Monitoring and evaluating the National Adaptation Programme

Built Environment theme:

- Community-scale flood alleviation
- Surface water flood management
- Avoid inappropriate new development in flood risk areas
- Residual flood risk to existing buildings
- Water demand in the built environment

Last updated: 4 January 2016

Introduction

- This slidepack:
  - Serves as a technical annex to **Chapter 2: Built Environment** in the ASC's first statutory report to Parliament on the National Adaptation Programme, available at www.theccc.org.uk/publications
  - Provides the latest trend information on indicators of exposure, vulnerability, action and realised impacts that informed the ASC's assessment. A full list of indicators used by the ASC across all six NAP themes is available at www.theccc.org.uk/publications
  - Will be updated periodically as new data becomes available.
  - Highlights indicators that would be useful but where the necessary datasets have not yet been identified.
  - Follows the structure of the built environment chapter in the ASC's progress report, which is based on the 'adaptation priorities' the ASC identified for the natural environment.
- After presenting a high level summary of the ASC's assessment of progress against each of the adaptation priorities, this annex sets out the underlying data by adaptation priority.

Built Environment theme: overview of progress

Adaptation priority	Is there a plan?	Are actions taking place?	Is progress being made?
1. Community-scale flood alleviation			
2. Surface water flood management			
3. Avoid inappropriate development in flood risk areas			
4. Residual flood risk to existing buildings			
5. Heat-related health impacts *(see Chapter 4 dashboard)*			
6. Water demand in the built environment			

Red: plans and policies, delivery of actions, or progress in addressing vulnerabilities, are lacking.
Amber: adaptation priority has been partially addressed, some evidence of progress in some areas.
Green: plans are in place, actions are being delivered, progress is being made.
Grey: insufficient evidence to form a judgement.

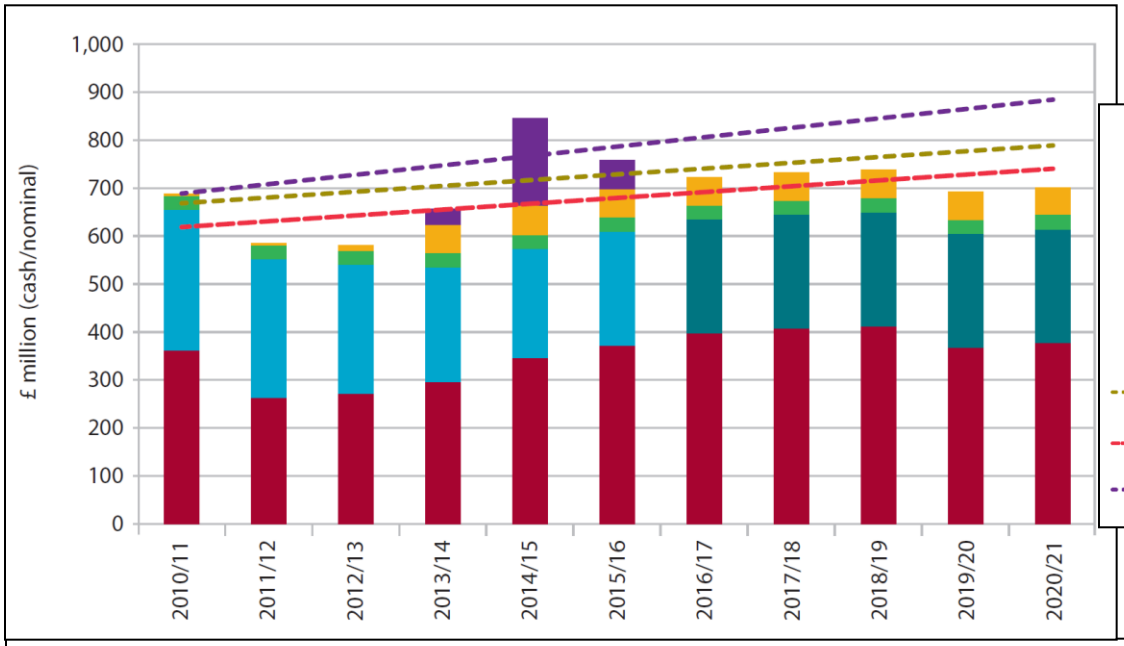
Source: ASC (2015) *Progress in preparing for climate change*

1. Community scale flood alleviation

Measure	Data series	Source	Trend	Implication
Spending on flood and coastal erosion risk management	2010/11 to 2020/21	Defra	↔	Overall spending levels due to be flat in real-terms to 2021. May allow a slight (5%) reduction in expected annual flood damages by 2021.
Of which capital expenditure	As above	Defra	↔	Capital investment due to be flat in real terms, in line with the optimal spending trajectory highlighted by the latest Long-term Investment Scenarios, Environment Agency (2014).
Of which maintenance expenditure	As above	Defra	↔	Some evidence maintenance budgets should increase to more cost-effective routine and preventative maintenance activity to be performed (see ASC 2015)
Of which external contributions	As above	Defra	↑	More capital schemes being funded than if costs were left to Government alone.
Condition of EA flood defence assets in high consequence systems	2010/11 to 2014/15	Environment Agency	↔	Despite extra funding being spent on maintenance since the 2013/14 winter storms the condition of flood and coastal defence asset systems remains below the 97% target.
Proportion of flood defence asset systems maintained according to long-term needs	2014/15	Environment Agency	N/A	Lack of routine and preventative maintenance suggests assets may deteriorate more quickly than necessary, requiring earlier capital renewal/replacement.

1. Community scale flood alleviation

Spending on FCERM	↔	Overall spending levels due to be flat in real-terms to 2021. May allow a slight (5%) reduction in expected annual flood damages by 2021.



Notes:

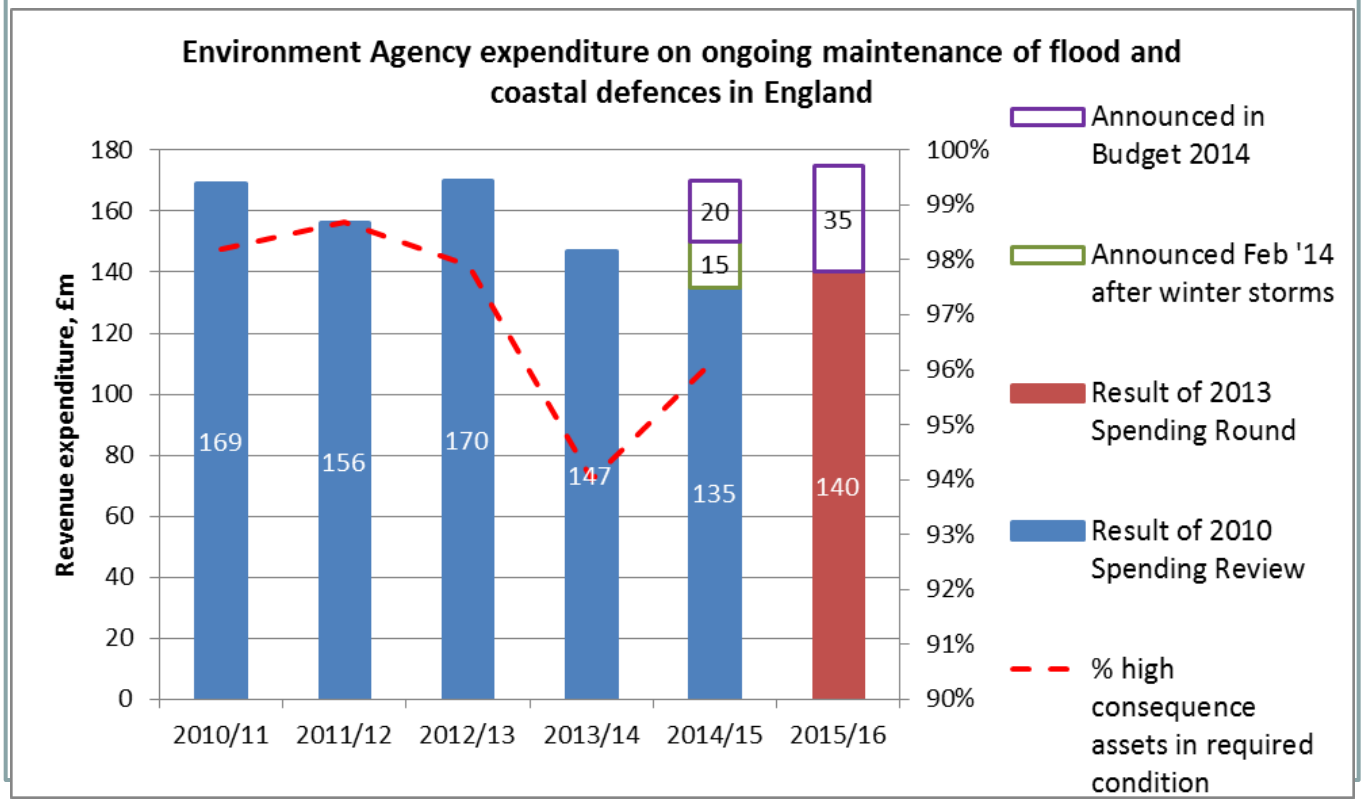
- Assumes 10% efficiencies in the capital programme is achieved between 2015/16 and 2020/21, and an extra 15% is raised in external contributions each year over the period..
- Revenue budget not yet announced for 2016/17 onwards, decision due in autumn 2015.
- New Environment Agency long-term investment scenarios (LTIS2) published in December 2014 suggests the amount of investment needed to counter asset deterioration and climate change will be less than previously thought, as was estimated in EA's 2009 Long-Term Investment Strategy (LTIS1)..

- Spending levels have recovered following a significant cut to the flood defence grant-in-aid budget in the 2010 Spending Review
- The £270 million extra funding announced since the winter storms of 2013/14 was a temporary funding boost, primarily to repair damaged defences and will not materially effect long-term risk.
- The six-year capital settlement from 2015 includes inflationary increases, with £60 million funding moved forward in the profile to deliver early benefit.
- Efficiencies and external contributions mean government funding will achieve more outcomes than headline figures suggest.
- However, there was underinvestment in flood and coastal defence assets over the 2011/12 – 14/15 period, estimated at £200 million .

Source: ASC (2015) based on Defra (2015) and Environment Agency (2014 and 2009).

1. Community scale flood alleviation

Condition of EA FRM assets	↔	Despite extra funding being spent on maintenance since the 2013/14 winter storms the condition of flood and coastal defence asset systems remains below the 97% target.

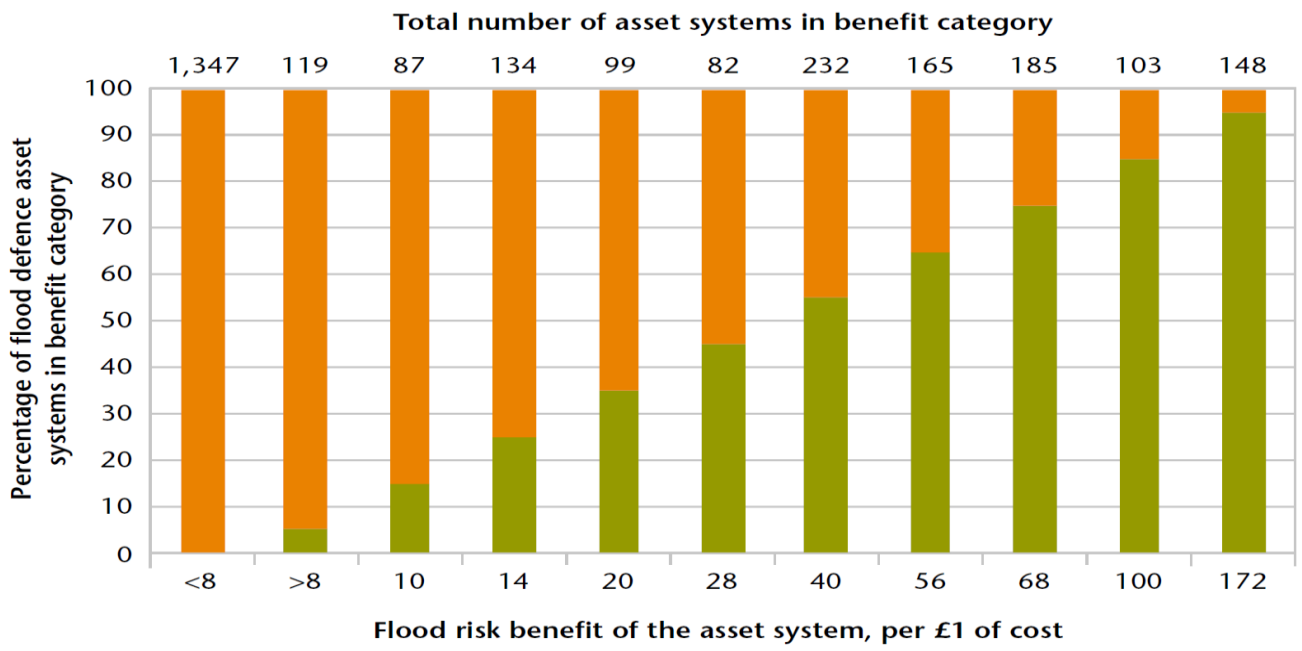


- EA's target is to maintain at least 97% of assets in high consequence systems in target condition.
- Even before the 2013/14 winter storms the condition of flood defence assets was in decline.
- The proportion of EA flood defence assets at the required condition in high consequence areas fell to 96.5% in September 2013, from a peak of 98.7% in 2011/12
- Following the 2013/14 winter storms, this had fallen further to 94%.
- Performance has since recovered but as at Q3 2014/15 remains below the 97% target.

Source: Defra (2015) and Environment Agency (2015)

1. Community scale flood alleviation

Proportion EA assets being optimally maintained	N/A	Lack of routine and preventative maintenance suggests assets may deteriorate more quickly than necessary, requiring earlier capital renewal.



Notes: Data are from System Asset Management Plans (SAMPs) based on an overall revenue budget for maintenance in 2014/15 of £170 million. The available funds each year are first allocated so that the minimum needs can be met for every asset system. The remaining funds are then prioritised on a risk and benefit basis, so that systems delivering more flood risk benefit are maintained more often. 'Minimum needs' is the lowest unavoidable cost of maintaining statutory compliance and operational readiness for a system over a 12 month period, accepting that the standard of service may decline as a result. 'Identified need' is the regime needed to minimise the whole-life costs of the asset system.

- EA has identified what maintenance is needed each year to avoid unnecessary deterioration to defence structures. Current budgets mean the optimal level of maintenance is only possible for a quarter of flood defence structures each year.
- In other cases the annual maintenance requirement is met every other year, or every three or four years. Only the minimum, unavoidable costs are met each year.
- More than half of flood defence systems are being maintained at the minimal level.
- As a result of limited maintenance, defences will deteriorate faster than they need to, and need replacing more quickly.

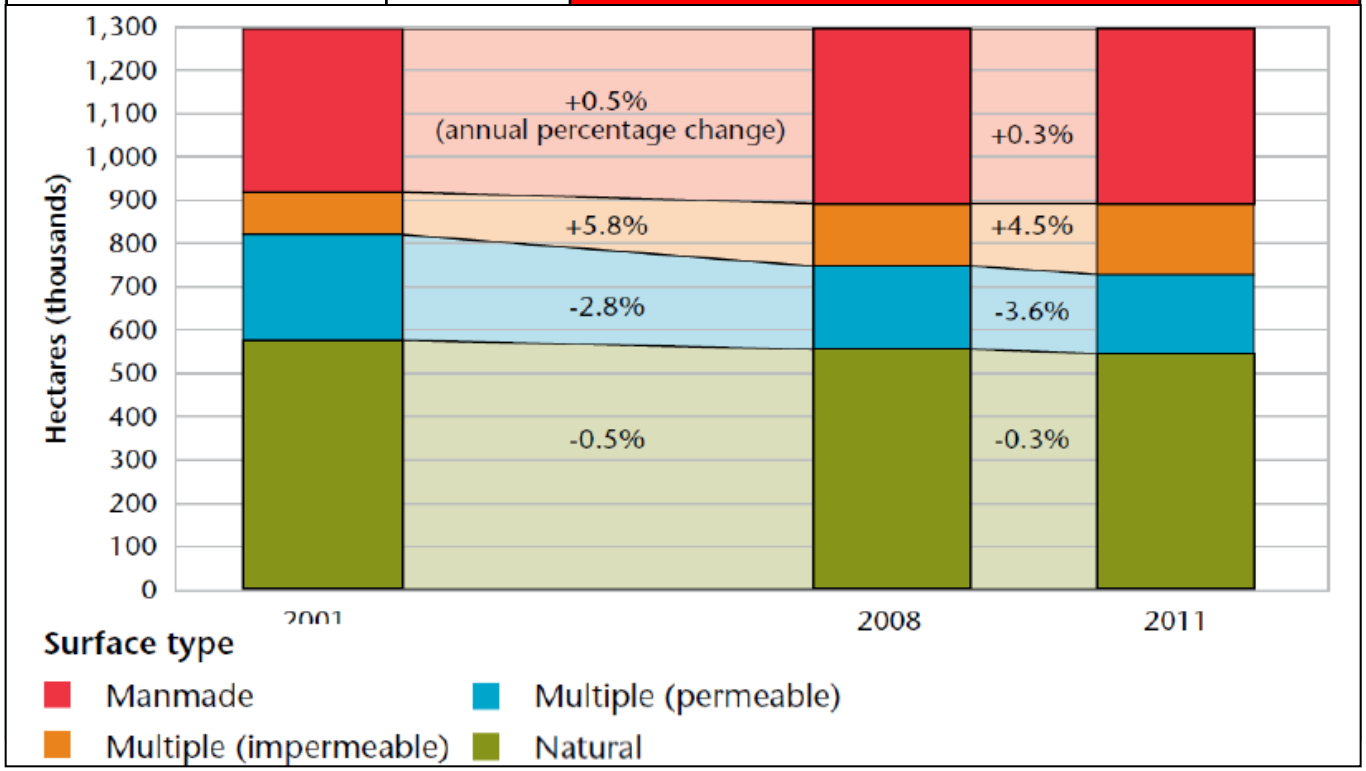
Source: ASC (2014), p41

2. Surface water flood management

Measure	Data series	Source	Trend	Implication
Area of natural / permeable surfacing in urban areas	2001-2011	OS Mastermap	↓	Loss of permeable surfaces is increasing pressure on aging public sewer system.
Uptake of SuDS in new development	N/A			There is no national monitoring of SuDS uptake in new development.
Installation of permeable paving	2009-2013	Jenco (2014) for ASC	↑	Increase from 6% in 2009 to 10% of all block paving sales in 2013, but uptake is still well below the potential.
Funding for local flood risk management	2011/12 - 2015/16	Local Government Association, Defra	↓	Some of the funding provided for lead local flood authorities is being diverted by councils to other local priorities. Defra has reduced grants to LLFAs by £5 million from 2015/16.
Number of lead local flood authorities with published local FRM strategies	2012/13 to 2013/14	Environment Agency	↑	Number of lead local flood authorities that have published strategies has increased, but rate of progress is slow.
Number of households flooded internally from sewers		Ofwat	↔	No clear trend in the number of internal sewer flooding incidents, which will be weather-dependent to a large degree.

2. Surface water flood management

Area of natural / permeable surfacing in urban areas	↓	Loss of permeable surfaces is increasing pressure on aging public sewer system.



- The area of hard surfacing has increased in England's towns and cities over the last ten years.
- The increase has primarily been in areas that contain a mixture of hard and soft surfaces (defined as 'multiple' in the data), such as domestic gardens and road verges.
- Total 'multiple' area in towns and cities has remained roughly constant, but the proportion of this area that was paved over increased from 28% of total 'multiple' area in 2001 to 48% in 2011.
- This trend is consistent with other studies of land cover change in a particular number of towns and cities across the country.

Source: ASC (2012)

2. Surface water flood management

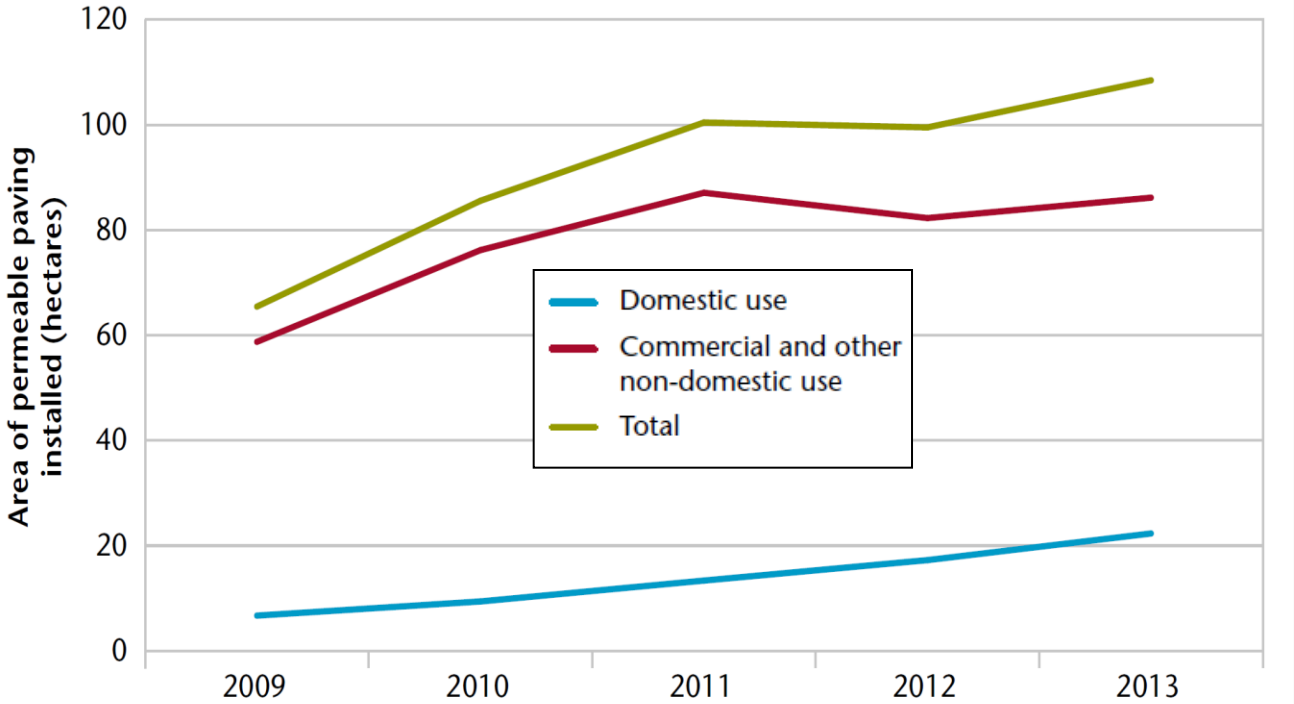
Uptake of SuDS in new development	N/A	There is no national monitoring of SuDS uptake in new development.

Do not have an exhibit

- The Pitt Review recommended the widespread uptake of SuDS in new development.
- The 2010 Flood and Water Management Act legislated to encourage SuDSs as the default option in new development. National planning policy also requires local planning authorities to actively consider SuDSs in planning applications.
- In 2014, the Government decided to not enact the SuDS provisions in the 2010 Act but to instead strengthen planning policy so there is an 'expectation' that SuDs will be included.
- However, there is no monitoring of SuDS uptake in planning applications. In an ASC 2014 survey of 100 planning applications in areas of flood risk, less than 15% proposed SuDS measures.

2. Surface water flood management

Area of permeable paving installed	↑	Increase from 6% in 2009 to 10% of all block paving sales in 2013, but uptake is still well below the potential.



Notes: Block paving manufacture and sales in the UK is dominated by six national companies, all of which are members of the trade association Interpave. In addition, there are some regional manufacturers and suppliers, at least one of which is an importer from Eire. A confidential data request was made to these companies seeking data on sales of concrete block paving and concrete block permeable paving between 2004-2013. Responses were received from all the companies contacted, although data covering a ten year period was only available from two companies. The 2009-2013 totals are based on data from over 90% of England's manufacturers and suppliers.

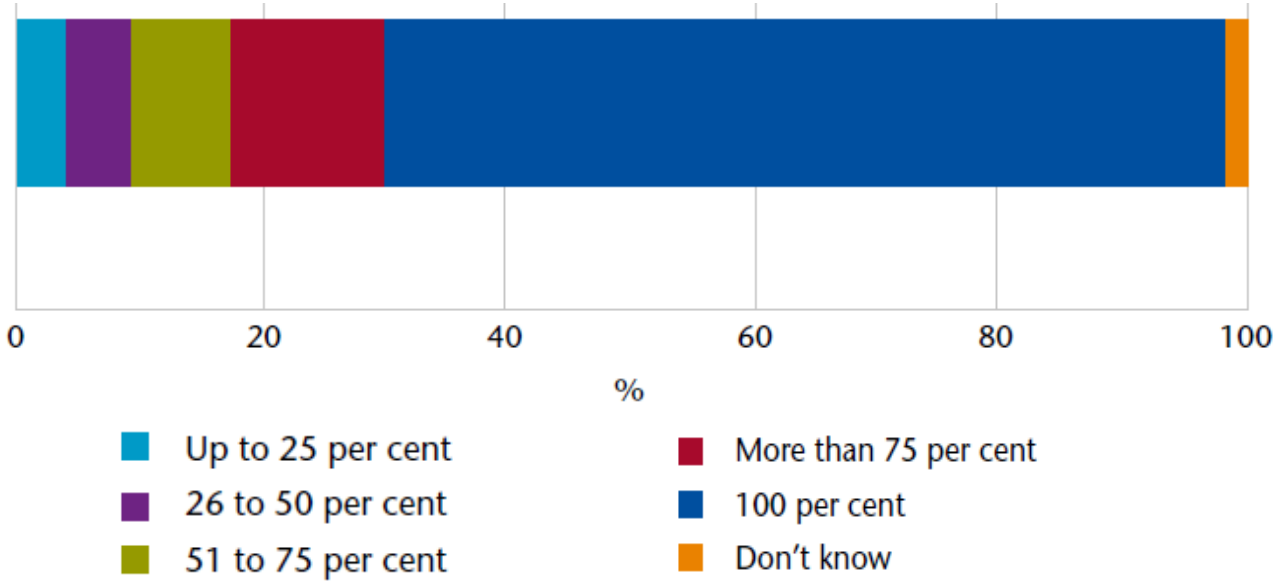
- Concrete block permeable paving (CBPP) allows rainwater to permeate between the blocks and into pre-designed water capture or attenuation systems below ground.
- CBPP accounted for 6% of all block paving sales in England in 2009, rising to 10% by 2013.
- The proportion of CBPP in domestic sales is lower, at around 4% in 2013. As a result, only 22 hectares of domestic front gardens paved over in 2013 would have been with CBPP compared to over 500 hectares with normal paving.
- Nearly 90 hectares of CBPP was installed in commercial projects in 2013, which would have included some highway refurbishment, car parks and new development. This accounted for around 14% of all commercial block paving sales in that year.

Source: ASC (2014), p51

2. Surface water flood management

Funding for local flood risk management	↓	Some of the funding provided for lead local flood authorities is being diverted by councils to other local priorities. Defra has reduced grants to LLFAs by £5 million from 2015/16.

Q). How much of Defra's funding to your authority for its LLFA role has been allocated to flood risk management in your authority?



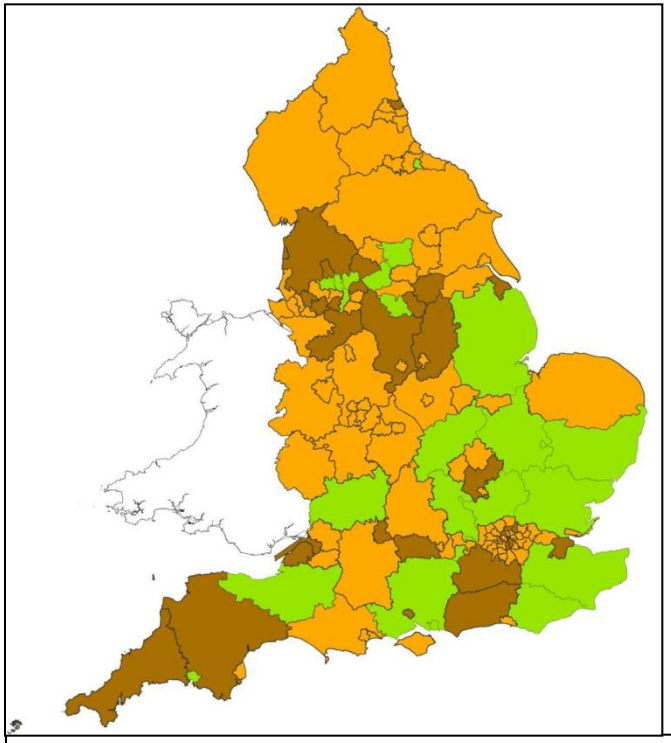
Notes: Results of a survey carried out by the LGA in 2012 of all 152 lead local flood authorities in England. 95 LLFAs responded.

- The 2010 Flood and Water Management Act legislated to create Lead Local Flood Authorities responsible for overseeing local flood risk management and preparing a local flood risk management strategy.
- Defra provided £36 million a year to lead local flood authorities to fund their new roles under the Act.
- A survey conducted by the Local Government Association in 2012 found that some of the £36 million is not being spent as intended.
- £20.7 million of the £36 million in grants to LLFAs is now within the system of core grants to local authorities provided by DCLG (under the system of business rates retention).
- Defra has reduced its own grants to LLFAs from £15 million in 2014/15 to £10 million in 2015/16.

Source: ASC (2014), p43

2. Surface water flood management

Number of LLFAs with published FRM strategies	↑	Number of lead local flood authorities that have published strategies has increased, but rate of progress is slow.



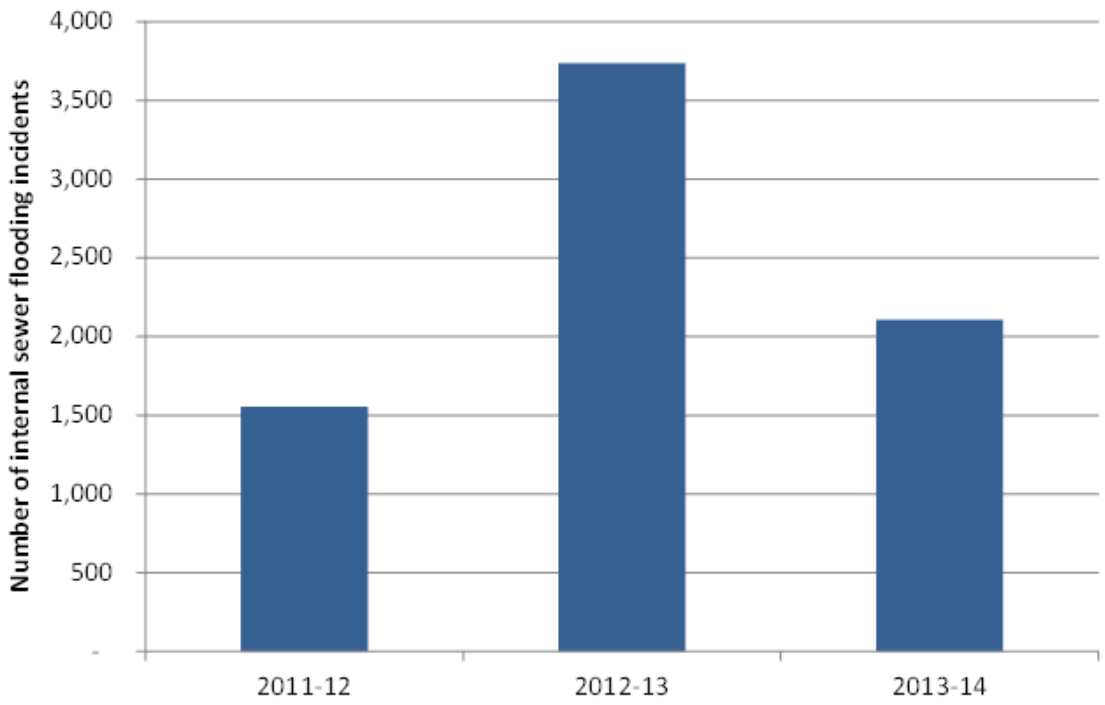
Notes: Status as of April 2014.

- The production of statutory local flood risk management strategies by LLFAs across the country has been slow.
- Only 5 out of the 152 lead local flood authorities had finalised and published a strategy by April 2013.
- This had increased to 24 by April 2014, which remains less than one-sixth of all LLFAs in England.
- The Pitt Review also recommended local oversight and scrutiny arrangements to make sure appropriate action is being taken by councils and their local partners.
- The Act also gave powers for local scrutiny by oversight committees. There is very little evidence of local oversight and scrutiny committees being in place. Pitt recommended these committees should report on the actions being taken locally to manage flood risk.

Source: Environment Agency Section 18 report (2014)

2. Surface water flood management

Number of households flooded internally from sewers	↔	No clear trend in the number of internal sewer flooding incidents, which will be weather-dependent to a large degree.



Notes:

- An average of 2,500 households were affected by internal flooding from foul/combined sewers over the period from 2011/12 to 2013/14.
- Water companies are investing in reducing the number of homes on the 'DG5 register' of homes affected by sewer flooding, by increasing the capacity of sewers, reducing the number of homes served by combined sewers, and introducing SuDS.

Source: Ofwat KPIs

3. Avoid inappropriate new development in flood risk areas

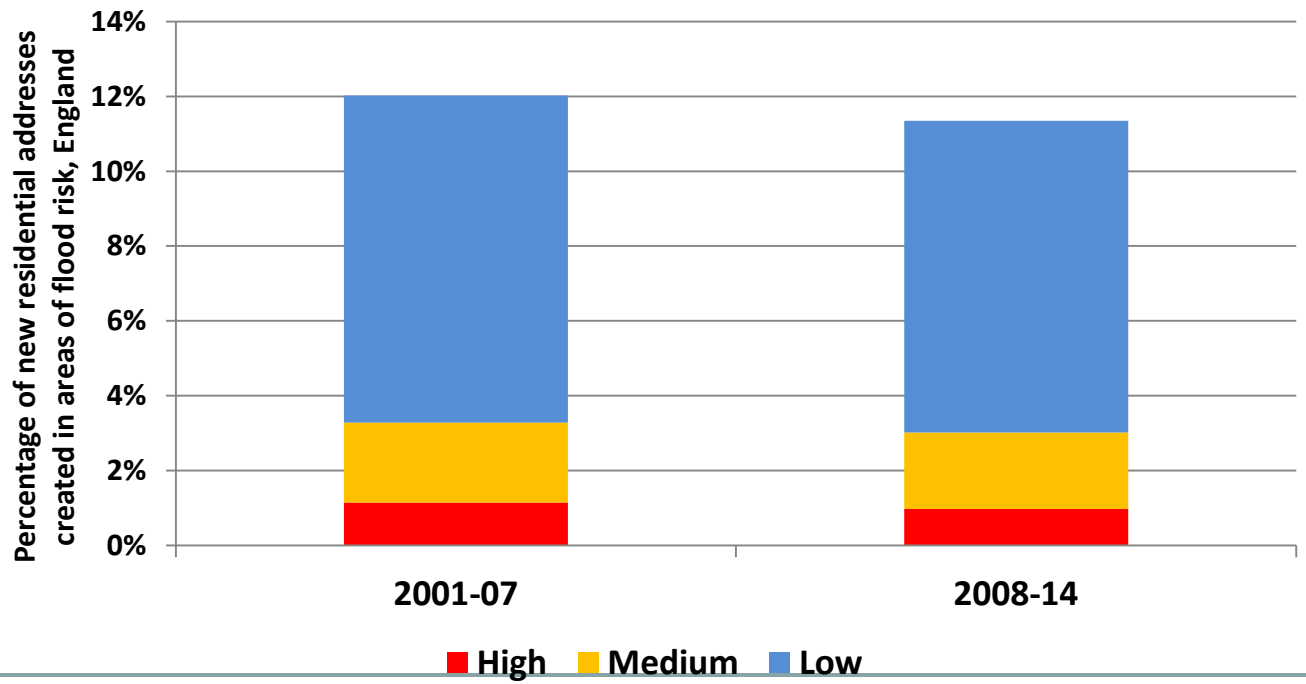
Measure	Data series	Source	Trend	Implication
Proportion of new residential addresses created in areas of flood risk	2001-2014	OS Mastermap/ EA NaFRA	⇩	**Proportion of new residential addresses created in flood risk areas has only slightly declined, from 12% (2001-07) to 11% (2008-2014).**
Number of new residential addresses created in areas of high flood likelihood	2001-2014	OS Mastermap/ EA NaFRA	⇩	**Number of new residential addresses created in areas of high risk has declined since 2008, but homes are still being built in areas that are poorly protected by flood defences.**
Proportion of new residential addresses created in areas of flood risk, by region	2001-2014	OS Mastermap/ EA NaFRA	⇔	**Proportion of floodplain development has increased in some regions, but declined in others**
Proportion of planning applications with unsatisfactory flood risk assessment	2009-2013	Sample of EA objections	⇔	**Over one-third of planning applications do not submit satisfactory FRAs, which raises concerns that a high proportion of development is going ahead without robustly assessing flood risk.**
Proportion of planning applications approved despite sustained EA objection	2009-2012	Sample of EA objections	⇩	**Very few applications going ahead against EA advice, although the EA does not provide bespoke advice on all applications in flood risk areas and is not always informed of the outcome of their objection .**

Avoid inappropriate new development in flood risk areas

Proportion of new residential addresses created in flood risk areas - England

⇩

Proportion of new residential addresses created in flood risk areas has only slightly declined, from 12% (2001-07) to 11% (2008-2014).



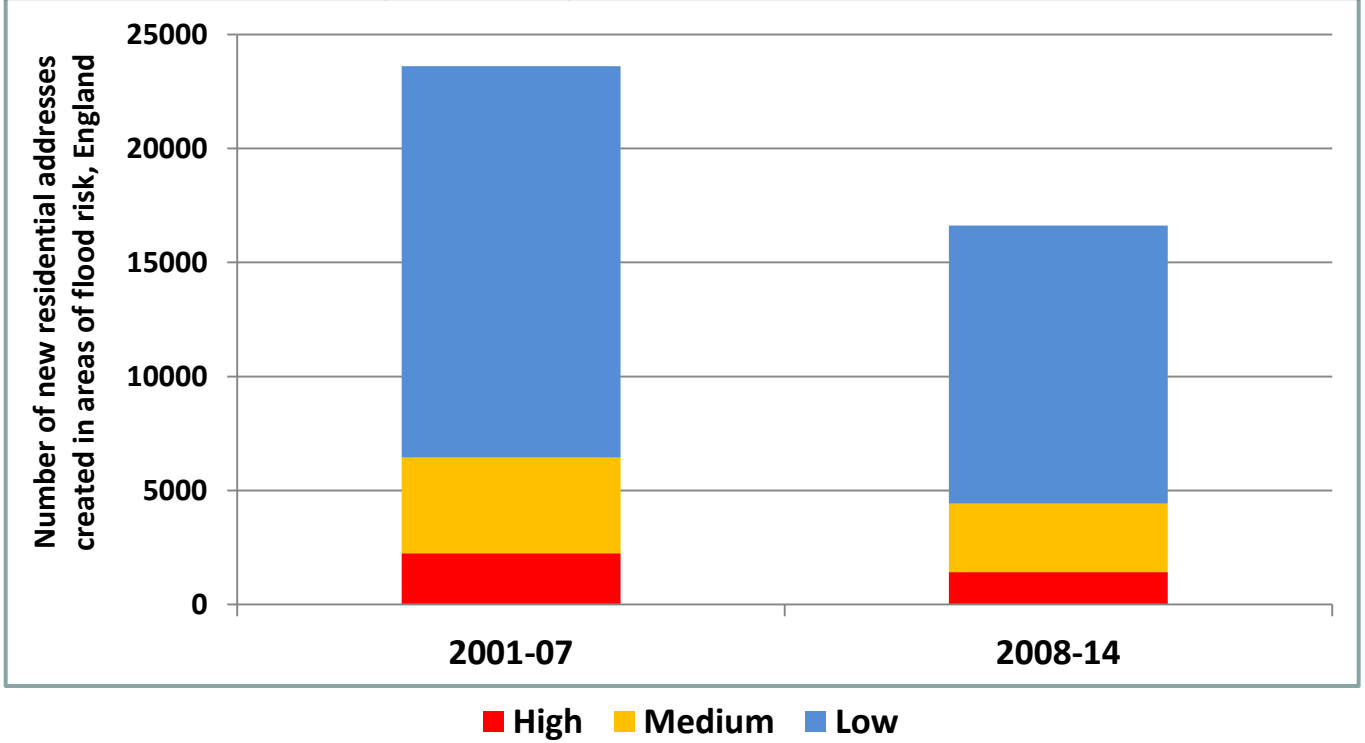
- An average of 12% of new residential addresses were created in areas at risk of river or coastal flooding between 2001-2008.
- The proportion declined to 11.3% between 2008-2014.
- An average of 1.1% of new residential addresses were created in areas with a high likelihood of flooding (>1:30 year) between 2001-2008.
- This declined to 1.0% between 2008-2014.

Notes: GIS mapping was used to identify the number of properties over four time periods (2001, 2008, 2011 and 2014). The data points for each year are November 2001, July 2008, September 2011 and May 2014. The total time series for this analysis is therefore 12.5 years. The data used was the Ordnance Survey Mastermap Address Layer. This gives the grid reference, type, address and other parameters for 27 million properties in Great Britain.

Source: HRW for the ASC (2015)

Avoid inappropriate new development in flood risk areas

Number of new residential addresses created in areas of flood risk - England	⇩	Number of new residential addresses created in areas of high risk has declined since 2008, but homes are still being built in areas that are poorly protected by flood defences.



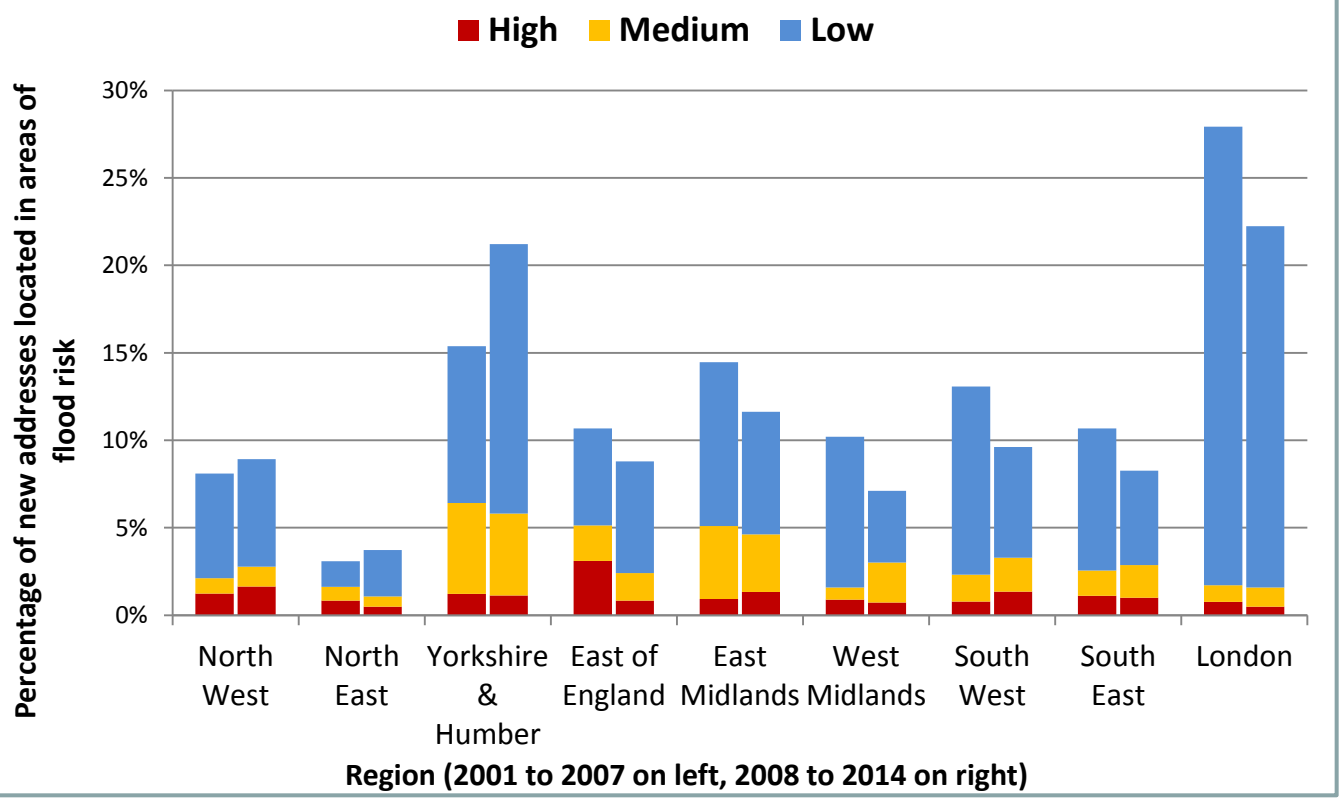
- Average of 2,200 new residential addresses were created per year in areas of high likelihood (>1:30 year) between 2001-2008
- This reduced to an average of 1,400 a year between 2008-2014.
- Development in high risk parts of the floodplain appears to be mostly occurring outside, or on the edge of, major population centres, in more sparsely populated parts of the country. Community-level flood defences are more difficult to justify on cost-benefit terms in these areas
- Average of 7,200 new residential addresses were created in areas of medium likelihood (1:30 to 1:100 year) between 2001-2014.
- Some areas of the floodplain currently with a medium likelihood are expected to be at a high likelihood in the future with climate change/sea level rise.

Notes: As above slide

Source: HRW for the ASC (2015)

Avoid inappropriate new development in flood risk areas

Proportion of new residential addresses created in areas of flood risk - Regions	⇔	Proportion of floodplain development has increased in some regions, but declined in others



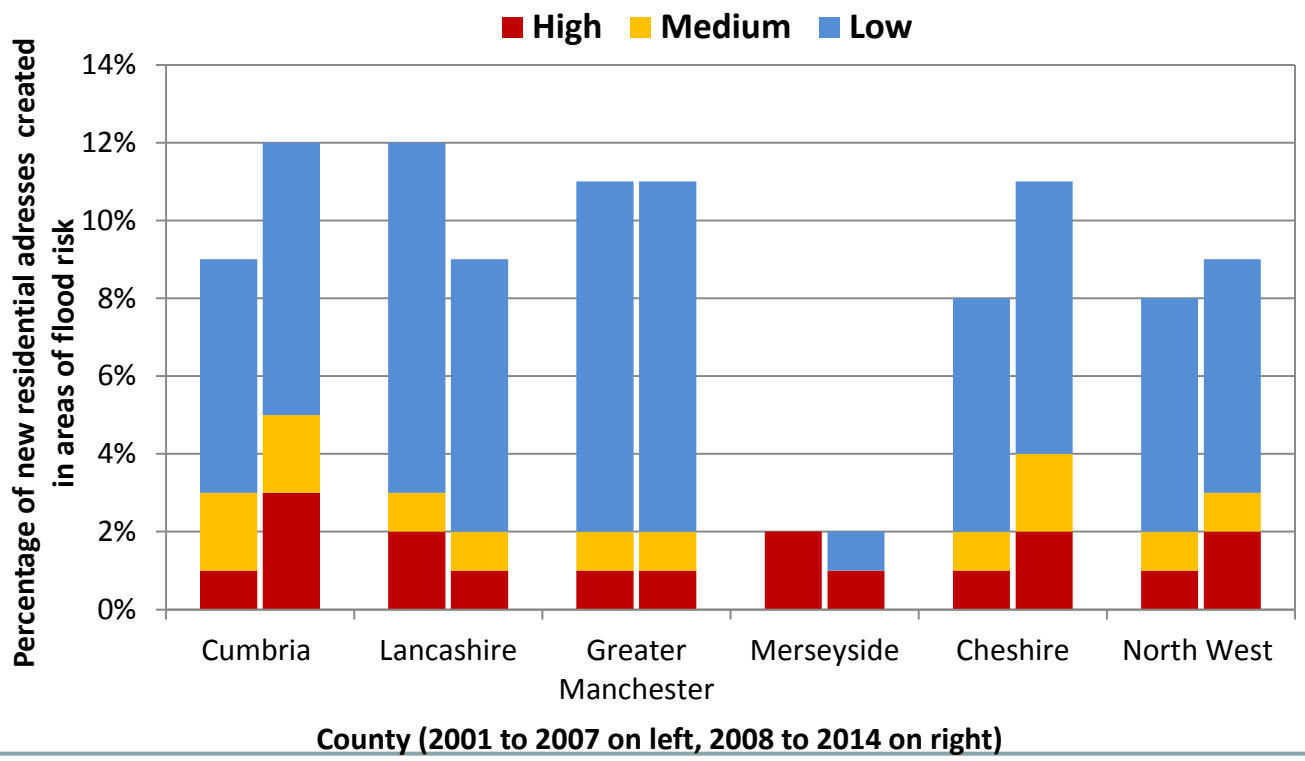
- The proportion of floodplain development has increased in northern England but declined in the midlands and south.
- Some regions have seen development in high risk areas increase, e.g. from 1.2% to 1.6% in North West, from 0.8% to 1.4% in South West and 0.9% to 1.3% in East Midlands
- Other regions have seen development in high risk areas decline, e.g. 3.1% to 0..8% in East of England, or stay broadly the same.

Notes: As above slide

Source: HRW for the ASC (2015)

Avoid inappropriate new development in flood risk areas

Proportion of new residential addresses created in areas of flood risk - North West	⇩	Within regions there is also variation – for example North West has seen proportion of floodplain development increasing in some counties, but declining in others



- Two counties (Cumbria and Cheshire) have seen an increase in floodplain development
- Decrease in Lancashire
- Remained the same in Greater Manchester and Merseyside

Notes: As above slide

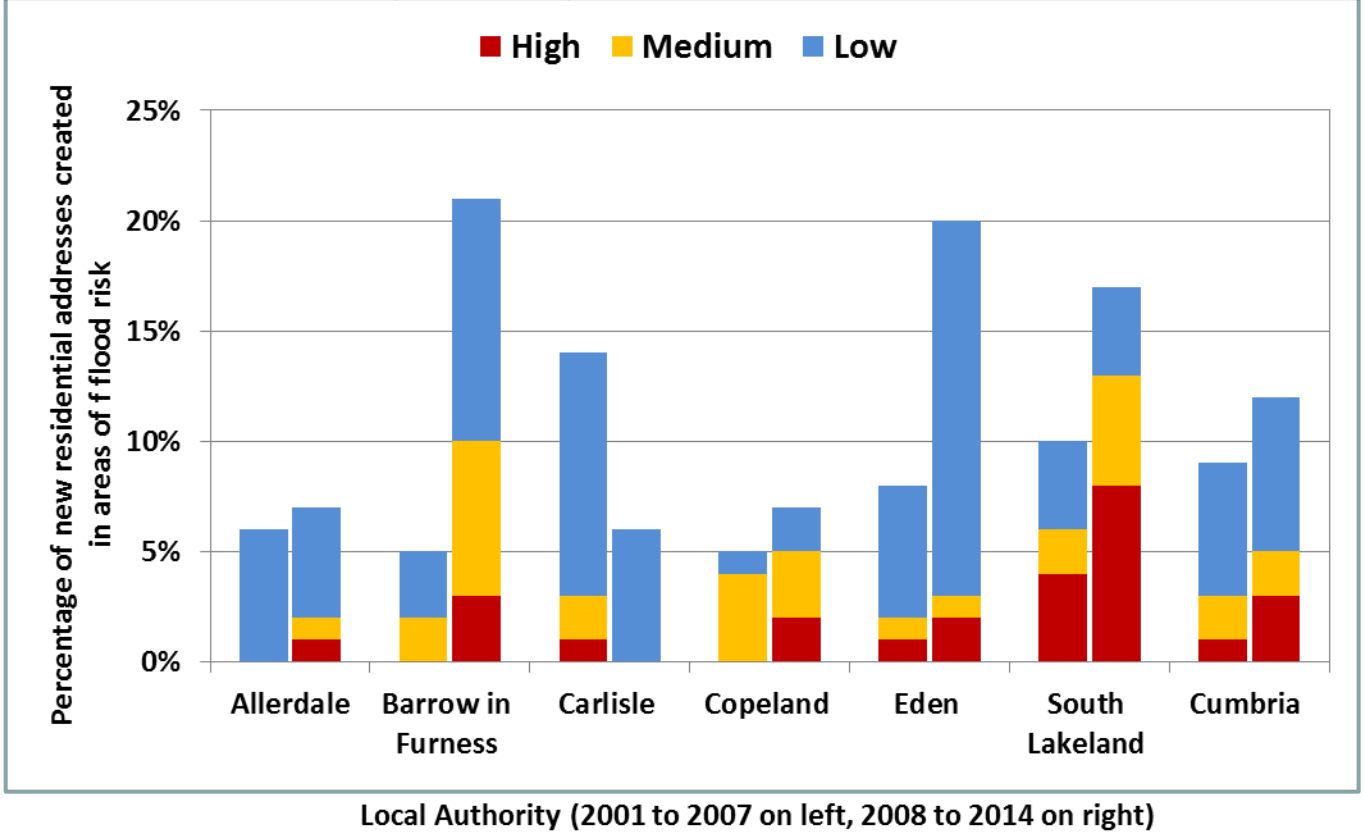
Source: HRW for the ASC (2015)

Avoid inappropriate new development in flood risk areas

Proportion of new residential addresses created in areas of flood risk, Cumbria

⇩

Variation also within counties, for example Cumbria.



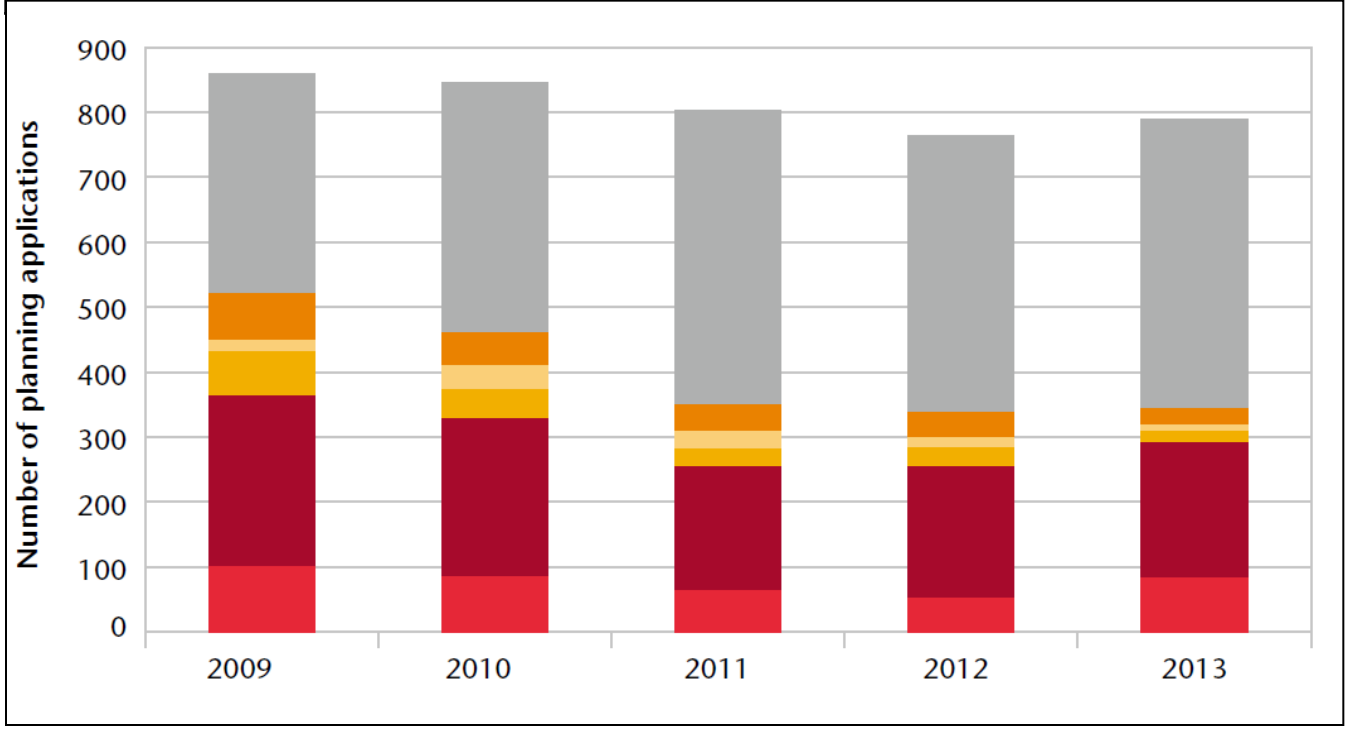
- Five of the six Districts have seen increases in floodplain development since 2008
- Only Carlisle has reduced proportion
- Also increase in proportion of new residential addresses located in areas of high likelihood (1:30 year)

Notes: As above slide

Source: HRW for the ASC (2015)

Avoid inappropriate new development in flood risk areas

Reason for EA objections	⇔	Proportion of objections due to unsatisfactory FRAs has remained at around 30% of all applications



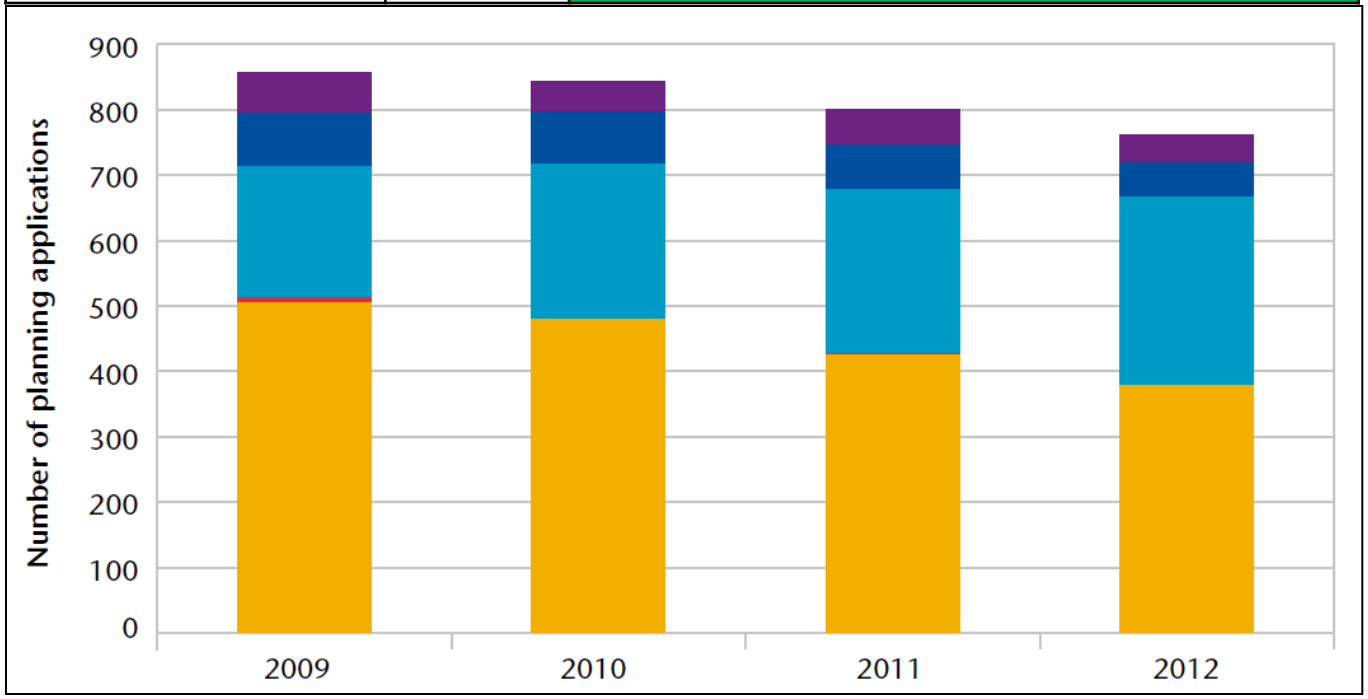
- In our sample in 2013, 11% of applications failed to produce a FRA, despite this being a requirement of planning policy.
- A further 26% were judged inadequate by the Agency.
- Common problems are due to developers failing to assess the risk of surface water flooding, and not taking account of climate change.

Notes: Based on a representative sample of 4,060 Environment Agency responses on flood risk grounds to planning applications made between 2009 and 2013 across 42 local authorities in England. The sample represents around 10% of the total number of flood-related responses made by the Agency over that period in England. The Agency objected to 1,697 of the 4,060 applications sampled. In some cases more than one reason was given for an objection, meaning that there were over 2,000 separate reasons for an objection overall.

Source: ASC (2014), page 47

Avoid inappropriate new development in flood risk areas

Outcome of EA objections	⇩	Very few applications going ahead against EA advice, although Agency not informed of outcome in high proportion of cases.



- Where the EA is informed of the outcome, their advice is adhered to by local planning authorities in almost all cases.
- There were only 11 applications out of the 3,000 we reviewed between 2009 and 2012 where a sustained EA objection was over-ruled by the planning authority (red in the chart). Almost all these instances were in 2009
- The Agency were not informed of the outcome in 41% of application sin our sample in 2013 (50% in 2009).

Notes: Based on a representative sample of 4,060 Environment Agency responses on flood risk grounds to planning applications made between 2009 and 2013 across 42 local authorities in England. Data for 2013 (789 applications) is not included as a high proportion of applications had not been determined when the analysis was completed in 2014. The sample size is therefore 3,267.

Source: ASC (2014), p48

4. Heat-related health impacts

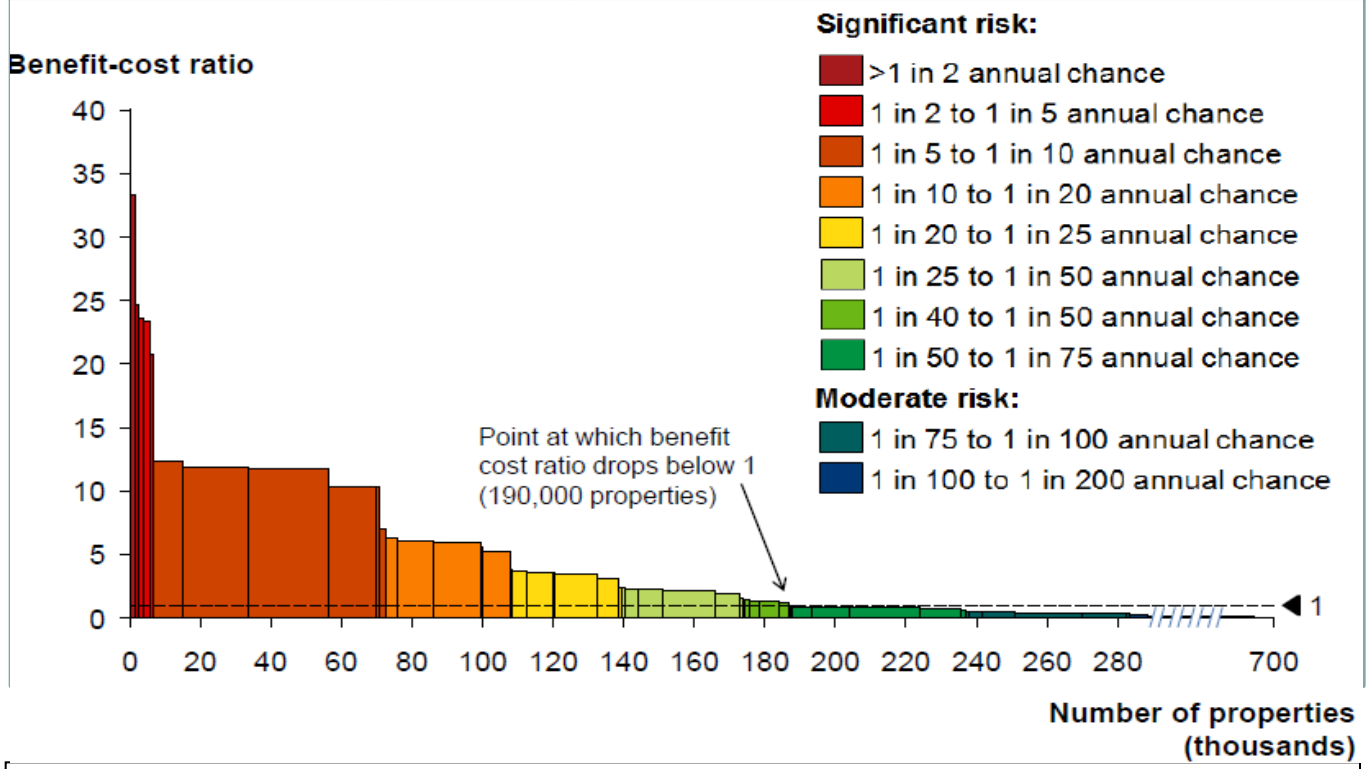
- Please see the dashboard for **Chapter 4: Healthy & Resilient Communities**

5. Residual flood risk to existing buildings

Measure	Data series	Source	Trend	Implication
Rate of retrofitting property-level flood protection (PLP) measures	2008-2011	Defra/EA	N/A	Current uptake of PLP at 300 homes per year (2015 – 2021) means it will take 400 years to reach all homes where measures would be cost-beneficial.
Awareness of flood risk amongst people living in the floodplain	2010/11 – 2013/14	EA	↔	Half of people living in the floodplain think they are "not at all at risk" and the number has remained stable despite recent flood events.
Number and value of insurance claims for residential properties damaged by flooding	N/A			Time series not available.
Number of homes within the Flood Re subsidised insurance scheme	N/A			Flood Re will begin formally in April 2016. Initially, around 350,000 households are expected to be within the scheme.
Residential uninsured flood losses	N/A			No time series data available. Following the 2007 flooding, EA research identified 24% of residential losses were not insured.

5. Residual flood risk to existing buildings

Rate of retrofitting property-level flood protection (PLP) measures	N/A	Current uptake of PLP at 300 homes per year (2015 – 2021) means it will take 400 years to reach all homes where measures would be cost-beneficial.



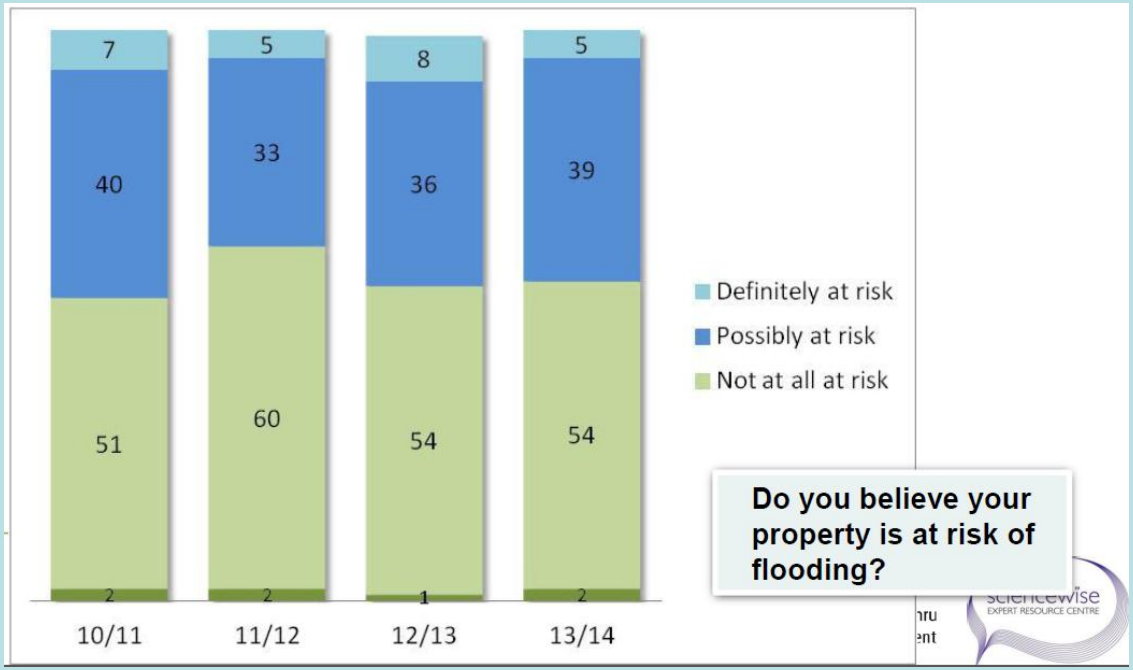
Notes: Chart plots benefit-cost ratio of installing a package of measures for properties. Each coloured block represents a different level of flood risk, and each bar within the block represents a different property type. The width of each bar corresponds to the number of properties of a particular type and at a particular level of flood risk.

- Current uptake of PLP is low. Around 1,100 households were retrofitted with PLP measures as part of a Government grant scheme between 2008 and 2011.
- An estimated 50 properties (mostly commercial) have been retrofitted outside the scheme over the same period, based on a survey of suppliers.
- Our analysis has identified a range of low-cost measures (around £4,000 per property) that could reduce flood damages to properties with a greater than 1:50 chance of flooding in any given year.
- PLP measures would be cost-effective for around 190,000 properties (120,000 households). This number will increase with climate change.
- The six-year investment plan (2015-2021) expects to protect 1,800 homes with PLP measures.

Source: ASC (2012), p43

5. Awareness of flood risk

Awareness of flood risk amongst people living in the floodplain	↔	Half of people living in the floodplain think they are "not at all at risk" and the number has remained stable despite recent flood events.



Notes: Data collected by EA as part of annual opinion survey (eg. Harris Interactive 2013)

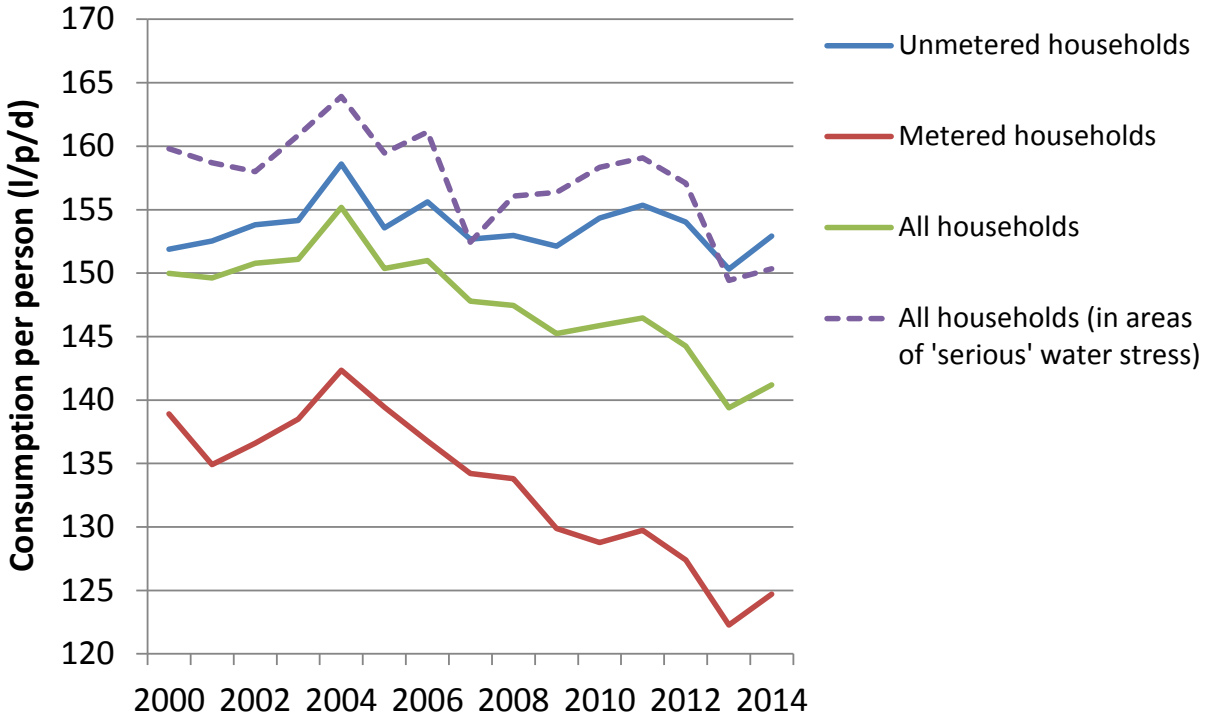
Source: ASC (2012), p43

6. Water demand in the built environment

Measure	Data series	Source	Trend	Implication
Consumption per person	2000 to 2014	Ofwat	↓	Reduces pressure on water resources and delays or defers need for investment in supply-side measures.
Uptake of water metering in households	2000 to 2014	Ofwat	↑	More customers will have a price of water that reflects the volume of water they use, incentivising demand management.
Leakage losses	2000 to 2010	Ofwat	↓	Reduces pressure on water resources.
Number of new properties built to standards that exceed building regulation requirements	2008/09 to 2013/14	CLG	↑	New development is adding less pressure to water resources than it otherwise would.

6. Water demand in the built environment

Consumption per person	↓	Reduces pressure on water resources and delays or defers need for investment in supply-side measures.



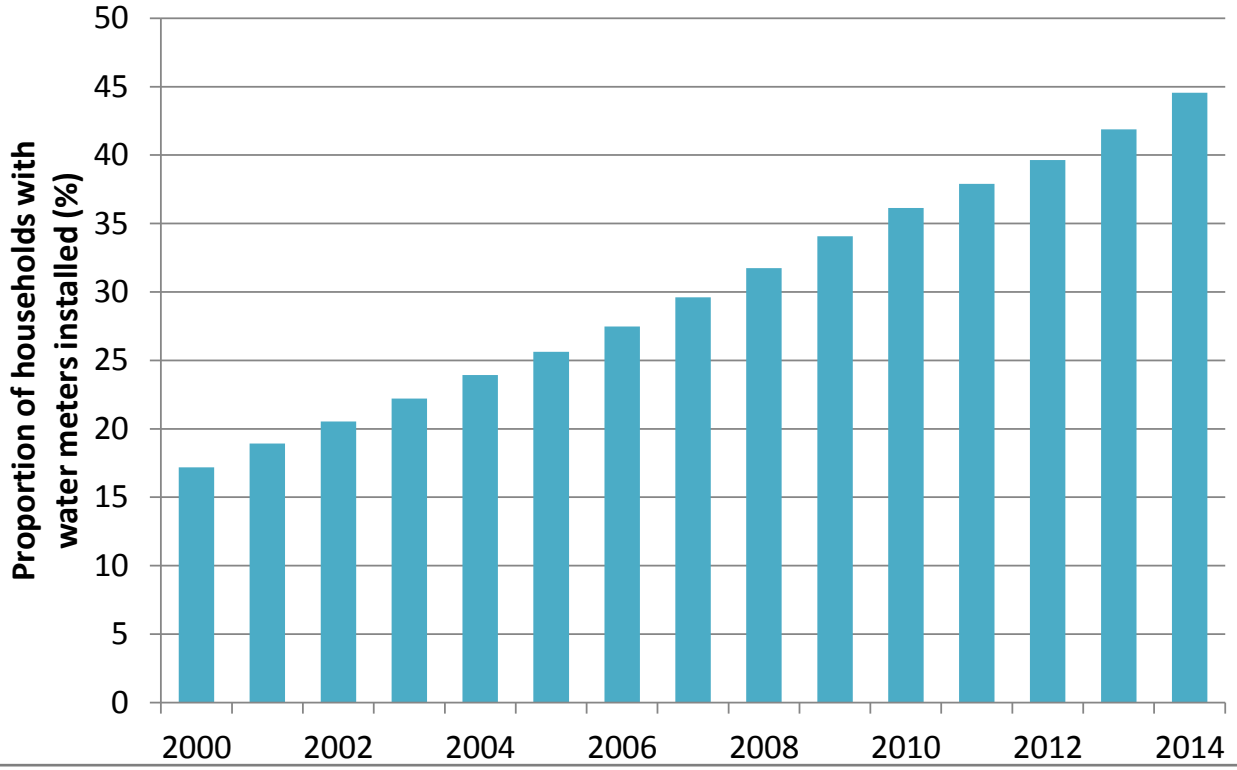
Notes: Metered consumption is measured; unmetered consumption is estimated based on measurements of deployable output, metered consumption and leakage. The purple dotted line shows the average consumption in areas that are defined by the Environment Agency as at 'serious' water stress.

- Average consumption per person across all households fell from 155 l/p/d in 2003-04 to 141 l/p/d in 2013-14. This reduction has been primarily driven by a fall in consumption in metered households.
- Average consumption per person in unmetered households has remained relatively constant in the past 15 years. This may in part reflect that those households that choose to have a water meter fitted tend to have lower consumption and there is a flow of these households over time from the unmetered to the metered category.
- Universal metering is allowed in areas that the Environment Agency defines as being at 'serious' water stress. These areas tend to be in the south and east of England. Average consumption in these areas is higher than the average of all households.

Source: Environment Agency (unpublished).

6. Water demand in the built environment

Uptake of water metering in households	↑	More customers will have a price of water that reflects the volume of water they use, incentivising demand management.



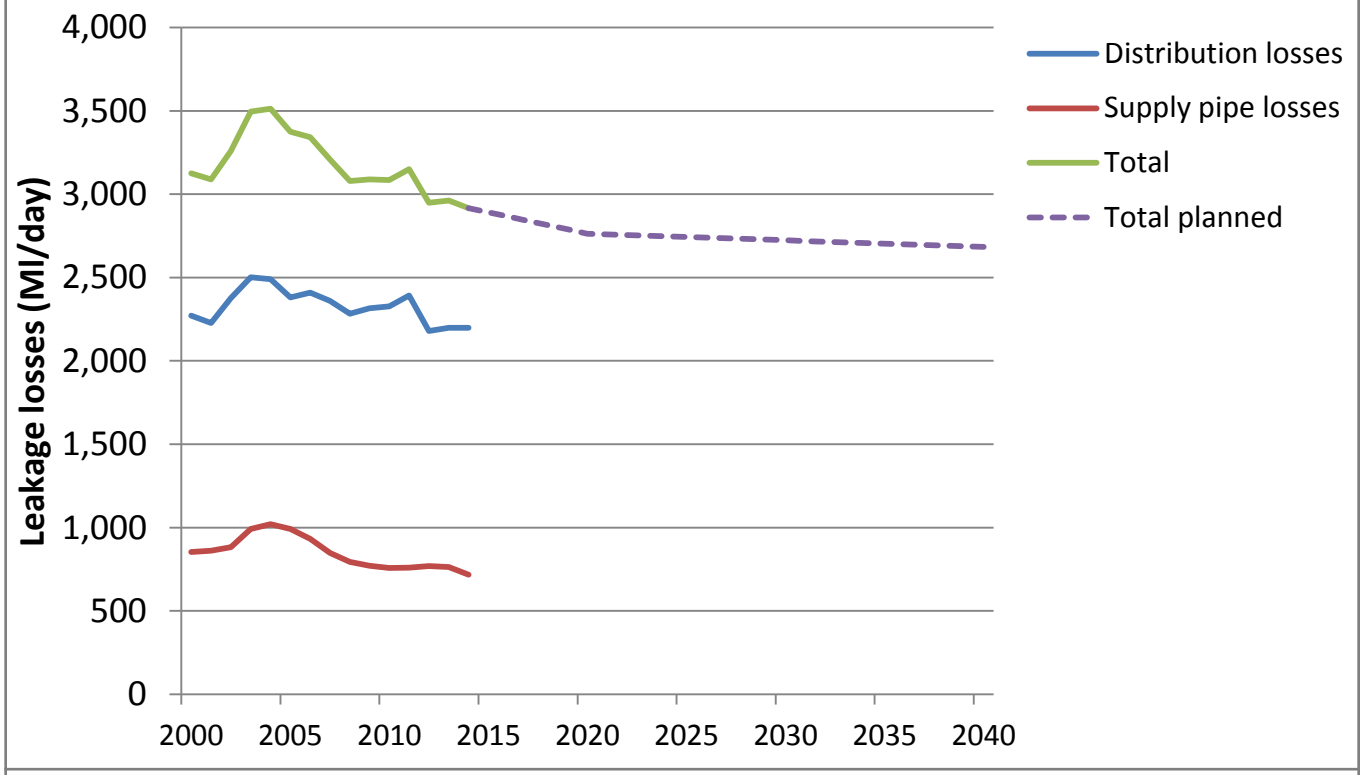
Notes: These figures are cumulative totals.

- The proportion of households in England with meters installed has increased gradually by around 2 percentage points each year since 2000.
- By the end of 2020, Ofwat project that 61% of households in England and Wales will be metered.
- Only areas that are defined as at 'serious' water stress by the Environment Agency may be considered for universal metering.

Source: Environment Agency (unpublished).

6. Water demand in the built environment

Leakage losses	↓	Reduces the pressure on water resources.



Notes: Distribution losses refer to losses from companies' distribution networks; supply pipe losses refer to losses from customers' pipes

- Measured leakage losses fell by around a third following the drought in 1995, but have since levelled off at around 22% of public water supply.
- In the final determination of the 2014 Periodic Review, Ofwat announced an industry-wide target to reduce leakage by 153 Ml/day by 2020. This compares to the commitment to reduce leakage by 97 Ml/day for the 2009 Periodic Review.
- In their Water Resources Management Plans, companies are proposing to reduce leakage by a further 87 Ml/day, or 233 Ml/day compared to current levels. This is shown by the dashed purple line.

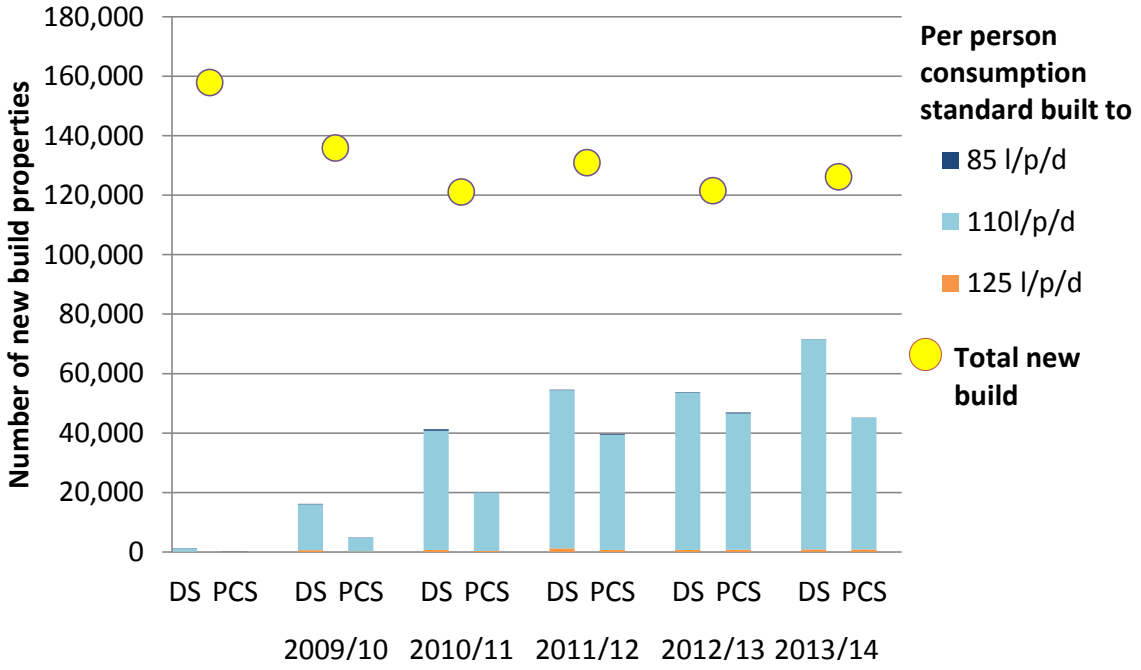
Source: Environment Agency (unpublished).

6. Water demand in the built environment

Number of new properties built to standards that exceed building regulation requirements

↑

New development is adding less pressure to water resources than it otherwise would.



Notes: DS and PCS refer to Design Stage and Post Construction Phase of a development. Under the Code for Sustainable Homes, a development could be issued with a certificate at the Design Stage, Post Construction Stage, or both meaning it is not possible to determine the total number of properties constructed to a particular standard. The l/p/d represent the minimum level that must be achieved to gain a particular star rating under the Code. A developer may exceed these requirements to achieve a higher total star rating.

- Existing building regulations require all new build properties to have a modelled consumption per person not in excess of 125 l/day.
- Our analysis suggests developers could achieve a standard of 115 l/day at no extra cost.
- Many developers are already exceeding these levels through the Code for Sustainable Homes (CSH), as demonstrated by the rise in Design Stage (DS) and Post Construction Stage (PCS) certificates issued.
- CLG is consulting on adding an 'optional requirement' for local planning associations to require a minimum standard of 110 l/p/d as part of the Housing Standards Review.

Source: DCLG

Adaptation Sub-Committee

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