, relative to the baseline position described above.

Table 7.1: Summary of overall changes relative to the baseline

Success criterion	Observed change relative to baseline
Local flood risk management strategies	
Local flood risk management strategies are	The outputs review conducted as part of this evaluation found that, by April 2015, 90 out of 152 LLFAs (59%) had published their final or consultation draft strategies. But the strategies varied in quality. More

³⁹ Defra estimated £6m a year being spent on actions falling out through Pitt recommendations through previous formula grants i.e., those that local authorities were already spending on LLFA activities

<p>produced, which have clear objectives and an assessment of risk and measures and how it will be funded.</p>	<p>than 90% of strategies set clear objectives and considered funding for measures, but only just over 30% provided an assessment of risk. Strategies were also weak in providing information on the costs and benefits of measures. Case study research found that most LLFAs were progressing their strategies towards publication. The most commonly cited barriers to strategy preparation, in the telephone survey, were staff resources (75% of LLFAs) and flooding incidents (54%), followed by budget constraints (36%). The case study research found that delays sometimes resulted in a better strategy being produced, because of time being taken to review data and learn from recent flood events.</p>
<p>Assessment of risk is informed by accurate data from a range of partners.</p>	<p>91% of respondents to the telephone survey reported that the FWMA had led to improved data sharing between risk management authorities. This was consistent with case study research which found data sharing had improved in almost all case study LLFAs and had informed both strategy development and flood investigation reports. While some problems remained with data sharing, such as issues with commercial sensitivity, confidentiality and the compatibility of data formats, the case studies suggested that significant progress had been made in sharing data, particularly between LLFAs and water companies.</p>
<p>Flood risk management partnerships are established with all risk management authorities and demonstrate cooperation.</p>	<p>For the LLFAs who have published their strategy, around 90% had involved water companies and the EA in strategy preparation. About a third had involved lower-tier councils and IDBs, where relevant, in strategy preparation, while a few had involved other bodies. 82% of these LLFAs reported that they still meet with stakeholders, mostly on a fixed and formal basis. For comparison, 56% (48 out of 86) LLFAs who were involved in LFRM prior to the FWMA reported that they were active in some form of regional or local flood risk partnership before the FWMA. Most case study LLFAs also attributed improved partnership working with risk management authorities to the Act. Most case study LLFAs reported that relationships with water companies had become more open and constructive, although there were a few exceptions.</p>
<p>Leadership on local flood risk is provided by the LLFA.</p>	<p>The case study research found that most LLFAs were perceived, by themselves and by other risk management authorities, to be providing leadership on LFRM. In some cases, this was perceived to be more of a coordination role than a leadership role. Some case study respondents pointed out that LLFAs were better placed to provide leadership on strategic issues than on incident response, which tended to be shared across several agencies. The case studies suggested that the commitment of elected members to LFRM was patchy: while some members were reported to be very committed, most only became concerned about flood risk when their local area had recently been impacted by an incident.</p>
<p>Flood investigation reports (section 19)</p>	

<p>Flood Investigation reports are published for locally defined 'significant' floods</p>	<p>The telephone survey found that 64% (n=68) of LLFAs had carried out flood investigations under section 19 whilst 35% (n=39) had not. Of those that had carried out these investigations, 59% (n=40) had published the findings on their website. 66% (n=66) of LLFAs reported that they had a publicly available policy on undertaking section 19 investigations. This was consistent with case study evidence which found that many LLFAs had commenced investigations under section 19, although not all findings had yet been published. The locally-defined thresholds for significance varied between case studies, but the threshold was typically set around 5 properties. Low thresholds could generate a large number of less detailed flood investigation reports.</p>
<p>Flood investigations result in resolution of flooding issues.</p>	<p>The case study research found that risk management authorities generally found section 19 investigations to be useful in identifying the causes of flooding incidents, which was the first step to addressing these issues. Some investigated in more depth than others. Investigations helped to generate data on costs and benefits which informed business cases and funding bids for flood alleviation schemes. However, in some cases, publication of the reports was contentious, as they sometimes allocated blame to a particular risk management authority and could have a negative impact on relationships between risk management authorities.</p>
<p>Problems, where possible, are resolved more quickly and responsibilities are clarified and acted on so the public know who is responsible and what action is being taken</p>	<p>The case study research found that many section 19 investigations were time-consuming and slow, often taking a year or more. Although they were felt to be ultimately useful in informing the public, they were often published a considerable time after the event which limited their contribution to public communication.</p>
<p>Local authorities use findings of investigations to improve understanding of flood risk in their area</p>	<p>The case study research found that most LLFAs who undertake section 19 investigations were using the findings to improve the understanding of flood risk in their area. In some cases, the threshold for these reports could be raised so that learning was still generated but with reduced workload.</p>
<p>Asset registers (section 21)</p>	

LLFAs have set up and populated registers of structures important for flood management and asset ownership is understood.

81% of respondents in the telephone survey reported that their LLFA has an asset register that was available for public inspection⁴⁰. However, the case studies revealed wide variation in scope and level of detail. In most cases, the asset register was reported not to be online but to be available on request. Case study findings were broadly consistent: most LLFAs had undertaken some work on their asset registers but many were still a work in progress. 79% of telephone survey respondents said that their register included third party assets. Case study evidence suggested that some covered not only LLFA assets but some water company and EA assets as well. The case studies generated mixed evidence about the usefulness of asset registers: some respondents found them useful in providing information on asset ownership and condition, for planning, maintenance and flood risk management purposes; others could foresee them being useful but only after further development (and some expressed concern that resource constraints would preclude this); but others felt that asset registers were not sufficiently useful to justify the time and cost of preparing and keeping them updated.

Consenting on ordinary water courses (section 23)

Local authority meeting responsibility to assess applications for consents for works on ordinary watercourses and proportionate use of enforcement powers.

While responsibility for consenting on ordinary water courses has been transferred from the EA to LLFAs, there were some gaps in implementation of these responsibilities by LLFAs.

In the telephone survey, 78% (n=78) of LLFAs reported that they set clear criteria for the types of work requiring consent under section 23 of the 1991 Land Drainage Act. 65% of all LLFAs reported that they have made these criteria publicly available on the council website, but the remaining 35% had not. Only 10% (n=11) of LLFAs had delegated consenting to another organisation (e.g., an IDB or lower-tier council). This is consistent with case study findings that implementation of ordinary watercourse consenting and enforcement was patchy. In some cases (e.g., where delegated to IDBs) this was being undertaken well, but in some other cases there was little consenting activity and in many there was little checking of compliance or enforcement and a fear that consents were not always being sought when required.

Only 11% of LLFAs (n=12) reported that they had introduced byelaws for controlling activities relating flood risk or flood risk management, although a further 49% reported that they had considered introducing byelaws. The case studies suggested that there was a low level of understanding within LLFAs as to how and whether byelaws could be useful in LFRM.

78% of LLFAs (n = 84) responding to the telephone survey said that

⁴⁰ As already noted, not all of these were accessible for the purposes of this evaluation.

	<p>they had never used their powers to carry out flood risk management works under section 14a. But some others had used these powers several times. Case study research found a similar mix of experiences. Some LLFAs reported that they carried out works to ordinary watercourses themselves when absolutely necessary with little hope of recovering costs from the riparian owner.</p>
<p>Consents are determined within the 2 month timeframe.</p>	<p>There was little evidence on the time taken to determine consents but no mention of delays being a problem. Several case study authorities reported that the charge for consenting was inadequate and did not fully cover the costs of processing an application for consent.</p>
<p>Flood risk not increased on ordinary watercourses</p>	<p>This is difficult to assess, given the patchy nature of progress on ordinary watercourse consenting and enforcement. But most LLFAs reported success in raising capital funds for investment in flood alleviation measures, some of which may have applied to ordinary watercourses.</p>
<p>Staffing and capacity</p>	
<p>Increase in capabilities and capacity of flood risk management staff within LLFAs in relation to their new roles under the FWMA</p>	<p>Staff resources: 77% of respondents to the 2014 online survey reported that their authority has a flood risk management team. On average, each LLFA had 3.5 FTEs, a significant increase from pre-FWMA levels, but this varied widely from 0.5 to 20 FTE. 30% of online survey respondents said that their LLFA shares staff resources with other LLFAs, and 77% (n=111) had used external consultants in 2014 to deliver LLFA responsibilities and requirements. This was consistent with case study research, which found that staff resources had increased in all but two of the case study LLFAs. Most case study LLFAs had made some use of external consultants, e.g., for strategy development, asset surveys or modelling work.</p> <p>Staff capability: The telephone survey found that 40% of the respondent group was over 50. While most LLFA staff have considerable professional experience, over 45% (n=65) have less than 5 years' experience in the specific field of flood risk management. This was consistent with case study research which found that – in broad terms and with some exceptions – there were two main groups of LLFA staff: experienced staff (e.g., highway drainage engineers) some of whom were nearing retirement, and younger staff who were qualified in flood risk management but less experienced. The online survey asked respondents to self-rate their capabilities in a number of fields, from 2012 to 2014, and found that performance on most indicators showed a continuous improvement (e.g., 'level of understanding of the FWMA'; 'skills to carry out flood risk enforcement and consenting role'). Capability appeared to be static for three indicators: 'level of expertise in SuDS', 'expertise in GIS mapping and data management' and 'ability to designate and manage flood risk assets and features'.</p> <p>Revenue funding: 49% (n=52) of respondents in the telephone</p>

survey felt that funding for LFRM was less than it might otherwise have been due to cuts, although 45% felt that it was the same as it would have been anyway. 61% (n=65) said that all New Burdens funding had been ring-fenced internally for LFRM, but 27% (n=29) said that only a proportion had been spent on LFRM. It was difficult to assess the change from pre-FWMA situation owing to the lack of detailed data and poor recall of pre-FWMA budgets, but 33% (n=35) said there had been no set budget for LFRM prior to the FWMA. 57% of respondents (n=61) said that their authority had contributed funds additional to the New Burdens funding. The case study research found that budgets for LFRM had generally increased to some degree within LLFAs, but some LLFAs reported cuts elsewhere affecting LFRM (e.g., cuts to street maintenance budgets; cuts in lower-tier-level resourcing of LFRM; and cuts within the EA) and most LLFAs were concerned that current and future levels of revenue funding would hinder their ability to deliver their responsibilities. It is difficult to assess whether the overall resourcing of LFRM had increased, across all risk management authorities.

Capital funding: 78% of LLFAs (n=83) reported that they had secured funding for capital projects and / or local flood risk management activities through the EA's investment programme. 50% of LLFAs accessing wider funding (n=23) had successfully joint bid with another LLFA for partnership funding. Since being created, 44% of LLFAs (n=47) reported having secured external funding outside pre-2010 sources and new burdens funding. This was consistent with case study research which found that most case study LLFAs had been successful in securing some funding for capital projects, from the EA, Defra or other sources.

7.1.3 Typical journeys travelled for different types of LLFA

While Table 7.1 provides an overview of changes from the baseline, this section explores the extent to which changes have been made by local authorities in different contexts. In this section we will make use of the typology presented in Table B.0.1, which can be used to explore these different contexts. We will use the case study evidence to explore different journeys for LLFAs with different starting points in terms of:

- Level of flood risk;
- Significant flooding incidents 1995-2010;
- Significant flooding incidents post 2010;
- Existing levels of planning for flood risk management in 2010;
- Delegation of LLFA powers;

- Level of deprivation; and
- LA type (i.e. two-tier and single-tier).

Table 7.2 below presents the typology data used to select case study LLFAs, together with our subjective assessment of their progress towards the intermediate outcomes or 'stepping stones' towards LFRM that were presented in Figure 2.3. The subjective assessment is based on case study evidence, combined with responses by these authorities to the telephone and online survey (where available).

Table 7.2: Journey travelled by case study LLFAs (two-tier LLFAs in bold)

Key to levels:

Key to changes from 2010 to present:

	Lowest/none				
	Low/minimal	++	Significant increase	+/-	Mixed
	Moderate	+	Some increase	(-)	Decrease
	High/significant	=	Largely unchanged	(2.0)	Current fte

LLFA	Typology – pre 2010 baseline							Subjective rating of intermediate outcomes based on qualitative data								
	Flood risk ⁴¹	Pre 2010 events	Post 2010 events	Pre 2010 action ⁴²	Other pre-FWMA	Delegation	Deprivation ⁴³	Priority	Capacity (fte)	Revenue funding	P'ship	Data sharing	Level of FRA	Capital bids	Public comms	Strategy
LLFA1	1	No	No	2		No	1	+	(+) (1.5)	=	++	++	+	=	=	Yes
LLFA2	3	No	Yes	4		No	4	+	= (0.5)	=	+	++	++	+	=	No
LLFA3	3	Yes	Yes	1	SWMP	No	3	+	+	(1.0)	+	++	++	++	+	No
LLFA4	4	Yes	Yes	2	SWMP	No	1	++	++ (4.0)	++	++	++	++	++	+	Yes
LLFA5	2	No	Yes	1		Yes	1	=	+	(3.5)	+	+	+	++	=	Yes
LLFA6	3	Yes	Yes	3		No	2	+	+/- (2.0)	=	++	+	+	+	+	No
LLFA7	4	Yes	Yes	2	SWMP	No	3	++	++ (6.0)	++	++	++	++	++	+	No
LLFA8	2	Yes	Yes	1	Pre2010 team; SWMP	No	2	=	++ (6.5)	++	++	++	+	+	=	No
LLFA9	3	Yes	Yes	3		No	1	+	++ (4.0)	+	++	++	++	++	+	No
LLFA10	4	Yes	Yes	2		No	3	++	++ (5.0)	+	++	+	+	+	+	Yes
LLFA11	3	Yes	Yes	2	Pre2010 team	No	4	++	= (10.0)	=	++	++	++	++	+	Yes
LLFA12	2	Yes	Yes	4	Pre2010	Yes	4	+	++	+	++	++	++	++	+	Yes

⁴¹ 1 is low flood risk; 4 is high - number indicates which quartile the relative flood risk score falls into, based on Defra's figures on number of properties at risk (as used for funding).

⁴² 1 is low activity pre-2010; 4 is high – number indicates which quartile the LLFA falls into in terms of number of planned flood risk management actions in NI189 plans, which may not always be a reliable indicator of pre-2010 activity. The 'other pre-2010' column notes other indicators of pre-2010 activity.

⁴³ 1 is low deprivation; 4 is high – number indicates which quartile the average Index of Deprivation falls into.

LLFA	Typology – pre 2010 baseline							Subjective rating of intermediate outcomes based on qualitative data								
	Flood risk ⁴¹	Pre 2010 events	Post 2010 events	Pre 2010 action ⁴²	Other pre-FWMA	Delegation	Deprivation ⁴³	Priority	Capacity (fte)	Revenue funding	P'ship	Data sharing	Level of FRA	Capital bids	Public comms	Strategy
					team				(12.0)							
LLFA13	2	Yes	Yes	3		No	3	+	+(1.0)	+	+	++	+	+	+	No
LLFA14	1	Yes	No	3		No	1	+	+(1.0)	+	+	+	+	+	+	No
LLFA15	1	Yes	No	1		No	4	+	(<1.0)	=	++	+	+	=	=	Yes
LLFA16	3	Yes	Yes	1		No	2	=	++(4.0)	+	++	++	+	++	+	No
LLFA17	4	Yes	Yes	2	Pre 2010 team;	No	4	+	+(3.0)	++	++	+	+	++	++	Yes ⁴⁴
LLFA18	1	Yes	Yes	3		No	3	+	+(2.0)	+	++	++	++	++	+	No
LLFA19	2	Yes	Yes	3		No	3	+	++(7.0)	++	++	++	+	++	+	Yes
LLFA20	1	Yes	No	4	SWMP	No	4	++	+(3.0)	+	+	++	+	++	=	Yes
LLFA21	1	Yes	Yes	2		No	3	+	+(3.0)	+	+	++	+	++	=	No
LLFA22	2	No	Yes	4	SWMP	No	3	+	=(1.0)	+	+	++	+	=	+	No
LLFA23	1	Yes	Yes	1		No	3	+	+(2.8)	+	+	++	+	++	=	Yes
LLFA24	1	No	No	3		No	2	+	+(2.0)	+	+	++	++	++	++	No
LLFA25	1	No	No	3	Pre2010 team; SWMP;	No	3	+	(-) (3.0)	++	++	+	+	++	++	No
LLFA26	3	No	Yes	4	SWMP.	No	2	+	+(2.0)	+	+	++	++	+	=	Yes
LLFA27	4	Yes	Yes	3		Yes	1	+	+(3.0)	+	++	++	+	++	+	Yes
LLFA28	2	No	No	3	PFRA	No	3	=	(-) (2.0)	+	-	=	+/-	=	=	No
LLFA29	3	Yes	Yes	4		Yes	2	+	+(2.5)	++	++	++	++	+	+	No
LLFA30	1	Yes	Yes	2	Pre2010 team;	No	1	+	=(4.0)	=	++	+	+	++	=	No

⁴⁴ Strategy published just prior to case study research.

Key messages from the table are analysed below. Firstly, we examine progress for each of the 'intermediate outcomes' listed in Figure 2.3, in relation to the different elements of the typology:

- **Level of priority.** Most of the case study LLFAs had seen some increase in the priority given to local flood risk management, although political priority was limited in most cases. There was some correlation between the level of flood risk (as assessed by Defra) and the level of priority, but – in spite of some case study stakeholders suggesting there was – no apparent correlation between flood events (pre and post 2010) and reported levels of political priority. Case study comments suggested that the influence of flood events on political priority was fairly short lived: elected members tended to become deeply concerned when their particular ward was affected by an event, but their interest tended to decline in subsequent years. In one case, members had not increased council funding for local flood risk management despite recent incidents because they felt that the incidents were the fault of the water company.
- **Staff capacity and understanding.** Increases in staff capacity for local flood risk management were observed in almost all case study LLFAs. LLFAs which had not experienced flood events since 2010 tended to have smaller increases in capacity or, in a couple of cases, a decrease in staff capacity. Increases in staff capacity tended to be greatest for county councils, with the exception of those which had delegated some responsibilities to lower-tier councils or IDBs. Those single-tier authorities which had retained their drainage teams pre-2010 tended to have larger flood management teams. Some case study LLFAs expressed particular concern about staff constraints, either because they had small teams (e.g., 1 FTE or less in a few cases) and/or because they had been busy responding to – and preparing section 19 investigations for – recent flooding events. Those with small teams tended to have made more use of external consultants, often using new burdens funding. The online survey found that staff expertise and confidence in local flood risk management was generally increasing, although some case study LLFAs expressed concern about the upcoming retirement of experienced drainage staff.
- **Revenue funding.** Estimates of changes in revenue funding since pre-2010 are uncertain because of the difficulty in obtaining comprehensive budget information, particularly for the baseline. The case studies found a mixture of situations, ranging from new burdens funding being fully ring-fenced for local flood risk management to those where only part of the funding was ring-fenced. Some commented that recent flood events had justified continued ring-fencing, although no direct correlation is apparent between recent flood events and reported funding situations. No clear-cut relationship can be seen between the level of deprivation and the reported funding situation for local flood risk management. Although a few LLFAs in deprived urban areas reported that funding had not increased significantly, this may have been partly because these unitary authorities had drainage teams already in place prior to 2010.

- **Partnership working.** Most of the case study LLFAs reported improvements in partnership working with other risk management authorities, including the EA, water companies and neighbouring authorities. In some cases, they attributed this more to work on the surface water management plan and/or preliminary flood risk assessment than to the FWMA. Only one LLFA reported a decline in partnership working, which they attributed to cutbacks at the EA. It may be significant that this area had not experienced local flooding in recent years, since some LLFAs mentioned that flood events tested and developed partnership working between risk management authorities. However, there is no clear-cut relationship between the incidence of flood events and reported improvements in partnership working. Some water company representatives mentioned the difficulty of servicing many different LLFA partnerships, and reported that it was difficult to persuade their operational staff to attend partnership meetings. This may vary according to the geographical spread of LLFAs covered by a particular water company. There was some variation in LLFA experiences of working with lower-tier councils and IDBs. The most positive relationships were reported by the LLFAs which had delegated responsibilities (and cascaded some new burdens funding) to lower-tier council level. Other county LLFAs tended to express concern about capacity within some lower-tier councils.
- **Data sharing.** Similarly, all case study LLFAs reported improvements in data sharing with risk management authorities, particularly with water companies. Many attributed this to the FWMA, although some felt that it had started during the surface water management plan (which were precursors to the local flood risk management strategies required by the FWMA) or preliminary flood risk assessment processes which also started in 2010. There were no clear patterns as to which LLFAs reported more improvement in data sharing. Flood investigations tended to trigger more sharing of information, but this could also reveal sensitivities about sharing operational data on flooding incidents which might be subject to data protection issues or might be used to attribute blame.
- **Level of flood risk assessment.** This is based on our assessment of the stakeholder views on the extent to which a given LLFA was moving from an incident-led approach (responding to flood events when they happen and prioritising areas which have been affected by events) to a more risk-based (prioritising areas which have been assessed as being at greatest risk) and proactive approach to local flood risk management. It is a subjective and uncertain measure of progress. There is some indication that LLFAs with larger in-house teams are doing better in moving to a risk-based approach, but there is no particular correlation between those who have produced a strategy and those reported to be taking a risk-based approach. This is consistent with the document review, which found that only about a third of strategies contained comprehensive information on flood risk, despite the presence of preliminary flood risk assessments in all LLFAs. Nevertheless, many stakeholders referred to a general shift towards a risk-based approach as being one of the principal benefits of the Act.

- **Capital bids.** Most of the case study LLFAs reported that they had succeeded in securing some form of capital funding, which ranged from EA partnership funding for capital schemes to Defra Pathfinder funding for community resilience measures, and supporting residents who were claiming ‘repair and renew’ grants which would help to fund property-level protection. There was some indication that those with lower staff resources were less likely to have been successful in securing capital funding, possibly owing to the time-consuming nature of funding applications. Also, there were a few LLFAs with low levels of flood risk, and no recent flood events, who had not pursued capital schemes.
- **Public communication.** Most of the case study LLFAs reported that the FWMA had little impact on public understanding of flood risk and risk management authority roles and responsibilities, despite – in some cases – significant efforts to engage with the wider public. Publication of strategies and section 19 reports was reported to provide information for those who were motivated to look for it online, but this was felt to be a small proportion of the population. Several case study LLFAs reported that communities who had recently experienced flooding did tend to be easier to engage, and in some cases this had been facilitated by Defra-funded Pathfinder projects. With a few exceptions, where LLFAs had pre-existing drainage teams or were particularly engaged with flood risk issues, those LLFAs which had not experienced recent flooding tended to report lower communication and engagement with their communities.

Having considered progress on each of the intermediate outcomes in relation to different aspects of the typology, we now use the case study evidence to construct examples of ‘typical journeys’:

- **Retainers.** LLFAs 8,11,12,17, 25 and 30 were authorities (all but one unitary) which had retained their drainage teams. As a result, they have tended to have well-staffed teams and relatively good levels of activity on local flood risk management generally. They have progressed well in terms of implementing their statutory responsibilities.
- **Resource-constrained.** LLFAs 1, 2, 3, 6, 13, 14, 15, 18, 22, 24, 26 and 28 were unitary authorities which had relatively small flood-risk teams (2 FTE’s or less). In cases where flood events had hit post 2010, these authorities tended to find themselves resource-constrained. They tended to make more use of external consultants, and to struggle with producing the local flood risk management strategy at the same time as producing section 19 reports.
- **Counties.** LLFAs in two-tier areas (e.g., LLFAs 4, 7, 10, 12, 16, 29) tended to be better resourced and to be active in local flood risk management, not least because they tended to have experienced post 2010 flood events somewhere within their large area of responsibility. They also tended to receive higher levels of new burdens funding because cumulatively they have higher numbers of properties at risk from flooding. In some ways, the FWMA was more challenging for them

because of the absence of a previous drainage function, the subsequent loss of drainage expertise at the lower-tier level and the added layer of engagement needed. Some had smaller teams because they had delegated responsibilities to lower-tier councils or IDBs.

- **Regional co-operators.** Some LLFAs which had cooperated with neighbouring authorities at sub-regional level had been able to make cost-effective progress, by sharing resources (e.g., external consultancy studies) and sharing good practice. This category is not mutually exclusive from the others.

7.2 Activities, outputs and outcomes

This section assesses the contribution of the FWMA to the activities, outputs, short-term outcomes and long-term outcomes set out in the logic model (Appendix C). As outlined in section 2, the evaluation focused primarily on process rather than impact, so our understanding of long-term outcomes is somewhat limited.

7.2.1 Activities and outputs

Activities and outputs are the most immediate results expected from the FWMA: the things that LLFA and other risk management authorities were supposed to do and to produce. In the table below, activities and outputs highlighted in **green** are well-supported by evidence; those in **amber** are supported by some or mixed evidence; and those in **red** are largely contradicted by evaluation evidence. More detail on these activities and outputs can be found in Table 7.1, which presents evidence on the change from the pre-2010 baseline.

Table 7.3: Assessment of evidence for achievement of activities and outputs set out in the logic model

Activities	Outputs	Assessment
<p>1. Lead Local Flood Authority (LLFA) to:</p> <ul style="list-style-type: none"> • Manage local flood risk (LFR) • Operate within the given statutory framework • Develop, maintain, apply and monitor their LFRM Strategy • Investigate flooding incidents as necessary and identify relevant authorities • Establish and maintain a register of structures 	<p>LLFA have:</p> <ul style="list-style-type: none"> • Published local strategies, or are consulting on them • Established local FRM partnerships • Undertaken and published investigations • Used and found useful guidance on: co-operation and sharing information (s7); duty to maintain registers; used LGA guidance 	<p>Evidence from the telephone survey, online survey and case studies and review of outputs suggests that most LLFAs were undertaking some activities to manage local flood risk, operating within the statutory framework set by FWMA.</p> <p>The telephone survey found that 59% of LLFAs (n=90) had published a final or consultation version; others were still developing their strategies. Maintenance and monitoring of strategies was more patchy, but all of the LLFAs who had completed their strategy reported carrying out at least one of the actions in the strategy. The EA has led on reviewing strategies to</p>

Activities	Outputs	Assessment
<p>which are believed to have significant impact on LFR</p> <ul style="list-style-type: none"> • Exercise powers to request information in connection with their responsibilities • Ensure local LFRM strategies are consistent with national strategy • Exercise powers to undertake flood risk management works • Exercise byelaw making powers • Administer section 23 consenting scheme 	<ul style="list-style-type: none"> • Set up and populated registers of structures important for LFRM which are readily available to the public • Undertaken flood risk management works • Made byelaws • Issued (s23) consents for watercourse linked activities • Secured additional capital funding, e.g., through partnership funding • Funded relevant LFRM activities • Attended capacity building workshops 	<p>ensure they are consistent with national strategy. Our analysis suggests that about 67% fully demonstrated consistency with national strategy principles.</p> <p>Most LLFAs have established local FRM partnerships with other risk management authorities.</p> <p>Almost all LLFAs which have had flooding incidents since 2010 have undertaken section 19 investigations and identified the authorities responsible. Not all have yet been published, but most LLFAs have been active in requesting information to conduct the investigations.</p> <p>Most LLFAs have made some progress to establish and maintain an asset register, but few are complete.</p> <p>Some LLFAs have used works powers but few have exercised their byelaw making powers. Administration of the section 23 consenting scheme by LLFAs has been inconsistent.</p>
<p>2. Within Internal Drainage Districts, Internal Drainage Boards (IDBs) to continue their consenting and enforcement role on ordinary watercourses.</p>		<p>Where IDBs exist, they have continued their consenting and enforcement role on ordinary watercourses. One case study second-tier authority has delegated the consenting and enforcement role to the consortium of IDBs across a wider area.</p>
<p>3. IDBs and lower tier authorities to continue to exercise their permissive powers for works on ordinary watercourses.</p>		<p>There has been inconsistent use of permissive works powers on ordinary watercourses by IDBs and lower tier authorities. Some lower tier authorities perceive that they no longer have access rights to ordinary watercourses, and understand this to be the role of the upper-tier LLFA. Some LLFAs are concerned about lack of resources for LRFM at lower-tier council level.</p>
<p>4. Local Highway Authorities to continue to exercise their responsibilities for the management of local highway drains;</p>		<p>Local highway authorities were generally reported to be continuing to exercise their responsibilities for the management of local highway drains. In some cases, highway maintenance schedules were being better integrated with LFRM to ensure that grilles and gulleys were appropriately maintained. But some case study LLFAs reported that budget cuts were affecting routine maintenance.</p>

Activities	Outputs	Assessment
5. Water companies to continue to exercise their responsibilities for public surface water sewers and drains		Water companies were generally reported to be continuing to exercise their responsibilities for public surface water sewers and drains.
6. LLFA funding allocated for LFRM is spent on LFRM activities		About three in five LLFAs in the telephone survey reported that all new burdens funding had been ring-fenced internally for LFRM, but more than a quarter said that only a proportion had been spent on LFRM.
7. Capacity building workshops are attended by LLFA staff and e-learning and guidance are utilised		The online survey found that capacity building workshops had been attended by around 50% of respondents (rising to 67% for the workshop on SuDS and SAB) and that e-learning modules had been used by 44% of respondents. 91% of respondents to the telephone survey were aware of LGA guidance on LFRMS, and 86% reported that they had used it or were planning to do so.
8. Public report flooding incidents to LLFA		Case study research suggested that the public do not consistently report flooding incidents to the LLFA. Incidents are reported to a range of agencies including lower-tier authorities, the EA, the water company and the LLFA, depending on the type of incident and the level of understanding of the public. Incident response is also spread across several bodies: for example, lower tier authorities generally hold sandbags for use if a flood is imminent. Several risk management authorities suggested that some incidents are under-reported by the public owing to concern that reporting will affect their property values or insurance.
9. Other risk management authorities share data and engage in partnership working		There is evidence of good data sharing and partnership working between risk management authorities including, increasingly, LLFAs and water companies.

7.2.2 Short-term and long-term outcomes

The activities and outputs listed above were expected to lead to certain short-term and longer-term outcomes. Table 7.4 below considers the contribution of the FWMA to short-term outcomes, while Table 7.5 considers its contribution to long-term outcomes. The same key is used in both these tables: positive progress is highlighted in **green**; those in **amber** are supported by some or mixed evidence of progress; and those in **red** are largely

contradicted by evaluation evidence. The status of those highlighted in **blue** cannot be adequately assessed using the evaluation evidence.

Table 7.4: Assessment of evidence for contribution to short-term outcomes

Short-term outcomes	Assessment
<p>LLFA outcomes:</p> <ul style="list-style-type: none"> • LLFA able to better manage local flood risks 	<p>There is some evidence that LLFAs are better able to manage local flood risk. Many stakeholders in the case study research identified benefits from strategy development in terms of prioritising action and supporting funding bids, even where LLFAs had been actively involved in addressing local flood risk prior to FWMA. Most stakeholders felt that the requirement to produce local flood risk management strategies had led to more proactive and coordinated management of local flood risk.</p> <p>In the case studies, there was a difference in perception between two-tier areas (where most LLFAs felt that the changes introduced by FWMA were enabling better strategic planning of flood risk management) and single-tier areas (where fewer LLFAs felt that it was doing so). While the Act has been more challenging to implement in two-tier areas, its impact may have been greater in these areas because they did not previously have drainage responsibilities.</p>
<ul style="list-style-type: none"> • LLFA have improved knowledge of LFRM 	<p>Most stakeholders felt that the FWMA requirement to produce local flood risk management strategies has led to a more comprehensive understanding of local flood risk. This is supported by the findings from the online survey, in terms of growing confidence and capability within LLFA teams.</p> <p>The FWMA has also contributed to a step-change improvement in the investigation of flooding incidents. This has helped to build a greater understanding of risks and, in many cases, has enabled appropriate responses to be developed.</p> <p>There were more mixed views on the contribution of asset registers to flood risk management, but some stakeholders felt that these could make a significant contribution to local flood risk management, if they were more fully developed.</p>
<ul style="list-style-type: none"> • LLFA leadership role is clearer and better understood and demonstrated 	<p>Most case study stakeholders felt that the LLFA in their area was demonstrating leadership in the management of local flood risks. A number of stakeholders suggested that it had taken time for the LLFA to develop this role, and in some cases their position of leadership was felt to be still emerging. A number of stakeholders were keen to make the point that, whilst the LLFA may be leading, the contribution of other organisations remained crucial.</p>
<ul style="list-style-type: none"> • LLFAs feel they have the tools/knowledge to take a leadership role 	<p>Most LLFAs have increased their capacity and knowledge of LFRM since the pre-FWMA baseline. But constraints remain: 35% of respondents to the online survey reported that their single biggest concern in being able to manage local flood risk in their authority was lack of revenue funding to develop and deliver schemes, while a further 25% reported that their biggest concern was lack of capital funding to deliver schemes. 27% reported that their biggest concern was insufficient in-house capacity to make meaningful progress. While skills and knowledge have generally increased, some skills gaps remain (e.g., SuDS; funding streams and how to access them).</p>
<ul style="list-style-type: none"> • Accuracy of 	<p>There was a broad consensus that the FWMA had led to increased sharing</p>

Short-term outcomes	Assessment
<p>flood risk assessment is improved due to input/data from a range of partners</p>	<p>of data and information, both through strategy preparation and through flood investigations. In a significant number of the case studies, it was felt that this had led to greater accuracy and effectiveness in the management of local flood risk and had also informed the development of capital bids for schemes to reduce flood risk.</p>
<ul style="list-style-type: none"> Local strategies deliver the requirements of the EA national strategy 	<p>The outputs review found that all strategies prepared to date were at least partially consistent with the national strategy and that 67% (n=60) fully met the requirements of the EA national strategy. The remainder were not in conflict with the principles of the national strategy but did not provide sufficient evidence of compliance.</p>
<ul style="list-style-type: none"> Local strategies are useful, accessible and address LFR issues of concern to the public 	<p>Many stakeholders in the case study research felt that local strategies were useful in prioritising actions. However, a minority of stakeholders questioned the overall value of producing LFRMS, considering there to be too much overlap with other strategies, particularly surface water management plans. A significant number of LLFAs in the case study research reported that they had difficulties in gaining interest in the strategy from members of the public. No LLFAs referred to achieving large-scale public engagement. A few LLFAs reported that it was difficult to develop a strategy while managing public expectations of what could be delivered.</p>
<ul style="list-style-type: none"> Works reduce risk of floods 	<p>The telephone survey found that 58% of LLFAs (n=33) who had progressed actions from their strategies reported that these had reduced flood risk. In a small number of cases, it was reported that works had been tested by potential flood incidents and had been found to reduce flooding. The degree of FWMA influence on this type of work is considered in section 7.3.</p>
<ul style="list-style-type: none"> Byelaws reduce behaviours that increase flood risk 	<p>The telephone survey found that very few – if any – LLFAs had introduced byelaws, largely because of a perception that they were not needed. This suggests that the FWMA has not led to more byelaws aimed at reducing flood-risk-increasing behaviours, although there may be continued use of byelaws that were in place before the Act (e.g., by IDBs) and some LLFAs were considering the use of byelaws in future.</p>
<ul style="list-style-type: none"> Watercourse linked activities are properly assessed and do not present any increase in flood risk 	<p>Activities on ordinary watercourses continued to be assessed and consents enforced by IDBs, in those areas covered by IDBs. Activities on ordinary watercourses in LLFA areas appear to have been less consistently controlled since the transfer of consenting responsibilities from the EA. It is possible that activities on ordinary watercourses in some areas may have increased flood risks.</p>

Short-term outcomes	Assessment
<p>Outcomes for other LFRM agencies and the public:</p> <ul style="list-style-type: none"> • Greater co-ordination and sharing of information across authorities 	<p>Most stakeholders in the case study research agreed that there had been a significant improvement in partnership working and information sharing between risk management authorities. While some of this work had begun during the early development of surface water management plans and integrated urban drainage pilot studies, most felt that it had been given further impetus by the FWMA. In particular, relationships between water companies and other risk management authorities had improved. In some cases, better coordination was reported to be leading to joint action to tackle flood risks and better alignment of priorities and funding plans for different risk management authorities.</p>
<ul style="list-style-type: none"> • Reduced duplication across organisations involved in flood management 	<p>Clearer definition of roles and responsibilities for flood risk management were seen by many to be an important outcome of the Act (see section 5.1.3). But some areas of confusion remain, particularly in two-tier areas and in the complex inter-relationship between sewer and surface water flooding. These may still be giving rise to duplication, or to gaps between the roles of different risk management authorities.</p>
<ul style="list-style-type: none"> • Public receive quicker responses from LLFA in relation to local flood risk issues 	<p>It is not possible to assess this outcome with any certainty, as the evaluation did not involve consultation with the general public. Stakeholders did not refer to changes in response times in their responses to the research. Without longitudinal research, including pre-FWMA data (which we are not aware of), this outcome would be very difficult to assess robustly.</p>
<ul style="list-style-type: none"> • Information requests are responded to in an appropriate way 	<p>There is evidence that the FWMA led to improvements in the sharing of information between risk management authorities, which suggests that information requests were generally responded to. There were a few examples of requests for detailed operational data not being met, where these were requested for the purposes of a section 19 investigation which might implicate a particular risk management authority.</p>
<ul style="list-style-type: none"> • Roles and responsibilities for LFRM are clearer for both FRM authorities and the public 	<p>As explained in section 5.1.3, there was fairly wide consensus that FWMA had clarified roles and responsibilities amongst risk management authorities, although a minority disagreed. But there was a clear consensus that, despite considerable efforts on the part of some LLFAs, the FWMA had had no material impact on the level of public understanding of roles and responsibilities, except in areas subject to flooding incidents or engagement schemes such as Defra Pathfinder projects. Some stakeholders suggested that, by introducing a further body with flood risk responsibility, the FWMA had made it more challenging for the public to understand who does what. But others commented that better partnership working between risk management authorities implied less need for a clear public understanding of who is responsible for what.</p>

Table 7.5 considers the contribution of the FWMA to long-term outcomes, insofar as they can be assessed at this stage. The same key is used in both these tables: positive progress is highlighted in **green**; those in **amber** are supported by some or mixed evidence of progress; and those in **red** are largely contradicted by evaluation evidence.

The status of those highlighted in **blue** cannot be adequately assessed using the evaluation evidence at this stage.

Table 7.5: Assessment of evidence for contribution to long-term outcomes

Long-term outcomes	Assessment
<ul style="list-style-type: none"> • Improved understanding for all of roles and responsibilities for LFRM is well embedded 	<p>While the FWMA appears to have contributed significantly to improved understanding of risk management authority roles, some elements of the new roles, such as responsibilities for SuDs, consenting, byelaws and works powers, are still unclear to some LLFAs. It is too early to say whether these roles and responsibilities are well embedded. Further qualitative research with risk management authorities would be required to assess this more fully.</p>
<ul style="list-style-type: none"> • Improvement in management of local flood risk 	<p>There is some early evidence of improved management of local flood risk, and actions being taken to reduce flood risk, but it is too early to assess the impact of the Act with confidence.</p>
<ul style="list-style-type: none"> • Social, economic and environmental cost of flooding is significantly reduced 	<p>While some stakeholders anticipate that improved local flood risk management arising from the Act will reduce the risk of – and costs of – local flooding, there is as yet only limited evidence of this. To assess this, further research would be needed following the implementation of more of the measures being developed by LLFAs and their partners. However, the improvements in flood investigation introduced by the Act are likely to generate improved information on the costs of flooding, and benefits of flood risk management, over time.</p>
<ul style="list-style-type: none"> • Greater collaboration and partnership working between LLFA and other agencies involved in LFRM 	<p>There is already strong evidence that the Act has contributed to greater collaboration, trust and partnership working between the LLFA and other agencies involved in LFRM.</p>
<ul style="list-style-type: none"> • Stakeholders and the public are more resilient due to a better understanding of flood risks in their area, what is being done about it and which authority has responsibility 	<p>There is little evidence that the FWMA has contributed to better understanding of flood risks amongst the public, although some LLFAs have made significant efforts to engage the public and many have published their strategies and flood investigation reports. Evidence from the case studies suggest that public engagement and resilience have been improved through engagement around flood incidents, and through the activities of Defra Pathfinder projects rather than through the FWMA. However, this evaluation has not directly assessed this by consulting with the public.</p>
<ul style="list-style-type: none"> • Unintended consequences are identified and understood 	<p>The case study research asked stakeholders about their perceptions of unintended outcomes of the FWMA. The picture was mixed. A significant number of stakeholders felt that the Act had not resulted in a decline in the continuation of pre-FWMA powers and responsibilities by IDBs, lower-tier authorities, highway authorities and water companies. But some stakeholders reported that lower-tier councils had cut the resource allocated to local flood risk management</p>

Long-term outcomes	Assessment
	<p>as a result of the changes introduced by the FWMA, combined with resource constraints, but this was not true of all lower-tier councils. Some stakeholders reported that highway maintenance budgets were being cut, with potentially negative effects for local flood risk management, but others reported that highway maintenance was now being more closely aligned with flood risk management priorities. Several stakeholders commented that resources at the EA had reduced while those at LLFAs had increased, but it was not clear how far this is attributable to the FWMA.</p> <p>A significant number of stakeholders commented that the decision not to implement SuDS Approval Boards (SABs) had resulted in wasted effort and cost on the part of LLFAs. Going forward, some expressed concern that – without SABs - SuDs would not be adequately implemented, with adverse consequences for flood risk in the long run.</p> <p>While the evaluation has identified these possible unintended consequences, full understanding of these issues and their implications would require further investigation of these issues.</p>
<ul style="list-style-type: none"> • Barriers to improved LFRM are identified and understood 	<p>The research undertaken by this evaluation has itself contributed to understanding of the barriers to improving LFRM. These are detailed in sections four to six.</p>

7.3 Theory of change

The overarching theory of change presented in Figure 2.2 set out the assumed mechanisms for change, and the causal relationships between inputs, activities, and outcomes. Having discussed the elements of the logic model (activities, outputs, outcomes) in section 7.2, this section discusses the causal relationships between these elements and considers the extent to which change in these elements is attributable to FWMA or other external factors.

This analysis draws on the more detailed theory of change presented in Figure 2.3, which identifies a number of ‘stepping stones’ or intermediate outcomes. The evidence for progress on these intermediate outcomes, for different types of LLFA, is set out in section 7.1.

7.3.1 Review of assumptions and causal relationships

This section reviews the assumptions and causal relationships underlying the overarching theory of change in the light of evidence from the evaluation. The same colour coding is used as in the tables in section 7.2: **green** means well-supported; **amber** means mixed or partial support; **red** means contradicted by evidence and **blue** means that support cannot be adequately assessed from the evaluation evidence.

The first group of assumptions underpinned the link between FWMA inputs and LLFA activities. The evidence for these is considered in turn.

- **LLFAs allocate spending on local flood risk management** - as set out elsewhere in this section, about 60% of LLFAs have allocated all 'New Burdens' funding to local flood risk management but the remainder have allocated only part of this funding to local flood risk management.
- **Members and officers prioritise local flood risk management** – many officers have prioritised local flood risk management and worked extremely hard to meet the requirements of the FWMA. But prioritisation by elected members is less consistent and has tended to be linked to local flooding incidents.
- **New duties and powers easily assimilated by local authorities** – again, this is a mixed picture. There has been significant improvement in the knowledge and understanding of local flood risk management amongst LLFA since the pre-FWMA baseline. But some new duties and powers, particularly those relating to consenting, use of works powers and byelaws, are not necessarily fully understood or fully assimilated within the new context for local flood risk management.
- **LLFAs attend capacity building workshops** – as evidenced elsewhere in this section, there has been good participation by LLFA staff at capacity building workshops and in e-learning initiatives.

The second group of assumptions underpinned the link between activities/outputs and short-term/long-term outcomes. Again, the evidence supporting these is examined below.

- **Strategies completed quickly, are fit for purpose and remain live** – as discussed earlier in this section, some LLFAs have achieved this, but others have not. A significant proportion of LLFAs have yet to publish their strategies; not all of them meet the statutory requirements; and not all LLFAs are regularly reviewing their strategies and action plans. While strategies are making a contribution to the short and long-term outcomes, this could be more consistently achieved.
- **LLFAs can build partnerships and lead** – there is a perception amongst most stakeholders that most LLFAs have established local flood risk management partnerships and have begun to take a leading role in local flood risk management.
- **Districts and counties work closely together, with districts maintaining resources for local flood risk management** – as discussed earlier in this section, there is considerable variation both between lower-tier councils and between LLFAs in this regard. The case study research suggests, tentatively, that delegation of some local flood risk management responsibilities and associated funding to lower-tier councils may be a good way of encouraging joint working between tiers and ensuring adequate resourcing at lower-tier level.

- **Data and information is shared by risk management authorities and leads to improved understanding** - there is evidence, presented in sections 4 and 5, that improved data sharing and flood investigations are leading to better understanding and modelling of flood risk.
- **LLFAs have the skills and resources to develop joint bids and administer consenting process** – while there is evidence that most LLFAs have the skills and resources to develop joint bids, some would like more training in this area. Administration of the consenting process is inconsistent: while a few case study areas were addressing consenting properly, some were processing few, if any, consents and found that the consenting process was under-resourced.
- **Good (public) communications on responsibilities for local flood risk management and action taken** – some LLFAs have put considerable effort into public communications about local flood risk management responsibilities, local flood risk management strategies and flood risk investigations (and their responses), but anecdotal evidence suggests that public understanding of local flood risk management roles has not generally increased, except where prompted by flood incidents or community engagement projects such as the Defra Pathfinders.

7.3.2 External factors

This section examines external factors which may have contributed to or hindered the achievement of theory of change outcomes, other than the FWMA itself.

One set of factors are those already explored through the typology of LLFAs (e.g., retention of drainage staff; two-tier vs single-tier; delegation or no delegation; recent flood events). The influences of these factors are discussed separately in section 7.1.

Other factors which were identified through the case study research included:

- **Previous work on surface water management plans and/or preliminary flood risk assessments (positive):** some case study LLFAs attributed progress on local flood risk management to their earlier work in preparing surface water management plans and/or preliminary flood risk assessments. This was seen by many as a precursor to the local flood risk management strategies and to help achievement of similar outcomes.
- **Pathfinders (positive):** the Defra Pathfinder projects were felt to have contributed to community engagement and understanding of flood issues in specific areas.
- **Water Framework Directive (positive):** some LLFAs commented that the Water Quality Directive offered potential for joint achievement of ecological, water quality and flood resilience goals for water courses.

- **Changes to planning guidance (negative):** some LLFAs suggested that the introduction of the National Planning Policy Framework (NPPF) had led to weakening of planning guidance in relation to flooding, although this was not assessed as part of this evaluation.
- **Changes to EA resourcing (negative):** some LLFAs felt that the EA had withdrawn from some areas of responsibility and that the impact of EA cuts on local flood risk management was potentially negative, although this needs to be offset against the EA's work to support and build the capacity of LLFAs to take on a leadership role, which was recognised by many stakeholders.
- **Regulation of water companies (negative but recent positive changes):** several LLFAs commented that water companies were bound by OFWAT regulation, which was perceived to have limited their ability to invest in some flood reduction measures. However, a number of stakeholders suggested that more recent regulatory changes had led to a more outward-looking and partnership-oriented approach. A few suggested that water companies could be regulated for flood management as well as water supply and waste water management.
- **Non-implementation of SABs (negative):** many stakeholders commented that the decision not to implement SABs as originally envisaged in the Act could have negative consequences for SuDS implementation and flood risk in the long run.

7.3.3 Unintended consequences

The evaluation has highlighted two principle unintended consequences of the FWMA:

- Some change in the implementation of related pre-Act powers and responsibilities. Some lower-tier councils are reported to have cut the resource allocated to local flood risk management as a result of the changes introduced by the FWMA. A few stakeholders also reported that highway maintenance budgets were being cut (although this may not have a direct connection with the FWMA but may be part of wider council budget cuts), with potentially negative effects for local flood risk management, but others reported that highway maintenance was now being more closely aligned with flood risk management priorities. Several stakeholders commented that resources at the EA had reduced while those at LLFAs had increased, but it was not clear how far this is attributable to the FWMA.
- A significant number of stakeholders commented that the decision not to implement SABs had resulted in wasted effort and cost on the part of LLFAs. Going forward, some expressed concern that – without SABs - SuDs would not be adequately implemented, with adverse consequences for flood risk in the long run.

7.3.4 Summary

Figure 7.2 provides an annotated theory of change, summarising the findings described in the previous sections. The key below explains the annotations.

Key:



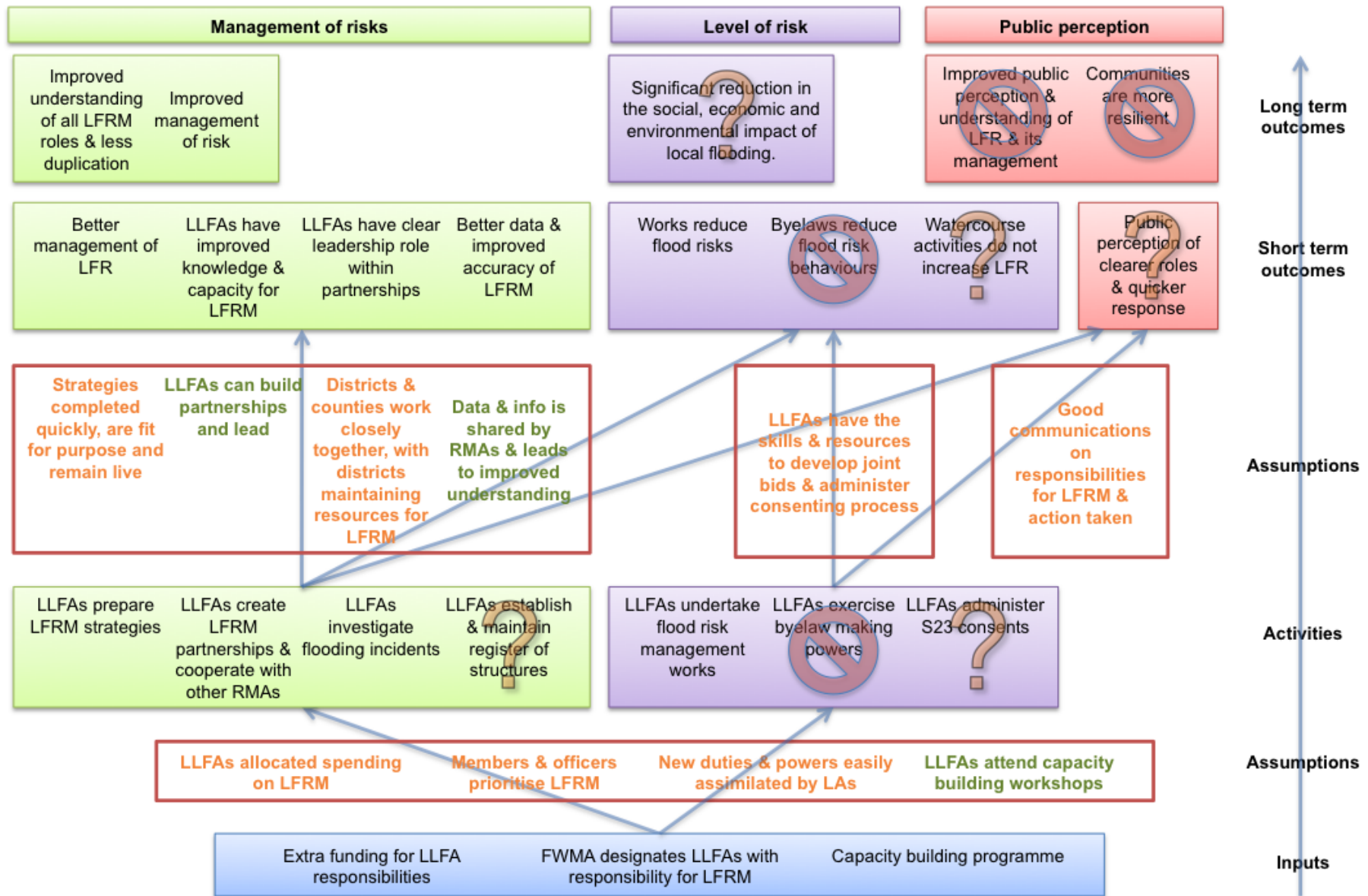
- Assumptions which are well supported by the evidence are shown in green
- Assumptions where the evidence is more mixed or the evidence is unclear are shown in amber
-  indicates that there is little evidence that an activity has occurred or an outcome has been achieved
-  indicates that the evidence of an activity occurring or an outcome being achieved is mixed or unclear

Figure 7.2: Annotated theory of change



Robust impact evaluation is hindered in this case by the absence of a counterfactual and caution is required in drawing firm conclusions about the impact of the FWMA. The timing of the evaluation also means that it is too early to assess many of the long-term outcomes. Impact has been evaluated by an in-depth exploration of changes from the pre-FWMA baseline and by exploring the causal relationships between the inputs, activities and outcomes associated with the Act, as described in the logic model and theory of change developed during the evaluation.

The impact of the FWMA can be summarised according to the three dimensions in the theory of change:

- Management of risk;
- Level of risk; and
- Public perception and resilience.

Each is discussed in turn below.

- **Management of risk.** There is evidence from the evaluation that the FWMA has led to significant improvements in the structures, systems and processes for managing flood risk from local sources. In much of England
 - Local flood risk management strategies were in place or soon to be published, significantly aided in some cases by pre-FWMA activity, such as surface water management plans and preliminary flood risk assessments;
 - Flooding incidents considered to be significant by LLFAs were being investigated in most cases;
 - LLFAs report improved knowledge, capacity and data, leading to improved accuracy and effectiveness in the assessment and management of local flood risk; and
 - The Act has led to a significant increase in the cooperation and collaboration between risk management authorities (aided by recent regulatory changes affecting the water companies), with LLFAs perceived to be providing clear leadership in many areas.

However, the absence of sufficiently developed asset registers in many areas means that the management of existing flood risk assets may be neglected to some degree in some areas and the source of tension over liabilities in others.

- **Level of risk.** Whilst LLFAs report challenges in securing funding for capital works, most had undertaken flood risk management works, which is likely to have reduced

the risk of flooding. However, it remains too early to assess whether there has been a significant reduction in the social, economic and environmental impacts of local flooding⁴⁵. In addition, the application of the consenting role by LLFAs has been inconsistent, and very limited in some cases, and the powers to introduce byelaws have remained almost entirely unused. This may mean that activities have been taking place on or near to ordinary watercourses which could exacerbate risks in some locations.

- **Public perception and resilience.** There is little evidence that the FWMA has had a material impact on the level of public understanding of flood risk or built the resilience of communities to flood risk. It is apparent that building community resilience requires more intensive engagement than is required under the Act. Where significant increases in understanding and resilience have been achieved, this has generally been due to other factors, such as the Defra Pathfinder schemes.

⁴⁵ Assessing this in future would require: (a) further qualitative data on the attribution of measures implemented to the FWMA; (b) an analysis of the business cases put forward for these measures in the bids for funding; and, ideally (c) some costs and benefits analysis of the measures post-completion.

8. Conclusions

This evaluation of the arrangements for local flood risk management in England had four objectives. Our conclusions in relation to each objective are summarised below. This is followed by a summary of the other issues, highlighted by the findings from this evaluation, which merit further consideration as part of the future development of the arrangements for local flood risk management in England.

8.1 Impact of the changes introduced through the FWMA in relation to the management of local flood risk

The evaluation found a general consensus amongst stakeholders that the FWMA had led to better strategic planning of flood risk management. This was the case even where significant concerns were expressed (e.g., around resource constraints) and in cases where the LLFA was already active in flood risk management prior to the Act being introduced. Wider evidence from the evaluation generally supports this view. The FWMA has led to an increase and strengthening of the structures, systems and processes for managing local flood risk. There was also a perception by some stakeholders interviewed that the risk of flooding from local sources has been reduced, although this is based on anecdotal evidence only. Further research, such as before and after risk assessments, would be required to provide more quantifiable evidence for this.

The principal weakness of the FWMA relates to public perceptions and the development of public resilience to flood risk. There is little evidence that the FWMA has had a material impact on the level of public understanding of flood risk or built the resilience of communities to flood risk, although it should be noted that no research was carried out with the public.

It is important to note, however, that there appears to have been a variation in the impact of the FWMA depending on different LLFA characteristics. In very broad terms, LLFAs can be divided into four different types, according to their 'journeys travelled':

1. *Retainers*

Journey travelled: These are mostly those unitary authorities that had experienced drainage teams in place when the Act was introduced in 2010. As a result, they have tended to have well-staffed teams and relatively good levels of activity on local flood risk management generally. They have progressed well in terms of implementing their statutory responsibilities.

Relative impact of the FWMA: The impact of the FWMA may have been less in these cases than in other LLFAs, as the work carried out following the introduction of the FWMA was, to some extent, an extension of work which was already underway or planned. This was particularly the case where the council had prepared or was preparing a surface water

management plan, which were a Defra-funded precursor to the local flood risk management strategy requirement in the FWMA. Nevertheless the FWMA has still impacted them in terms of the further development of partnership working and related sharing of data and information.

2. Resource-constrained

Journey travelled: Many unitary authorities had not retained drainage teams prior to 2010 and have built relatively small flood-risk teams (2 FTE's or less) following the Act. In cases where flood events had hit post 2010, these authorities tended to find themselves resource-constrained. They tended to make more use of external consultants, and to struggle with producing the local flood risk management strategy at the same time as producing section 19 reports.

Relative impact of the FWMA: Compared to the retainers, the resource constraints (capacity and capability) have limited the impact of the Act to some extent in these locations.

3. Counties

Journey travelled: LLFAs in two-tier areas have tended to be better-resourced than unitary authorities and to be more active in local flood risk management, not least because they tended to have experienced post 2010 flood events somewhere within their large area of responsibility. Some had smaller teams because they had delegated responsibilities to lower-tier councils or IDBs.

Relative impact of the FWMA: The impact of the FWMA has perhaps been most significant on these councils, due to the previous absence of any drainage responsibilities held by them prior to 2010 and the additional challenges they have faced in building their structures, systems, capacity and capability to address the requirements of the Act, e.g., the added layer of engagement with lower-tier councils, the subsequent loss of drainage expertise at the lower-tier level in some cases and the wider geographic areas which they often cover. However, alongside the impact of the FWMA, the impact of flooding incidents since 2010 in increasing the level of flood risk management activity must also be recognised.

4. Regional or sub-regional co-operators

Journey travelled: Some LLFAs which had cooperated with neighbouring authorities at sub-regional level had been able to make cost-effective progress, by sharing resources (e.g., external consultancy studies) and sharing good practice. This category is not mutually exclusive from the others.

Relative impact of the FWMA: Where such cooperation has occurred, the impact of the Act, in terms of outputs at least, may have been magnified as a result of the efficiencies achieved.

8.2 The effectiveness and efficiency of LLFAs as a whole

The evaluation has explored the progress of LLFAs in implementing the statutory requirements of the Act, as well as the wider practice of local flood risk management. This has highlighted key areas of strength and weakness in terms of effectiveness and efficiency, as summarised below.

- Although the initial rate of progress was slow, most LLFAs have now completed and published a draft or final local flood risk management strategy and the current rate of publication is relatively high. Whilst this represents significant progress, inconsistencies remain. Whilst most strategies are consistent with most of the statutory requirements, more than 90% of those published to date were found to be weak in terms of identifying the costs and benefits of the measures proposed, which may undermine LLFAs' ability to deliver their strategy commitments in future.
- Responding to the requirements of the FWMA, LLFAs appear to have introduced a step-change in the investigation of flooding incidents. Most floods regarded as significant by LLFAs are now investigated. Most investigations identify the risk management authority (or authorities) responsible and identify actions to resolve the problem, and in most cases relevant risk management authorities are notified of the findings. However, approaches to section 19 investigations vary between LLFAs. There are variations in the criteria and thresholds used for triggering investigations which, coupled with the variations in the incidence of flooding incidents, has led to huge variations in the numbers of investigations being carried out by LLFAs. Linked to this, the level of detail being applied to section 19 investigations is also reported to be inconsistent, meaning that the resulting investigations vary in their usefulness and impact.
- The case study research suggests that some LLFAs have made very significant progress in setting up and populating their asset register, and are already benefiting from having done so. However, progress is extremely patchy. Some LLFAs have not developed an asset register at all, others have very limited registers and most asset registers require considerable further work for them to become of use in the kinds of ways intended by the Act. Furthermore, little use is being made of LLFA asset registers by other risk management authorities, which is limiting their impact. Most case study stakeholders interviewed in this evaluation recognised the potential value of asset registers but resource constraints may prevent this value from being fully realised.
- In some cases, LLFAs or the authorities to whom they have delegated powers are utilising their consenting function to proactively manage activities which might affect flood risk from ordinary watercourses and view this role as extremely important. This is making good use of their local knowledge and allowing effective integration with the planning system. However, the consenting role has been given low priority

in some cases, leading to wide variations in the levels of consenting activity, including some LLFAs who have effectively not taken up this role.

- The powers to create byelaws and the powers to carry out works (except in the case of flood risk management schemes) have been little used to date by LLFAs. The potential usefulness of byelaws, particularly in controlling activity on or adjacent to ordinary watercourses, appears to be quite widely recognised so this may be a missed opportunity currently. Some confusion exists about how they can be used.
- The majority of LLFAs have not made use of works powers, and a significant number of LLFAs considered that the resources and risks associated with using them were too high. However, a significant number are making indirect use of these powers in negotiations with landowners about getting necessary works done.
- Most LLFAs have consulted, or collaborated, with other risk management authorities on the development of local flood risk management strategies and in many cases this has been a catalyst for wider engagement and joint working. Collaboration on local flood risk management has mostly involved LLFAs, the EA, water companies and, where relevant, IDBs and lower-tier councils. However, in a small number of cases, links have been forged with wider stakeholders and this appears to have generated benefits in terms of developing a more strategic approach, achieving wider benefits and accessing wider funding sources. Links with LEPs have been particularly important in some cases.
- Most LLFAs reported having contributed to an increase in the sharing of data and information between risk management authorities, and perceived that this had led to greater accuracy in the assessment and management of flood risks. Unsurprisingly, this is particularly the case where close partnership working and relationships of trust have been established. Some LLFAs report ongoing challenges in accessing data from the water companies.
- Although it has taken time to emerge, most LLFAs are perceived to be demonstrating leadership in the management of local flood risks. This is being expressed in terms of: coordinating the assessment of flood risk and the response to that risk; engaging partners; developing a vision; developing projects and coordinating responses to events.
- LLFAs have secured an increase in the level of staff resource committed to local flood risk management. However, this varies enormously between LLFAs. Some unitary authorities which have experienced flooding incidents since 2010 have found themselves particularly over-stretched.
- Some LLFAs report that they have secured an increase in the involvement of council members but the levels of involvement often fluctuate with the occurrence of flooding incidents.

- While most LLFAs have consulted the public on their local flood risk management strategy and more than half have undertaken other communications or consultation activity, the evaluation evidence suggests that LLFAs have not achieved any significant progress in terms of building the level of public understanding of flood risk and what they can do about it.
- Around 60% of LLFAs have spent all of the money allocated for implementation of the FWMA on local flood risk management. Nevertheless, most report being successful in leveraging in additional funding for local flood risk management, including additional council funding in a significant number of cases, Flood Defence Grant in Aid (FDGiA) and other sources. Where there has been increased cooperation and collaboration between risk management authorities this appears to have led to more efficiency and effectiveness in the spending of the available funding.

8.3 Good practice in the way in which LLFAs have delivered their responsibilities, including identifying factors which support and those which act as barriers to improved local flood risk management

Examples of good practice are highlighted throughout sections four to six of the report. These sections of the report also highlight a wide range of factors which support, and those which act as barriers to, improved local flood risk management. The evaluation has demonstrated that the context and starting point of different LLFAs in 2010 has been a critical determinant of their ability to effectively implement improved local flood risk management, as already described in section 8.1. The following section focuses on those factors that LLFAs have been in a better position to control since 2010.

8.3.1 Factors which support improved local flood risk management

Two factors have been identified as being particularly important in supporting improved local flood risk management:

Adequate resourcing. Where LLFAs have been well-resourced, this appears to have been important in relation to delivering all of the statutory requirements of the Act and in the wider practice of local flood risk management. Due to the high costs often associated with assessing the feasibility of flood risk management schemes and generating the data and information necessary for funding bids, accessing sufficient revenue funding has been critical in enabling access to capital funding for carrying out schemes⁴⁶.

⁴⁶ Capital grant is available to undertake an initial feasibility study where the EA Medium Term Plan assessment is that a capital scheme is likely. It may be that a lack of awareness of this is behind some of the comments about the challenges in securing funding for feasibility work.

Partnership working. Effective partnership working both between different LLFAs and between LLFAs and other risk management authorities, has underpinned much of the successful implementation of the FWMA. Where it has been developed, it is reported to have delivered benefits including:

- the adoption of a more strategic approach to flood risk management by LLFAs, capitalising on the links between flood risk management and wider agendas such as economic growth and regeneration;
- the development of solutions to flooding problems, including in instances which, without a collaborative approach, solutions would not have been feasible;
- providing reassurance to the public that flooding issues are being addressed effectively;
- facilitating the sharing of data and information between risk management authorities, leading to greater accuracy and effectiveness in the assessment and management of risks;
- facilitating the sharing of learning and good practice between different agencies;
- enabling more funding for local flood risk management to be accessed; and
- securing deeper and wider benefits from the schemes upon which that funding has been spent.

8.3.2 Factors which act as barriers to improved local flood risk management

The evaluation identified the following key barriers to improved local flood risk management:

Resource constraints. Despite the staff resource increasing, staff and funding constraints were the most commonly cited challenge to LLFAs delivering and playing a leadership role in local flood risk management. Concerns about resourcing are shared by LLFAs and many external stakeholders. Limitations in the resource available have hindered strategy development and have been a particular hindrance to the development of asset registers. Resourcing of the consenting function has also been perceived to be challenging, particularly because of the cap on consent application fees. In addition, even where proactive approaches to consenting have been adopted. The case study research suggests LLFAs have found it difficult to effectively resource compliance checks and subsequent enforcement where necessary. Limitations in revenue funding mean that accessing funding for capital schemes is challenging for many LLFAs, particularly because of the level of bureaucracy associated with bids for FDGiA. However, some of the perceived challenges in this area may arise from a lack of awareness and understanding of the system, e.g., capital grant is available to undertake an initial feasibility study where

the EA medium term plan assessment is that a capital scheme is likely and there is a degree of proportionality built in to the FDGiA process.

Differing objectives, priorities and regulatory environments. The FWMA appears to have led to improvements in the level of partnership working between risk management authorities. Where they exist, challenges to partnership working have resulted from partners' differing objectives, priorities and regulatory environments. Commercial and legal sensitivities have restricted the water companies' ability to share data in some cases. These differences have also made it challenging to resolve issues regarding the responsibility for some assets and flooding incidents.

Public engagement and public expectations. Barriers relating to public engagement and public expectations have a number of different dimensions:

- Some stakeholders believe that the extent to which flooding incidents are being investigated is being hindered by under-reporting of flooding incidents by members of the public, who are often concerned about the impact on property prices or insurance;
- Improved local flood risk management is reported to have led to heightened public expectations about the extent to which flood risks will be addressed, e.g, when solutions are proposed in section 19 reports. LLFAs and partner agencies report finding it challenging to manage expectations when not all potential solutions can be delivered; and
- Building public understanding of, and resilience to, flood risk requires intensive community development activity, which is beyond the scope of the FWMA and beyond the resources of most LLFAs.

LLFA skills and knowledge. Despite the apparent ongoing improvement in the capability of LLFA staff, concerns remain among some stakeholders about the levels of technical expertise available to LLFAs, with recruitment of specialist staff remaining challenging because of a reported shortage of such staff in the employment market and some experienced staff being made redundant or retiring, particularly within lower-tier councils.

8.4 The scope for simplification or efficiencies in the definition or delivery of the relevant statutory responsibilities

The findings from this evaluation have highlighted a number of aspects of local flood risk management where there would appear to be potential to achieve simplification or efficiencies. These include:

- **Accessing capital funding.** Many stakeholders suggested that the current system for accessing FDGiA was ill-suited to local flood risk management schemes and was overly bureaucratic, particularly for smaller schemes, compared to capital

funding in other areas such as transport. Some proportionality is built into the FDGiA process so addressing this issue may partly be about raising awareness and understanding of the process, but there may also be opportunities to further streamline the process. Some LLFAs, for example, had sought to streamline the process themselves by packaging together smaller schemes into single bids. Such practice may be beneficial elsewhere⁴⁷.

- **Partnership working.** As described in section 8.3.1, since partnership working has been an important contributor to the effectiveness and efficiency of local flood risk management, efforts to improve partnership working are likely to deliver significant benefits. Where they do not exist already, LLFAs could be encouraged to establish formal partnership structures. Separating strategic and operational issues appears to have been helpful but care needs to be taken to ensure that partners' engagement in these structures is not overly burdensome. Wider benefits and greater impact could also be achieved through enabling LLFAs to engage in partnership work beyond 'the usual suspects'. For example, linking with LEPs offers the opportunity to integrate flood risk management activity with the delivery of economic growth, whilst linking with Natural England offers the opportunity to link with rural land use issues. There may also be benefits from placing responsibilities on other bodies, such as transport operators, to engage with LLFAs.
- **Joint working by LLFAs.** Many LLFAs have benefited from sharing learning and good practice on a regional or sub-regional basis. A smaller number have developed joint working arrangements. Enabling further opportunities for both could deliver efficiencies.
- **Data sharing.** There may be opportunities to overcome barriers to data and information sharing. Data sharing protocols between risk management authorities have been established in some areas. Consideration could be given to facilitation of further such protocols at a regional or national level.
- **Strategies and plans.** There are a large number of strategies and plans for flood risk management, e.g., local flood risk management strategies, surface water management plans, preliminary flood risk assessments, strategic flood risk assessments, river basin management plans. Some stakeholders suggested that the number of plans brought about confusion and that there was overlap between them. There may be opportunities to rationalise the number of plans and strategies which are prepared.
- **Community resilience.** Building community resilience has been a particular challenge for LLFAs. It is apparent that progress in this area requires intensive community development work. Improved partnership working on this, e.g., with

⁴⁷ Defra ran a Small Schemes Pathfinder Funding programme which was open for applications between February and April 2015, i.e., during the case study research. The extent to which case study stakeholders were aware of this is unclear.

emergency planners, the LRF or wider council community development teams, may offer opportunities for increasing the impact of LLFAs in this area.

- **Delegation.** A minority of LLFAs have delegated the consenting role to IDBs or lower-tier councils. In these cases it has generally been found to have been a cost-effective way of delivering this aspect of the FWMA and therefore could be encouraged elsewhere.

8.5 Other issues to consider

A number of other issues have been highlighted by the findings from this evaluation, which merit further consideration as part of the future development of the arrangements for local flood risk management in England.

- How can LLFAs be supported in the development of data on the costs and benefits of proposed measures?
- How can local flood risk management strategies be strengthened in terms of their assessment of risks? Is there a need to encourage greater integration between the work on strategies and the work on preliminary flood risk assessments?
- Is the level of variation in approaches to section 19 investigations is detrimental to the management of flood risk or simply allowing LLFAs to adapt the section 19 requirements to their own contexts?
- How can LLFAs be further supported in the development of asset registers? How can good practice approaches to software, data collection and data sharing be shared? Can more use be made of data in the EA's AIMS database?
- How can greater consistency in the approaches to consenting on ordinary watercourses be achieved? In particular, how can those LLFAs who are largely neglecting this role at present be supported to take a more proactive approach?
- If byelaws are considered to be an important tool for LLFAs in managing the level of flood risk, is there a need to promote their value and potential uses, and support their creation? How can the current confusion over their use be addressed?
- How can LLFA concerns about the risks of using works powers be addressed so that they are confident in using them?
- Is there a need to revise the fee charged for consenting applications?
- Is the scale of current efforts to build the skills and capabilities of flood risk management staff sufficient? What more might be done to increase the availability of skilled professionals in this field?
- How can LLFAs be further supported in securing partnership contributions for schemes?

- How can LLFAs' understanding of how the FDGiA Capital funding system works be improved?
- Is there a need for further clarification of definitions and responsibilities? For example, is further guidance needed on how to distinguish between surface water sewers and culverted watercourses, or on how responsibilities get divided up between organisations when there are complex interactions within the drainage system? If so, how might this best be provided?
- Is more research needed to understand the extent and causes of under-reporting of flooding incidents and what could be done to address them?
- What more can be done to raise public awareness of the need to report flooding incidents and the process of doing so? Do LLFAs and other risk management authorities need further support in developing the systems for flooding incidents to be reported, recorded and shared with the relevant parties?
- More widely, what more can be done by LLFAs and others to help deliver the cultural shift which is seen to be needed in terms of public expectations and public understanding of flood risk management? How can greater community resilience be delivered?

Appendix A: Documents included in document review

- Section 18 Report. Under section 18 of the FWMA, the EA is required to report on flood and coastal erosion risk management to include information about the application of the national flood and coastal erosion risk management strategies. Reports to date have been published for 2011/12, 2012/13 and 2013/14 (Managing Flood and Coastal Erosion Risks in England, Environment Agency).
- Single Data List (2011-2014 reports). The Single Data List is a list of all datasets that Local Authorities must submit to National Government. Local Authorities report on the following flood risk management questions:
 - Progress in developing local flood risk management strategies under section 9, FWMA;
 - Progress in developing a register of structures or features in line with requirements of section 21 FWMA;
 - Number of investigations carried out and published in line with section 19 FWMA.
- National Audit Office Report (NAO, 2011) The National Audit Office (NAO) report, Flood Risk Management in England considers the progress since the last report in 2007, that the EA has made in identifying the risk of flooding, examines how well investment has been targeted at risk, and assesses how well Defra and the EA are managing the reform of flood risk management.
- Defra Impact Assessments. Impact assessments were produced for assessing options and the impact of enacting regulations. The following impact assessments were identified as relevant to this evaluation:
 - Impact Assessment of Local Flooding Management and the increased use of Sustainable Drainage (Defra, 2009)
 - Impact Assessment - Assessment of the impacts of commencing sections 14, 19 and 21 of the FWMA 2010 (Defra, 2011a)
 - Impact Assessment – Guidance under s7(6) of the FWMA 2010 – Co-operation and sharing of information (Defra, 2011b)
- Strategic Flood Risk Assessments Review. A research and development technical report was undertaken jointly by the EA and Defra in 2009 to evaluate the current position regarding the preparation of Strategic Flood Risk Assessments (SFRAs). The purpose was to establish whether SFRAs were helping to deliver the key planning objectives of PPS25 in terms of a partnership approach.

- Capacity Building Reports. Defra produced a strategy for building capacity and skills in local authorities for flood risk management as a precursor to the commencement of the Defra Capacity Building programme. This strategy was captured in the document 'Draft strategy for skills and capacity building in local authorities for local flood risk management' (Defra, 2010) and baseline report on LLFA Audience Profiling (Environment Agency/Halcrow, 2011). A baseline survey was carried out in November 2010 and the programme was evaluated at the end of each phase - 2012 and 2013 (Royal HaskoningDHV, 2012 & 2013).
- Local Government Association Local Flood Risk Management Survey. A survey of Local Flood Risk Management was conducted by the Local Government Association (LGA) and Defra, in order to establish the current and future capacity and expertise of local authorities to undertake the lead role on the management of local flood risk. Surveys were undertaken across upper tier, lower tier, unitary and London boroughs in 2008, 2010 and 2012.
- New Burdens Funding Assessment. Defra undertook a new burdens assessment in 2009 to assess the best estimate of reasonable costs for the new burdens funding to LLFAs arising from the FWMA. A subsequent Defra/LG Group Joint Implementation Review Panel (July, 2011) was produced by the panel comprising Defra, Department for Communities and Local Government (DCLG), Local Government Group (LG Group) and the Environment Agency (EA) to review the evidence and assumptions by Defra.
- Further data. Baseline information was collated from further documents including the Pitt Review (Pitt, 2008) and reports from the Making Space for Water programme related to integrated urban drainage and surface water management plan pilot studies.

Appendix B: Typology

Table B.0.1: A typology of LLFAs

Criteria	Rationale for inclusion	Data	Source	Approach to sampling for case studies
Level of flood risk	Local authorities facing extensive flood risk may be more likely to be actively managing local flood risks and responding in a more proactive manner to the requirements of the FWMA.	The 'relative score' from Defra's analysis of the level of flood risk in each LLFA. The surface water score (the % of all properties at risk of surface water flooding (in the "more" and "intermediate" risk bands) as a share of the national total) and the flood score (the % of all properties at risk of river and sea flooding (in flood zones 2 and 3) as a share of the national total) for each LLFA are combined to provide a single relative score. The relative score represents each LLFA's % share of the national total number of properties at risk of flooding from rivers, the sea and surface water. i.e. a relative score of 3% means that 3% of all properties at risk of flooding nationally are found in the LLFA. The relative score is used to determine each LLFA's share of the total amount of funding that will be made available to implementing the FWMA 2010.	Defra	Seek relatively even representation from each quartile
Significant flooding incidents 1995-2010	Significant flooding incidents may have acted as an incentive to proactively manage flood risk prior to the FWMA.	LLFAs response to two questions: 1. To understand a little more about the situation prior to the creation of the LLFA, was the local area subject to significant flooding incidents that you	Telephone survey	Seek similar ratio in the sample as in the population (ignoring gaps, i.e. don't knows and nil returns) between those who have

		are aware of between 1995 and 2010? 2. On any of these significant flooding incidents, were local sources of flooding a significant cause of the incident or factor in it?		experienced significant flood and those who haven't
Significant flooding incidents post 2010	Significant flooding incidents may have acted as an incentive to implement the requirements of the Act.	LLFAs response to the question: - Has the local area been subject to significant flooding incidents from 2011 and onwards?	Telephone survey	Seek similar ratio in the sample as in the population (ignoring gaps) between those who have experienced significant flood and those who haven't
Existing levels of planning for flood risk management in 2010	To enable an understanding of the 'starting point' of local authorities in 2010 so that the 'journey travelled' can be better understood.	Data from the year 2 (2009-10) self-assessments completed by Local authorities as part of their compliance with National Indicator 189 (flood and coastal erosion risk management). The number of actions committed to in year 2 is taken as a proxy for the existing levels of planning for flood risk management prior to the introduction of the Act in 2010.	EA records of NI189 responses	Seek relatively even representation from each quartile
Delegation of LLFA powers	Where LLFA powers have been delegated (e.g. to IDBs or to lower-tier authorities) this represents a very different approach to fulfilling the requirements of the Act, which needs to be accounted for in the research.		Telephone survey	Seek similar ratio in the sample as in the population (ignoring gaps) between those who have delegated powers and those who haven't
Level of deprivation	It could be a useful proxy indicator of how under pressure the Local authorities budgets may be, although this needs to be tested during the research.	Population weighted average of the combined scores for the Lower Super Output Areas (LSOAs) in the local authority area. This measure is calculated by averaging the LSOA scores in each local authority district after they have been population weighted. This measure retains the fact that more deprived LSOAs may have	Department for Communities and Local Government, Indices of Deprivation 2010	Seek relatively even representation from each quartile

		more 'extreme' scores, which is not revealed to the same extent if the ranks are used.		
LA type	County Councils are likely to face greater challenges than single tier authorities, partly because they have not previously been involved in flood management (outside of drainage on roads networks and assets) and partly because they may be dealing with a number of authorities at lower-tier level.	Single tier or two-tier		Seek similar ratio in the sample as in the population between single tier and two tier

A number of other criteria were used in the selection of the case studies, as shown in Table B.0.2 below.

Table B.0.2: Additional criteria used in case study selection

Criteria	Rationale for inclusion	Data	Source	Approach to sampling for case studies
Region	To ensure a good geographic spread of case studies	Based on former English Government Office regions	ONS	Ensure representation from each region
Presence of local flood risk management strategy	To ensure that the case studies cover LLFAs which have published local flood risk management strategy and those which haven't	Progress in December 2014 as per LLFA website	Desk review	Ensure inclusion of LLFAs which have published local flood risk management strategy and those which haven't
Presence of asset register	To ensure that the case studies cover LLFAs which have published asset registers and those which haven't	Progress in December 2014 as per LLFA website (assumed Single Data List status) if no information	Desk review	Ensure inclusion of LLFAs which have published asset registers and those which haven't
Presence of flood investigations	To ensure that the case studies cover LLFAs which have published flood investigations and those which haven't	Have they published any flood investigations under section 19? As per LLFA website, December 2014	Desk review	Ensure inclusion of LLFAs which have published flood investigations and those which haven't
Published guidance on consenting	To ensure that the case studies cover LLFAs which have published guidance on consenting and those which haven't	Is information on how to apply for consent on the website (application form and contact details)? December 2014	Desk review	Ensure inclusion of LLFAs which have published guidance on consenting and those which haven't

Appendix C: Logic model

Inputs	Activities	Outputs	Short-term outcomes	Long-term outcomes
<p>1. FWMA 2010 – local flood risk management aspects commenced in October 2010 and April 2011:</p> <ul style="list-style-type: none"> • S9 – Review of Local Strategies • S19 – Review of Investigations • S21 – Review of the Register and Record • S13/14 Co-operation and Powers to request information • S11 – Effect of National and local strategies • Amendments made to the Land Drainage Act (works powers, byelaw, s23 consents) (Schedule 2) <p>2. Funding (new burdens)</p>	<p>1. LLFA to:</p> <ul style="list-style-type: none"> • Manage local flood risk • Operate within the given statutory framework • Develop, maintain, apply and monitor their local flood risk management strategy • Investigate flooding incidents as necessary and identify relevant authorities • Establish and maintain a register of structures which are believed to have significant impact on local flood risk • Exercise powers to request information in connection with their responsibilities • Ensure local flood risk management strategies are consistent with national strategy • Exercise powers to undertake flood risk management works • Exercise byelaw making powers • Administer section 23 consenting scheme <p>2. Within Internal Drainage Districts, IDBs to continue their consenting and enforcement role on ordinary</p>	<p>LLFA have:</p> <ul style="list-style-type: none"> • Published local strategies, or are consulting on them • Established local flood risk management partnerships • Undertaken and published investigations • Used and found useful guidance on: co-operation and sharing information (s7); duty to maintain registers; used LGA guidance • Set up and populated registers of structures important for local flood risk management which are readily available to the public • Undertaken flood risk management works 	<p>LLFA outcomes:</p> <ul style="list-style-type: none"> • LLFA able to better manage local flood risks • LLFA have improved knowledge of local flood risk management • LLFA leadership role is clearer and better understood and demonstrated • LLFAs feel they have the tools/knowledge to take a leadership role • Accuracy of flood risk assessment is improved due to input/data from a range of partners • Local strategies deliver the requirements of the EA national strategy • Local strategies are useful, accessible and address local flood risk issues of concern to the public • Works reduce risk of floods • Byelaws reduce behaviours that increase flood risk • Watercourse linked activities are properly assessed and do not present any increase in flood risk <p>Outcomes for other local flood risk</p>	<ul style="list-style-type: none"> • Improved understanding for all of roles and responsibilities for local flood risk management is well embedded • Improvement in management of local flood risk • Social, economic and environmental cost of flooding is significantly reduced • Greater collaboration and partnership working between LLFA and other agencies involved in local flood risk management • Stakeholders and the public are more resilient due to a better understanding of flood risks in their area, what is being

<p>3. Capacity building programme</p>	<p>watercourses.</p> <p>3. IDBs and lower tier authorities to continue to exercise their permissive powers for works on ordinary watercourses.</p> <p>4. Local highway authorities to continue to exercise their responsibilities for the management of local highway drains;</p> <p>5. Water companies to continue to exercise their responsibilities for public surface water sewers and drains</p> <p>6. LLFA funding allocated for local flood risk management is spent on local flood risk management activities</p> <p>7. Capacity building workshops are attended by LLFA staff and e-learning and guidance are utilised</p> <p>8. Public report flooding incidents to LLFA</p> <p>9. Other risk management authorities share data and engage in partnership working</p>	<ul style="list-style-type: none"> • Made byelaws • Issued (s23) consents for watercourse linked activities • Secured additional capital funding, e.g. through partnership funding • Funded relevant local flood risk management activities • Attended capacity building workshops 	<p>management agencies and the public:</p> <ul style="list-style-type: none"> • Greater co-ordination and sharing of information across authorities • Reduced duplication across organisations involved in flood management • Public receive quicker responses from LLFA in relation to local flood risk issues • Information requests are responded to in an appropriate way • Roles and responsibilities for local flood risk management are clearer for both FRM authorities and the public 	<p>done about it and which authority has responsibility</p> <ul style="list-style-type: none"> • Unintended consequences are identified and understood • Barriers to improved local flood risk management are identified and understood
--	---	---	---	---

Appendix D: Evaluation questions

Topic/question	Supplementary questions	Primary Method
Typology questions		
Has the local area been subject to significant flooding incidents in the period 1995-2010 and the period since 2010?	• Were local sources of flooding a significant factor?	Telephone survey
	• What was the scale of the impact? E.g. number of properties affected, damage to infrastructure, disruption to business.	Case studies
To what extent was your organisation involved in local flood risk management before the Act was introduced in 2010?	• Did the local authority have staff with flood risk responsibilities pre 2010, and if so how many (fte)?	Telephone survey
	• What were the drivers for pre-2010 flood risk management activity by the local authority? • Can you give some examples of the work that was undertaken pre-2010?	Case studies
Was the local authority involved in any local or regional partnerships to address flood risk issues when the Act was introduced in 2010?	• Examples might be integrated urban drainage pilots, surface water management plan pilots, other local partnership arrangements/working groups, such as through the Local Strategic Partnership. • Which partnership?	Telephone survey
	• What was the role of the partnership and what was the local authority's role within it?	Case studies
Has there been any delegation of LLFA powers to other bodies?	• Have powers been delegated to IDBs? • Or (in two tier areas) have powers been delegated to districts? • Or to any other bodies?	Telephone survey
Topic 1: Statutory requirements		
Has a local flood risk management strategy been published?	• If yes, when was it published?	Outputs review
	• Which factors have adversely affected the time taken/resources available to prepare it? (probes: budget constraints, staff resources, staff turnover, flooding events)	Telephone survey
Does the local flood risk	• Is the role of the LLFA clearly stipulated in the strategy?	Outputs

<p>management strategy meet the statutory requirements?</p>	<ul style="list-style-type: none"> • Are risk management authorities in the LLFA area identified in the local flood risk management strategy? • Are the functions that are exercised by each risk management authority identified? <ul style="list-style-type: none"> • Is there evidence of duties and/or powers being delegated to another risk management authority by the LLLFA? • Are clear objectives set for managing local flood risk? <ul style="list-style-type: none"> ○ <i>What do objectives include: Prevention, protection, preparation, recovery and review</i> • Has local flood risk been assessed to identify high risk communities? • Are measures proposed to achieve those objectives? <ul style="list-style-type: none"> • Do measures cover short, medium and long term measures? • Does the Strategy set out how and when measures are expected to be implemented? <ul style="list-style-type: none"> • Is there an action plan which sets out measures/actions, action owners and timeframes for delivery? • Does it include the cost and benefit of those measures? • Does it include the funding mechanism/means of paying for the measures? <ul style="list-style-type: none"> • Are multiple (i.e. more than 1) funding streams identified? • Does the local flood risk management strategy specify when the strategy is to be reviewed? • Does the local flood risk management strategy reference the achievement of wider environmental objectives? <ul style="list-style-type: none"> • Has a SEA been prepared to support the LFMRS? • Is a summary of the local flood risk management strategy and guidance on the availability of relevant information published with the local flood risk management strategy? • Has the LLFA undertaken consultation on the local flood risk management strategy with risk management authorities and members of the public before publishing the local flood risk management strategy? • Has the LLFA issued guidance about the application of the local flood risk management strategy (non-stat)? 	<p>review.</p>
<p>Is the local flood risk management strategy consistent</p>	<p>Does the strategy reference consistency with the National Strategy guiding principles (yes/partially/no based on responses to below)</p>	<p>Outputs review</p>

with the national strategy?	<p>Do objectives reference (yes/no to each):</p> <ul style="list-style-type: none"> • A catchment based approach • Risk Based approach • Sustainability • Community focus • Partnership working • Multiple benefits (i.e. other benefits of environmental, social or economic)? 	
	<ul style="list-style-type: none"> • Are the strategies being implemented in accordance with the national strategy? 	Case studies
Have they used the LGA local flood risk management strategy Guidance in developing the local flood risk management strategy?	<ul style="list-style-type: none"> • Is there reference within the strategy to use of the LGA Guidance? 	Outputs review
	<ul style="list-style-type: none"> • Did you use or are you planning to use the guidance? • If yes, what aspects of the guidance were most helpful? 	Telephone survey
	<ul style="list-style-type: none"> • How was it used? To what extent? • In what ways could it be improved? 	Case studies
What actions are proposed in the strategy?	<p>Partly covered in scope questions above. In addition:</p> <ul style="list-style-type: none"> • Does the local flood risk management strategy propose measures or actions in relation to the management of all sources of Local Flood Risk? • Are actions identified for a range of Risk Management Authorities? 	Outputs review
Have any actions in the strategy been carried out/progressed already?	<ul style="list-style-type: none"> • Which actions have been progressed? • How is progress monitored? • How often is the strategy reviewed and updated? • Is there any evidence that the actions which have been undertaken have reduced risk? 	Outputs review Telephone survey to explore further.
Have roles and responsibilities of all risk management authorities been identified in the LLFA?	<p>Partly covered in scope questions above. In addition:</p> <ul style="list-style-type: none"> • Are partnership and governance arrangements set out for the purposes of managing local flood risk? • In two-tier areas, are the roles of upper and lower tier authorities clearly identified? • Are Overview and Scrutiny Committees included in the governance arrangements for flood risk 	Outputs review Case studies to cross-check roles/responsi

	management?	bilities of other risk management authorities.
Have they published any flood investigations under section 19?	<ul style="list-style-type: none"> • Have they published investigations on their website? • Is there evidence that they have they notified the relevant risk management authority of the outcome? 	<p>Outputs review.</p> <p>Telephone survey to check if they have been published and to explore whether the relevant risk management authority has been notified of the outcome.</p>
Is there a published policy in relation to undertaking investigations?	<ul style="list-style-type: none"> • Is there a published policy on website or within local flood risk management strategy that addresses when they will undertake a section 19 flood investigation? 	<p>Outputs review</p> <p>Telephone survey to check if the policy is publically available and where</p>
Have thresholds been set for undertaking investigations?	<ul style="list-style-type: none"> • Is it clear what evidence is required to trigger an investigation? • If a number of properties threshold is set – how many? • What other characteristics are considered when determining when to undertake an investigation? <ul style="list-style-type: none"> ○ New/unknown problem ○ Number of sources 	<p>Outputs review</p>

	<ul style="list-style-type: none"> ○ Number of properties affected ○ Risk to life ○ Cost-benefits ○ Other 	
What approach is taken to the production of section 19 reports?	<p>Do they identify:</p> <ul style="list-style-type: none"> ● Which risk management authority has relevant flood risk management functions? ● Whether the risk management authority has exercised or is proposing to exercise their functions in response to the flood? ● Is the problem identified? ● Does the report suggest solutions to the problem? ● Are actions identified to resolve the problem? ● Are actions allocated to the relevant risk management authority? ● Are timeframes for actions set out? ● How is progress on the actions monitored and reviewed? 	Outputs review.
	<ul style="list-style-type: none"> ● What follow-up action is taken? 	Case studies
Is an asset register available for public inspection?	<ul style="list-style-type: none"> ● Is there a link to a register on the website? Or, is a register available to inspect by the public if requested? Passive or asked for. ● Is the process for accessing the register indicated on the website? ● Does it contain asset information on: <ul style="list-style-type: none"> ○ Location of asset ○ Type of asset ○ Description ○ Ownership of asset (stat) ○ State of repair (stat)? ● Does the register include any: <ul style="list-style-type: none"> ○ Public Third party assets (i.e. of risk management authorities – EA, Water Company, IDB etc) ○ Privately owned assets? 	Outputs review. Telephone survey to check if the register is publically available and where
What form is the asset register	<ul style="list-style-type: none"> ● Mapping tool on website 	Outputs

in?	<ul style="list-style-type: none"> • Simple spreadsheet/table of assets • Database or Highways Asset Management System • Other? 	review.
How was the asset register prepared and what use is the asset register being put to?	<ul style="list-style-type: none"> • How do they classify what is a structure/feature that is “likely to have a significant effect on flood risk in the LLFA area”? • Do they include third party assets in the classification of the above questions? • Was the DEFRA guidance used to develop the register of flood risk features? 	Telephone survey
	<ul style="list-style-type: none"> • How often is the register updated? • How is the register updated? • Do we know how often the register has been accessed – e.g. website hits, requests to view etc? 	Case studies
Has the LLFA set out a clear requirement for consenting?	<ul style="list-style-type: none"> • Are clear criteria set for the types of work that require consenting under S.23? • Is a policy for consenting published on the website? 	Outputs review. Telephone survey to also ask about criteria and check if the consenting policy is publically available and where
Who undertakes the consenting role on behalf of the LLFA?	<ul style="list-style-type: none"> • Has consenting been delegated to another authority? – To which authority? <ul style="list-style-type: none"> • Not delegated – undertaken by LLFA • Taken on duty from another LLFA • Delegated to: <ul style="list-style-type: none"> ○ IDB ○ EA ○ Other LLFA ○ Outsourced to Highways contractor 	Outputs review. Telephone survey to check, as the approach may not be clearly stated.

	<ul style="list-style-type: none"> ○ Outsourced to consultant/sub-contractor (not including Highways) ○ Other 	
What approach is being taken to applications for consents?	<ul style="list-style-type: none"> ● Is the LLFA taking a standard approach to applications, or a risk based approach? ● Are additional resources given to assessing applications in the areas of higher flood risk? 	Outputs review
What approach is being taken to enforcement of consents?	<ul style="list-style-type: none"> ● Is there a member of staff who is responsible for enforcement of consents and, if so, what proportion of their role does this comprise? 	Telephone survey
	<ul style="list-style-type: none"> ● How proactive is the approach to enforcement? 	Case studies
How have the powers arising from the Schedule 2 amendments to Land Drainage Act 1991 been utilised by LLFAs?	<ul style="list-style-type: none"> ● How often have works powers been used? Have they been used in conjunction with other Risk Authorities? Are the powers sufficient? ● Has consideration been given to whether or what activities need to be controlled through byelaws? If not was this because they had not considered the option, or concluded the powers were not appropriate or sufficient? 	Telephone survey
	<ul style="list-style-type: none"> ● Is there any evidence that the use of works powers or byelaws has reduced risk? 	Case studies
Topic 2: Local Flood Risk Management in Practice		
What has been the extent of collaboration and partnership working at the local level?	<ul style="list-style-type: none"> ● Which organisations have been involved in the preparation of the strategy? (probe for EA, districts (if relevant), water companies, IDBs, other local stakeholders). ● Are there ongoing regular meetings between partner organisations? 	Telephone survey
	<ul style="list-style-type: none"> ● In what ways have other stakeholders been involved in strategy preparation? ● What has worked well in establishing partnership working, and why? ● Have any difficulties been experienced in establishing partnership working arrangements with other organisations? If so, why? (probe: water companies – have commercial or regulatory restrictions hindered engagement? Have budget pressures or restructuring in other risk management agencies hindered their ability to engage?) ● Is there less duplication of roles and responsibilities than there was prior to the FWMA? 	Case studies – including perspectives from other risk management authorities
To what extent have pre-FWMA powers and responsibilities continued to be exercised?	<ul style="list-style-type: none"> ● Within Internal Drainage Districts, have Internal Drainage Boards (IDBs) continued their consenting and enforcement role on ordinary watercourses.? Has there been any change since 2010? ● Have IDBs and lower tier authorities continued to exercise their permissive powers for works on ordinary watercourses? Has there been any change since 2010? ● Have local Highway Authorities continued to exercise their responsibilities for the management 	Case studies

	<p>of local highway drains? Has there been any change since 2010?</p> <ul style="list-style-type: none"> • Have water companies continued to exercise their responsibilities for public surface water sewers and drains? Has there been any change since 2010? 	
To what extent has data and information been shared within the LLFA and between partners, and what has been the benefit?	<ul style="list-style-type: none"> • Has the FWMA led to more sharing of data and information between different council teams, e.g. highways, emergency planning, drainage teams, planning? • Has the FWMA led to more sharing of data and information between different Risk Management Agencies? 	Telephone survey
	<ul style="list-style-type: none"> • Specifically, what data and information has been shared? (probe: data on local drainage infrastructure held by lower tier authorities, highways asset information held by the highway authority, data held by the water companies). • What use has it been put to? • Has this led to greater effectiveness and/or accuracy in the assessment of local flood risks? • What have been the barriers to the sharing and utilisation of data and information? 	Case studies, including perspective from other risk management authorities
Does the LLFA play a leadership role in the management of local flood risks within the local area?	<ul style="list-style-type: none"> • What does leadership mean to the LLFA? • How is this leadership role demonstrated? • Are the role and responsibilities of the LLFA clearly set out and understood by all local partners? (probe: what is their role vis-à-vis the EA?) • Have there been any barriers to the LLFA playing a leadership role? 	Case studies, including perspective from other risk management authorities
What operational arrangements have been established within the LLFA to manage local flood risk?	<ul style="list-style-type: none"> • Which staff member has lead responsibility for the LLFA and what percentage of their role does this responsibility comprise? Which department are they part of? What is their profession (e.g. drainage engineer, highways engineer, planner)? What level of seniority are they? • What level of staffing overall is dedicated to fulfilling LLFA requirements (Full Time Equivalent)? • Have external consultants been utilised to help fulfil any of the responsibilities of the LLFA? To what extent and for what purpose? 	Online survey
	<ul style="list-style-type: none"> • Which other council departments are involved in delivering LLFA responsibilities? 	Telephone survey
	<ul style="list-style-type: none"> • Has any assessment been undertaken of the skills needed to implement the LLFAs responsibilities? • Does the LLFA have the right skills to deliver the LLFAs responsibilities? If not, what are the gaps? Has there been any attempt to fill the gaps? 	Case studies

What priority has been attached to local flood risk management within the local authority (and other risk management authorities)?	<ul style="list-style-type: none"> • Is there a councillor/portfolio holder with responsibility for local flood risk management? • Are scrutiny committees involved (e.g. in S19 reports and the local flood risk management strategy)? 	Telephone survey
	<ul style="list-style-type: none"> • To what extent have senior council officers and councillors been engaged on flooding issues? How has this changed since 2010? 	Case studies, including priority for other risk management authorities
Has the guidance for delivering LLFA responsibilities been clear and effective?	<ul style="list-style-type: none"> • How could it be improved? 	Telephone survey
	<ul style="list-style-type: none"> • In what ways has the guidance been useful? • What has been the impact of any gaps or inadequacies? 	Case studies
What have been the impacts of other national policies on the organisation and delivery of local flood risk management?	<ul style="list-style-type: none"> • What has been the relative influence, compared to FWMA 2010, of: <ul style="list-style-type: none"> ○ Partnership funding ○ SuDS ○ Community Resilience Pathfinders ○ Property Level Protection ○ European legislation (e.g. Floods Directive and Water Framework Directive) ○ Planning and land use policy (e.g. National Planning Policy Framework) ○ Localism agenda ○ Local Enterprise Partnerships and the economic growth agenda 	Case studies
What other factors have impacted on the organisation and delivery of local flood risk management?	<ul style="list-style-type: none"> • For example: Flooding incidents (and post event reaction); budget stress (and cuts); local elections; improvements in mapping and risk assessment (GIS etc); changes in public expectations and media; changes to other risk management authorities (e.g. water companies: OFWAT, Drainage Strategy Framework, Water Act re SUDS, and other changes to regulatory environment); restructuring/churn in organisations (impact of change at officer level). 	Case studies
What communication and engagement has taken place with the public?	<ul style="list-style-type: none"> • What level and type of consultation was undertaken with the public in the development of the strategy? • What other public consultation or communications have been undertaken by the LLFA? • Is there a clear public statement (e.g. on website) of the responsibilities of the LLFA and action 	Telephone survey

	taken (e.g. approach to S19 reports).	
	<ul style="list-style-type: none"> • Is there any evidence that the public now has a clearer understanding of the roles and responsibilities for local flood risk management since the FWMA? • Is there any evidence that the public now has a clearer understanding of flood risk and what they can do about it? 	Case studies
Have there been any unintended consequences of the FWMA?	<ul style="list-style-type: none"> • Probe: For example, has Improved partnership working between risk management authorities leads to improved coordination of response to flood events, or to better partnership working in other areas? 	Case studies
What has worked well and less well in implementing the requirements of the FWMA?	<ul style="list-style-type: none"> • Other than what's already been covered in response to the questions above, what factors have helped progress? (probe: engagement with other LLFAs through RFCC's, other support mechanisms such as Drain London for London Boroughs?) • Other than what's already been covered in response to the questions above, what factors have hindered progress? 	Case studies
Topic 3: Funding		
Has the new burdens funding allocated to LLFAs been spent on local flood risk management?	<ul style="list-style-type: none"> • What proportion of the New Burdens funding intended to be allocated to LLFAs has been spent on local flood risk management? 	Telephone survey
	<ul style="list-style-type: none"> • What specifically has the funding been spent on? 	Case studies
What other resources have been available for local flood risk management?	<ul style="list-style-type: none"> • What level of resourcing was committed to local flood risk management prior to 2010 (e.g. for drainage responsibilities in lower tier authorities)? • Has the local authority allocated any additional funding for local flood risk management since 2010 in addition to the new burdens funding? • Have other organisations contributed funding (direct and in-kind) towards the delivery of LLFA responsibilities? • Have other organisations (e.g. districts in two-tier areas, highways authorities, water companies, IDBs) reduced their funding for local flood risk management as a result of LLFAs being created and receiving funding? • What has been the impact of local authority budget cuts on the funding available for local flood risk management? 	Telephone survey. Case studies to explore in-depth
What have been the costs of delivering LLFA responsibilities?	<ul style="list-style-type: none"> • Breakdown of costs for: <ul style="list-style-type: none"> ○ Initial development of strategy 	Case studies

	<ul style="list-style-type: none"> ○ Review(s) of strategy ○ Capital investment flowing from strategy recommendations ○ Development and management of partnership ○ S19 investigations ○ Initial development of asset register ○ Ongoing management of asset register ○ Other elements, e.g. coordinating partnerships 	
What capital funding has been secured for local flood risk management works?	<ul style="list-style-type: none"> ● Have joint bids been submitted for partnership funding? Have any bids been successful? ● Has the LLFA had any projects in the EA's Medium Term Plan? ● Has funding been secured from any other sources, e.g. EU programmes, Local Growth Fund, other private investment? If so, how much? 	Telephone survey
	<ul style="list-style-type: none"> ● What have been the barriers to the development of bids for partnership funding (probe: resourcing the feasibility work, levels of bureaucracy)? 	Case studies
Topic 4: Capacity building		
What impact has the Defra capacity-building programme had to date? How far have LLFAs engaged with this? What are the outcomes of the capacity-building programme? Have knowledge and skill levels in relation to local flood risk management improved in LLFAs? If not where are the gaps?	Capacity building survey questions – drawn from previous surveys.	Online survey
Have other agencies got sufficient capacity to engage with the LLFA?	<ul style="list-style-type: none"> ● Have there been any barriers to other risk management authorities engaging with the LLFA in carrying out their responsibilities (probe: reorganisations, restructuring, staff movement) ● Have other organisations (e.g. districts in two-tier areas) reduced their capacity for local flood risk management as a result of LLFAs being created and receiving funding? 	Case studies

Appendix E: Statutory requirements of the FWMA

Local flood risk management strategies (Section 9)

All LLFAs are required to develop, maintain, apply and monitor a local flood risk management strategy in its area for surface water runoff, groundwater and ordinary watercourses.

This strategy must specify:

- The risk management authorities within the authority's area;
- The flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area;
- The objectives for managing local flood risk;
- The measures proposed to achieve those objectives;
- How and when the measures are expected to be implemented;
- The costs and benefits of those measures and how they are to be paid for;
- The assessment of local flood risk for the purpose of the strategy;
- How and when the strategy is to be reviewed; and
- How the strategy contributes to the achievement of wider environmental objectives.

The strategy must be consistent with the National Flood and Coastal Erosion Risk Management Strategy for England.

The LLFA must also:

- Consult risk management authorities that may be affected by the strategy and the public; and
- Publish a summary of its local flood risk management strategy.

Co-operation and Arrangements (Section 13)

Risk management authorities must co-operate and share information with other risk management authorities in the exercise of their flood and coastal erosion risk management functions.

Information Requests (Section 14)

LLFAs may request a person to provide information in connection with the authorities flood and coastal risk management functions.

Investigation of Flooding (Section 19)

On becoming aware of a flood in its area, a LLFA must, to the extent that it considers it necessary or appropriate, investigate:

- Which risk management authorities have relevant flood risk management functions; and
- Whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.

Where an authority carries out a section 19 investigation, it must:

- Publish the results of its investigation; and
- Notify any relevant risk management authorities.

Duty to Maintain a Register (Section 21)

A LLFA must establish and maintain:

- A register of structures or features which, in the opinion of the authority, are likely to have a significant effect on a flood risk in its area, and
- A record of information about each of those structures or features including information about ownership and state of repair.

The LLFA must arrange for the register to be available for inspection at all reasonable times.

Amendments made to Land Drainage Act (Schedule 2)

Schedule 2 of the FWMA amends sections of the Land Drainage Act (1991) to:

- Transfer the regulatory powers of consenting and enforcement on ordinary watercourses from the EA to LLFAs (section 23). Within Internal Drainage Districts, the IDB will retain their existing powers;
- Allow local authorities to make land drainage byelaws for the purpose of preventing flooding or remedying or mitigating any damage caused by flooding (section 66); and
- Provide LLFAs with powers to do works to manage flood risk from surface runoff and groundwater.

The powers enable lower-tier and single-tier local authorities and IDBs to undertake works to address flood risk from ordinary watercourses.

There is a distinction in byelaw-making powers between those held by unitary and district councils and those held by county councils. Unitary and district councils have powers to make byelaws;

- To secure the efficient working of a drainage system in the authority's district or area;
- To regulate the effects on the environment in the authority's district or area of a drainage system;
- To secure the effectiveness of flood risk management work within the meaning of section 14A; and
- To secure the effectiveness of works done in reliance on section 38 or 39 of the Flood and Water Management Act 2010.

County councils are able to make byelaws:

- To secure the effectiveness of flood risk management work within the meaning of section 14A; and
- To secure the effectiveness of works done in reliance on section 38 or 39 of the Flood and Water Management Act 2010.

Appendix F: Assessment questions and indicators for the statutory requirements for the local flood risk management strategy

Statutory requirements	Assessment question	Indicator
The strategy must specify:		
The risk management authorities in the authority's area	Are risk management authorities identified in the local flood risk management strategy?	Yes = as a minimum includes water company, EA, highway authority and where relevant IDB and lower tier Authorities
The flood risk management functions that may be exercised by those authorities in relation to the area	Are the functions that are exercised by each risk management authority identified?	Yes = sets out roles/responsibilities for each identified risk management authority
The objectives for managing local flood risk	Are clear objectives set for managing local flood risk?	Yes = objectives are set for the purposes of managing local flood risk
The measures proposed to achieve those objectives	Are measures proposed to achieve those objectives?	Yes = measures (or actions) are included against objectives
How and when measures are expected to be implemented	Does the local flood risk management strategy set out how and when measures are expected to be implemented?	Yes = both how (i.e. actions against measures) and when (timeframes against measures) are set out Partially = either how or when but not both
The cost and benefits of those measures and how they are to be paid for	Does the local flood risk management strategy or action plan include the cost and benefit of those measures?	Yes = both a cost is included and a benefit (quantitative or qualitative) for the measures Partially = either cost or benefit included but not both
	Does the local flood risk management strategy include the funding mechanism or means or paying for the measures?	Yes = a funding stream is identified for how measures will be paid for, or there is wider reference to funding streams available within the strategy not specific to measures
The assessment of local flood risk for the purpose of the	Has local flood risk been assessed to identify high-risk communities/	Yes = a full detailed assessment of risk is undertaken which sets out priority areas or communities to prioritise management of risk

strategy	locations?	(including where data is used from another study e.g. surface water management plan or Preliminary Flood Risk Assessment) Partially = a high-level assessment based on historic events only No = no assessment or solely reporting of historic flood events.
How and when the strategy is to be reviewed	Does the local flood risk management strategy specify when the strategy is to be reviewed?	Yes = specifies review criteria/period is set out
How the strategy contributes to the achievement of wider environmental objectives.	Does the local flood risk management strategy reference the achievement of wider environmental objectives?	Yes = reference or discussion of environmental benefits or a strategic environmental assessment (SEA) has been undertaken No = no SEA or reference to environmental benefits

Appendix G: Capabilities of LLFA staff

Where an indicator appears to show continuous improvement, it is shaded green; where improvement appears to have been static / inconsistent, it is shaded amber; where performance appears to have declined, it is shaded red.

Table C.1: LLFA representative self-rating of capabilities – “Which description best fits your...?”⁴⁸

%	2012 [n=194]	2013 [n=140]	2014 [n=2014]
...Current level of understanding of the Flood and Water Management Act (2010) ⁴⁹ ? [Green]			
Aware	1	0	0
Basic	13	9	5
Capable	52	55	44
Distinguished	32	32	41
Expert	2	4	10
...Current understanding of local authority responsibilities in relation to local flood risk management [Green]			
Basic	13	7	0
Capable	47	42	32
Distinguished	32	42	48
Expert	8	9	15
...Current level of understanding of the Flood Risk Regulations (2009) [Green]			
Aware	Not asked	6	1
Basic		16	19
Capable		61	53
Distinguished		14	25
Expert		3	3
...Current level of expertise in developing and delivering a local flood risk management strategy ⁵⁰ [Green]			

⁴⁸ There are two caveats in interpreting the data. As they are in the role longer, respondents may feel that they *ought* to know more about a particular topic even if they do not and so self-rate accordingly; the survey did not include any tests of capability. On the other hand, there is potential for respondents to have increased their understanding of knowledge *potential* in each area, so rate themselves more harshly than in 2012 (i.e. when they didn't know what they didn't know).

⁴⁹ In 2012 this question was phrased as “current understanding of the *legislation that affects Local Flood Risk Management?*”

⁵⁰ In 2012 this question was phrased as “current level of expertise in developing a local flood risk management strategy” i.e. it did not explore expertise in *delivering* the Strategy.

Aware	6	3	0
Basic	31	17	10
Capable	47	47	34
Distinguished	14	26	41
Expert	2	7	15
...Current management skills (including leadership, negotiating, partnerships & communications) [Green]			
Aware	4	3	0
Basic	19	9	6
Capable	45	41	37
Distinguished	28	41	47
Expert	3	6	10
...Current level of expertise in Sustainable Drainage Systems (SuDS) ⁵¹ [Amber]			
Aware	6	3	4
Basic	37	29	21
Capable	39	51	46
Distinguished	15	15	23
Expert	3	1	6
...Current level of expertise in GIS mapping and data management [Amber]			
Aware	18	13	11
Basic	32	28	38
Capable	33	42	32
Distinguished	14	12	14
Expert	3	5	5
...Current knowledge/skills to carry out your flood risk enforcement and consenting role? [Green]			
Aware	21	9	8
Basic	44	26	21
Capable	26	47	44
Distinguished	7	17	21
Expert	2	1	6
...Current understanding of the application of the partnership funding requirements to your			

⁵¹ In 2012 this question was phrased as "current level of expertise in Sustainable Drainage Systems (SuDS), including the role of the SuDS Approval Body and the emerging national standards".

projects [Green]			
Aware	18	12	5
Basic	35	28	18
Capable	34	46	49
Distinguished	11	13	29
Expert	2	1	3
...Current ability to develop and appraise projects and prepare your Medium Term Plan ⁵² [Green]			
Aware	17	11	6
Basic	29	37	24
Capable	40	39	44
Distinguished	13	12	23
Expert	1	1	3
...Current ability to designate and manage Flood Risk Assets and Features [Amber]			
Aware	Not asked	8	12
Basic		35	26
Capable		43	45
Distinguished		13	15
Expert		1	1
...Current knowledge/skills to investigate flooding in your area and publish the results [Green]			
Aware	Not asked	4	5
Basic		16	7
Capable		49	41
Distinguished		25	39
Expert		6	8

⁵² In 2012 this question was phrased as “current ability to develop and appraise projects *that come out of your strategies* and prepare your Medium Term Plan.”

Appendix H: LLFA cost data

LLFA	Type of authority	Cost elements	Cost (£)
LLFA 1	Unitary	Development of local flood risk management strategy (LFRMS).	7k
		<p>In terms of staff time, Local Flood Risk Management represents 1.5FTE based on:</p> <ul style="list-style-type: none"> About 50% of the drainage engineer's time About 10-20% of the emergency planner/LLFA lead's time About 80% of the planner/SUDS engineer's time <p><i>* no costings for staff time were provided.</i></p>	
LLFA 2	London Borough	Initial development of LFRMS	15k
		Development and management of partnerships	5k
		Initial development of asset register	5k
		On-going management of asset register	3k
		Other elements (co-ordinating partnerships etc)	2k
LLFA 3	Unitary	Initial development of LFRMS	200k ⁵³
		Review of strategy (annual)	2k (pa)
		Development and management of partnerships	2k (pa)
		S19 investigations (2014-15)	7-10k
		Initial development of asset register	10k
		On-going management of asset register	2-5k (pa)
		Other elements (co-ordinating partnerships etc)	2-5k (pa)
LLFA 5	Unitary	Initial development of LFRMS	24k
LLFA 8	Unitary	Initial development of strategy	12k
		S19 investigations	15k (per investigation)
		Initial development of asset register	13k since Act
LLFA 10	County	Initial development of LFRMS	60k ⁵⁴

⁵³ This LLFA spent a great deal of time and money preparing a Preliminary Flood Assessment and Surface Water Management Plan (Phases 1 -4). The PFRA and SWMP provided the basis for the LFRMS. The figure noted here combines the money spent on all three studies. The LFRMS report and SEA alone cost £35,000.

		Development and management of partnerships (staff time)	40k
		S19 investigations	35k (pa) ⁵⁵
		Initial development of asset register	5k
LLFA 13	Unitary	Initial development of LFRMS	37k
		Review of strategy (estimated future costs shown- no period given)	20k
		Development and management of partnerships	10k
		S19 investigations	5-10k
		Initial development of asset register	44k
		On-going management of asset register	15-20k
		Other elements (co-ordinating partnerships, staff costs etc)	105k
LLFA 18	Unitary	Initial development of LFRMS	£17,188
		Development and management of partnerships	£6521
		<i>* total costs of £49,937 reported, but apart from costs cited above these were not attributed to the type of activity on which information was requested by Defra</i>	
LLFA 20	Unitary	Initial development of asset register	3k
		On-going management of asset register	10k
		<i>* Estimated 60-70k annual staff costs associated with undertaking LLFA duties.</i>	
		<i>** Estimated 30k spent on investigations since 2010, but none of these were formal S19 investigations.</i>	
LLFA 25	Unitary	<i>* The following data was provided about the annual costs of delivering LLFA responsibilities. It excludes funding spent on some specific projects. No information was provided on how this broke down into different elements: 2010: £10,741 (half year only) 2011: £62,377 2012: £58,525 2013: £83,208 2014: £100,367</i>	
LLFA 28	Unitary	Initial development of asset register	35k
		Other elements	£6-700 per consent
LLFA 29	County	Initial development of LFRMS	30k

⁵⁴ 20k for consultants, 40k staff time

⁵⁵ Staff and consultancy costs.

References

- Defra (2005) Making space for water: Taking forward a new Government strategy for flood and coastal erosion risk management in England, March 2005
- Defra (2008) Future Water: The Governments Water Strategy for England, February 2008.
- Defra (2009) Flood and Water Management Bill Impact Assessment – Local Flood Risk Management and the increased use of Sustainable Drainage Systems, October 2009
- Defra (2009b) New Burden Assessment – Flood and Water Management Bill
- Defra (2010) Surface Water Management Plan Technical Guidance, March 2010.
- Defra (2011a) Assessment of the impacts of commencing sections 14, 19 and 21 of the Flood and Water Management Act 2010: IA 1313
- Defra (2011b) Guidance under s7(6) of the Flood and Water Management Act 2010 – Co-operation and sharing of information: Impact Assessment 1261
- Defra and Environment Agency (2009) Land use planning – Assessing the quality and influence of Strategic Flood Risk Assessments (SFRAs), R&D Technical Report FD2610/TR, June 2009.
- Defra and LG Group (2011) Interim Progress Report: The costs and benefits of the lead local flood authority role under the Flood and Water Management Act 2010, Defra/LG Group Joint Implementation Review Panel
- Environment Agency (2014) Section 18 report: Managing Flood and Coastal Erosion Risks in England – 1 April 2013 to 31 March 2014
- Environment Agency (2013) Section 18 report: Managing Flood and Coastal Erosion Risks in England – 1 April 2012 to 31 March 2013
- Environment Agency (2012) Section 18 report: Managing Flood and Coastal Erosion Risks in England – 1 April 2011 to 31 March 2012
- Environment Agency and Halcrow (2011) Lead Local Flood Authority Audience Profiling, February 2011
- Flood and Water Management Act (2010)
- Halcrow (2008) Making space for Water Urban Flood Risk and Integrated Drainage (HA2), IUD Pilot Summary Report.
- Halcrow (2009) Impact Assessment of Local Flood Risk Management – Supplementary Evidence Base

Halcrow (2010) Draft Strategy for skills and capacity building in local authorities for local flood risk management, July 2010

Institution of Civil Engineers (2011) Flood Risk Management: A local issue of national importance, March

Local Government Association (2008) Defra/LGA survey of Local Flood Risk Management 2008, Summary of Results

Local Government Group (2010) Survey of Local Authorities, Dec 2010

National Audit Office (2011) Flood Risk Management in England, October 2011

Pitt, M (2008) The Pitt Review – Learning lessons from the 2007 floods.

Royal HaskoningDHV (2012) Capacity building for Local Flood Risk Management: Interim Project Appraisal Report for England, 2012

Royal HaskoningDHV (2013) Capacity building for Local Flood Risk Management: Interim Project Appraisal Report for England, 2013