

# Environmental Audit Committee

## Oral evidence: Flood resilience in England, HC 550

Wednesday 11 June 2025

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Members present: Mr Toby Perkins (Chair); Julia Buckley; Ellie Chowns; Alison Griffiths; Chris Hinchliff; Martin Rhodes; Alison Taylor; John Whitby.

Questions 241 – 317

### Witnesses

[I](#): Emma Howard Boyd CBE, Chair, Steering Committee, Public First.

[II](#): Jonathan Moxon, Flood Risk Manager, Leeds City Council; Emma Brown, Manager of Strategic Partnerships, Yorkshire Water; Matthew Shelton, Route Engineer, Network Rail.

[III](#): Martin Lennon, Director of Policy, Flood Re; Megan Dunford, Head of Large and Complex Property Claims, Zurich UK; Mark Shepherd, Head of General Insurance Policy, The Association of British Insurers (ABI).

Written evidence from witnesses:

[London Climate Resilience Review](#)

[Flood Re](#)

[Association of British Insurers](#)

[Zurich UK](#)

[Flooded People UK](#)

## Examination of witness

Witness: Emma Howard Boyd.

Q241 **Chair:** Welcome everybody to the latest meeting of the Environmental Audit Committee as part of our review into flood resilience and adaptation. We are delighted to be joined on the first panel today by Emma Howard Boyd. Emma, thank you for joining us. Can I first invite you to introduce yourself, the organisations that you represent or have represented and your interests, particularly in the area of flooding?

**Emma Howard Boyd:** Thank you for inviting me along today to give some evidence. I am Emma Howard Boyd. I am the former chair of the Environment Agency. I led the London climate resilience review for the Mayor of London. I think I am here today because of some evidence that I submitted on behalf of a group of people working with Public First on flooding, economic growth, resilience and communities.

Q242 **Chair:** I have a very general question first. What do you see as the biggest impacts of flooding on the UK economy, both immediately and in the longer term?

**Emma Howard Boyd:** I will start by thanking you and the Committee both for putting priority on this particular agenda and, after the last session, for writing to the Chancellor and the Environment Secretary, particularly around ongoing long-term funding. What we have heard today in the spending review gives us a very strong signal that this current Government understand the need for long-term investment on flooding.

From my perspective, both from having visited communities in my role as chair of the Environment Agency and from the work that I have done more recently with Public First on the economic agenda surrounding flooding, too often we look at flooding with a very narrow perspective. If you look at some of the medium and longer-term impacts of not investing in flooding and the effects that flooding has had on communities, productivity and long-term growth, you start seeing a very different picture. We know from work that the Environment Agency and others have done that investing in flood defences makes economic sense. For every £1 invested in flood defences, you see at least £8 of reduction in damage to communities. Some of that is actually protecting Government's public-funded infrastructure, whether it is your railways, waterways, roads or the many different things that are impacted by flooding.

The work that we did specifically and submitted to the Committee in evidence with Public First shows that the immediate physical damage to property and infrastructure is around £2.4 billion annually. If you start looking at the productivity impacts from people who cannot get to work easily or whose workplace is disrupted because of flooding, that can



cause at least £290 million of economic damage annually, and that is probably an underestimate.

The most significant economic impact—not that any of that is insignificant—that we found evidence of from this research, which is backed by other research done, including by the Bank of England, is the long tail of economic damage. In the recent consultation that the Environment Agency has just published around the funding structure, it refers to GDP being reduced by 1% after a couple of years and the fact that it takes at least five years to still be below the GDP where it was before the flood incident. The figure that we looked at from Public First is pressure on the economy worth at least £6.1 billion over the next decade after a flood event. It is about really understanding those long-term impacts of flooding.

**Q243 Chair:** Let me stop you there, because I fear you might get on to some of the things we are going to ask you about in a moment. There are a number of members of this Committee who represent constituencies that have had big issues with flooding. That is one of the reasons why it was very prominent in our minds. You are absolutely right that the impact both on householders and on businesses when they have had flooding, particularly when they have had repeated flooding, is very substantial indeed.

I am glad to hear that you welcomed today's announcements about the investment in longer-term flooding. What is your sense about the extent to which that long-term flood resilience has, over the years, been given the priority it needs? Do you get a sense that things are improving at all?

**Emma Howard Boyd:** I would like to think that we are at the start of a very different focus on investment in flood resilience, and broader climate resilience as well. One thing that I would urge the Committee to do is look more broadly than flooding and look at other issues, such as water scarcity and extreme heat, as we start seeing these events impact different sectors and parts of the country in different ways. With the announcement today of three years' funding and, in the letter that the Environment Secretary wrote to you and you published on your website earlier this week, talking about the 10-year infrastructure strategy, there is a massive opportunity to make sure that investment is getting ahead of the climate change that we are seeing, looking at not just investment in new forms of flood defences, but, critically, focusing on ongoing capital maintenance.

There is no doubt that over the last 10 years we have seen ongoing impacts on existing defences as they have been pummelled by water, but also, during some of our dry events, drying out, which means that the condition of them is not where it should be. There is the figure of £1.5 billion that the National Infrastructure Commission, as was, came up with in 2023. We are not quite at that level yet, but that ongoing signal of investment in flood resilience, and of not just limiting it to the Department for Environment, Food and Rural Affairs, is important. We



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should be thinking about all the infrastructure that this country is about to invest in. Some significant programmes were announced today.

All that, over its lifetime, is at risk from changing weather patterns. We need to take the opportunity to lock in climate resilience, as opposed to locking in that vulnerability to changing climate.

Q244 **Chair:** From your perspective, do you think that the narrative on flood resilience, which is seen as a cost, needs to change to be more about an enabler of economic stability and growth, as opposed to simply being seen as a negative thing that we have to do?

**Emma Howard Boyd:** In all of this we have to remember the people who are directly affected by flooding. When they have experienced flooding it feels terrible, and it may feel slightly discourteous to be talking about flood prevention through this positive lens.

Having said that, in terms of broadening the understanding of how significant flood events can be beyond the immediate impact to people and communities, changing the narrative is crucial. Listening to how the Chancellor today closed her speech launching the spending review, where she talked about choosing stability rather than chaos and investment rather than decline, this is a really important narrative to reinforce how you can change a community or city that has been blighted by flood into something that is thriving.

The next panel, with the example of Leeds and the programme of work there, is a very good example. We used it in the Public First report to highlight how you can take a community and a city that has been very much affected by flooding—not just households and businesses, but the wider infrastructure surrounding that city—and turn it into a very positive story of growth. That is where perhaps we will have broader impact with those other Departments that are building the schools, hospitals, railway networks and utilities that are also experiencing flooding and other climate impacts.

Q245 **Chair:** Your report called for a £1.5 billion annual investment. We had the Government announce £2.5 billion over two years. We have now just had the latest spending review, which I think has committed £4 billion over the following three years, so just £500 million shy of what you were asking for. We will be continuing to ask for more, just as you will, I am sure. Give us a sense of what sort of difference that longer-term investment—now a five-year window of commitment—should make.

**Emma Howard Boyd:** I think that what was announced today was just a three-year window, but I am hopeful, from what was written in the response from the Environment Secretary and the fact that we have a 10-year infrastructure strategy announced in the next few days, that the flood investment programme will form an integral part of that. You will know, as MPs, where you have managed to get the investment for your



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communities, how long it can take to get the right scheme agreed, funded and then implemented.

It is important to have that long-term commitment so that you are giving certainty over time to your communities, but also to the supply chain that we need in order to help build those defences and make sure that the programme is delivered over time. I am hoping that what we heard today is a nod towards the programme being part of that long-term plan that will allow different projects to be worked through with full involvement of local communities, so that you can start showing the difference that will be made over a period of time. Also, that signal of a longer framework will hopefully bring in some of the investment that we need from the private sector and other sectors—it may be at a local level—to allow investment to take place.

**Q246 John Whitby:** You have already alluded to the fact that flooding affects various parts of Government. Do you think that the Treasury has taken a joined-up approach to the financial risks involved?

**Emma Howard Boyd:** We are at the early stages of that. I would like to think that this is at the start of a very different programme of thinking about broader climate resilience. I am aware of different arm's length bodies within different Departments that have understood—particularly highways and railways—that their infrastructure has been dramatically impacted by flooding and other impacts. The way that this is given a priority as underpinning growth and the right infrastructure, and how that is signalled from Treasury, is something that still needs to be ramped up.

I was encouraged by what was put into the Government's manifesto pre-election around coalescing and bringing climate resilience into the centre. From my experience at the Environment Agency, but also from a background in finance, it is somewhere between Treasury, because you have to make sure you have the investment there, and Cabinet Office. If you have your Cabinet Office and your Treasury working closely together, you can send the right kinds of signals throughout all that infrastructure spend that this needs to be built in a way that takes our changing climate into account.

The Environment Agency, just before Christmas, published its latest national assessment, which looks not only at housing and communities, but also all types of infrastructure. It is that type of infrastructure that is at risk, so other Departments need to be paying close attention.

**Q247 John Whitby:** We have just had the spending review—literally; it is still going on—but do current Treasury assessments properly reflect what it costs if we do not act on flood risk, such as the damage to homes, businesses and infrastructure?

**Emma Howard Boyd:** This is, again, where more economic work across all Departments could really help understand what is needed to invest properly. I would also like to see more members of the institutional



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investment and insurance industries almost go into a compact with Government that, if they are going to be investing in all of this infrastructure, the expectation is that the right policy framework will exist to make sure that that is ready for climate change.

Specifically on housing, there is a massive opportunity with the announcement today around social housing; through new build, but also potentially through retrofit, you could get a fantastic programme of investment to make sure that that housing is fit for purpose. At the same time as we may be looking at energy efficiency, we need to be looking at water efficiency and whether those buildings are fit to live in in increasing temperatures, but also ready for the surface water flooding that we know is going to form more of our flooding than that from the coast, sea level rise or indeed the rivers.

**Q248 John Whitby:** Are the Government underestimating the long-term benefits of investing in flood defences and resilience?

**Emma Howard Boyd:** We need to take a serious look at the benefits of investing in climate resilience. I know from my work in finance at the Bank of England and with the Financial Conduct Authority that a group they have put together to look specifically at climate risk has recently done a report around adaptation finance. There is a way to coalesce all this thinking into making sure that Government, working with investors, are truly understanding the benefits of getting ahead of climate change, rather than the costs of not doing that work. I would commend some work that Paul Watkiss has done. There may be opportunities to submit more of this kind of evidence to the Committee.

**Q249 John Whitby:** Would introducing a national flood resilience standard help to ensure that all Government infrastructure is built to a consistent level of protection, such as the housing?

**Emma Howard Boyd:** Absolutely, yes. It is something I called for when I was chair of the Environment Agency, alongside the chair of the National Infrastructure Commission—now the chair of NISTA. It is not just how you are building the resilience of the place. It is also the resilience of the materials in use to make sure that they can withstand those climate events that we are experiencing. There is a massive opportunity.

**Q250 Chair:** You spoke about the insurance industry. We are going to be hearing from them later today and it will be interesting to see the extent to which they are interested in opening up that discussion.

I am minded that we have a big scheme in my constituency that cost about £16 million back in 2018 for flood protection on the River Rother. It holds 250,000 cubic metres. Four or five years after that was opened, the same people were flooded during Storm Babet who were flooded back in 2007. They might well think, "That was no use". It is a useful reminder that even Government spending money does not necessarily stop the same people being flooded when those huge weather events happen.



How realistic is it to expect the insurance industry to bank that they will get savings from investing in these kinds of flood resilience programmes? Do you think that there is an economic argument that we can make to the sector that says, "If you help with this funding, you will end up benefiting as an industry", or is that wishful thinking?

**Emma Howard Boyd:** It makes absolute sense, and it depends on the different types of schemes that you are introducing. I was at a roundtable earlier today that was part of the all-party parliamentary group focusing on flooding—in fact, Alison Griffiths was there at the meeting too. There are some different measures; property-level resilience might be one of the answers, but you also need to look at some of these bigger schemes, and the opportunity of using nature-based solutions, all the time recognising that you can only better protect against flooding.

Within the packets of measures that you need to introduce, you need to make sure that you are building on your capabilities of warning and informing people. Some of the measures that you may put in place will allow people more time to get to a safe space. There may be some aspects of a home where it needs to be understood that it will be repeatedly flooded. That is where making sure the right materials are being used has to be part of the mix.

Q251 **Julia Buckley:** I was really interested in your description that we have an opportunity here with the new build to get that resilience, both in the fabric and in the design. We have had lots of discussions from the water infrastructure industry around asset management. I would be curious to hear what you think about the idea of incentivising or encouraging new developers to install an additional pipe for grey water to reuse rainwater as they are installing their new homes.

Those could perhaps be incentivised to have, for example, a fast-track licence—not a financial incentive, but speeding up the licensing for those properties. For every new build, we are able to reduce groundwater flooding, because we are taking away that rainwater, and we are reducing the demand on treated water, and therefore reducing drought. What do you think about that kind of scheme? You talked about having a standard and programmes. I would love your view on that way forward.

**Emma Howard Boyd:** I love that focus on incentivising people to do things differently. You have given one great example. Another scheme that I have seen in different parts of the world is around how we incentivise spongier surfaces, rather than harder surfaces. You can work through a programme that accelerates action, but is the right mix of both statutory elements—there are some things that could be put on the statute that have been waiting to go on the statute for years, such as sustainable urban drainage—and some other mechanisms that are around giving the right incentives. That includes how you incentivise property-level measures, so that it becomes part of, potentially, a green mortgage. If you own your property personally, at the same time that you are looking at perhaps putting in energy efficiency schemes, you are looking



at water efficiency and making sure that your home is fit to live in in extreme heat. Join-up between different streams of work and Departments, again, is really key. If you are looking at this at an individual home level, it is one home and there are many things. If you are disrupting that home to put in different measures, you may as well get many things done at that point in time and see whether there are different ways of incentivising that action.

**Q252 Alison Griffiths:** I wanted to look at the whole-economy impacts and the role of private investment. In your earlier answers, you have talked about how flooding disrupts jobs, businesses and supply chains, and yet these impacts are often overlooked. What are the biggest blind spots in how Government currently assess the whole-economy cost of flood events?

**Emma Howard Boyd:** It is flooding, but some of those other additional impacts are broader climate impacts; it is bringing it all together in that whole-economy way, so that you are not missing out on, for example, the health impacts. I know that Julia has worked with her constituency on the mental health impacts. I think that individuals who have been flooded are six times more likely to experience mental health issues. All these things have economic costs. Bringing them together properly in a central economic assessment, which I do not think has been done as yet, would be very helpful to understand the overall impact, and particularly that longer-term impact that I described earlier, the long tail of both health and economic impacts.

**Q253 Alison Griffiths:** That is very helpful. The Government have talked about unlocking private investment for flood resilience. What is holding that back and what changes could make co-investment more likely?

**Emma Howard Boyd:** One complexity of private investment is looking at the cash flow and the revenues from that investment. This is where blending what you are doing with the overall project, as opposed to just looking at the climate impact, with a focus on resilience and on protecting from flood, is how we perhaps make sure that we are showing all the benefits that exist. I think that this will come through in the example of Leeds. When you can show that, by better protecting your houses and businesses, you are turning a community back from being blighted by flooding into an area of longer-term investment, you crowd in that private-sector investment in the city.

We have also failed to work out mechanisms where, when Government have invested in a city, they benefit from some of the private sector investments that follow through in terms of development. If the Government are front-loading that investment, that might be another way of seeing whether there is a mechanism for, when a property developer makes money from developing in a city, getting some funding back from that. I am also really interested in seeing how further devolution to the city level could help, particularly where a city or combined authority may have the right kinds of powers to borrow money



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but also to raise levies or look at other ways of bringing in sources of funding.

Q254 **Alison Griffiths:** Have you seen that done elsewhere in the world, or even in the UK?

**Emma Howard Boyd:** I think that it has happened in parts of the States. This is an area where we could benefit from looking at how other parts of the world have looked at raising funding. Often, they do not necessarily have a scheme like we have in this country, such as Flood Re, which can change the dynamics of funding mechanisms.

Q255 **Alison Griffiths:** If there were one priority action that Government should take now to reduce future flood risk and economic loss, what would it be?

**Emma Howard Boyd:** Unfortunately, there is no silver bullet. There needs to be a focus on some of the statutory developments that will send the right signal to the broader economy to invest and encourage greater investment in flood resilience. Looking at how the Government used to work with the insurance industry pre-Flood Re in this compact of investing—"We will invest in these communities if you are providing the funding for the flooding"—demanding that climate resilience is another way that we could see things move significantly in the future.

**Chair:** Ms Howard Boyd, thank you very much indeed for the evidence that you have provided today. If there is anything you feel that you did not get an opportunity to say, please feel free to write to us again and we will make sure it is included. We are very grateful for what you have been able to share with us today. The first panel session is now at an end.

### Examination of witnesses

Witnesses: Emma Brown, Jonathan Moxon and Matthew Shelton.

Q256 **Chair:** Thank you very much to our second panel. I will start by asking you to introduce yourselves and your role within your organisations and we will get straight to some of the questions.

**Matthew Shelton:** My name is Matthew Shelton. I work for Network Rail in the north and east route of the eastern region. My job is route engineer, drainage and lineside. It is a role that manages a small team and delivers a whole host of activities to mitigate risk of water, vegetation and boundary incursions across the north and east route, which encompasses South and West Yorkshire, Cumbria and parts of Lincolnshire. It is about 990 miles of railway.

**Chair:** Whenever I have been stuck behind floods, I have wondered who to blame and now I know.

**Matthew Shelton:** I will give you my number afterwards.



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**Jonathan Moxon:** I am Jonathan Moxon. I work for Leeds City Council. I am the flood and climate resilience manager there. I have had around 20 years in the flood industry, both at the Environment Agency and now at Leeds City Council. My primary role is to manage all functions of a lead local flood authority for the city. Relevant to today's discussion, we own, operate and maintain the Leeds flood alleviation scheme, among other schemes in the city.

**Emma Brown:** Hi. I am Emma Brown. I manage the strategic partnerships team at Yorkshire Water. We have a keen focus on flood resilience, nature-based solutions and collaborative working with local authorities and the Environment Agency.

Q257 **Alison Taylor:** This next part of the questioning is on the role and impact of partnership funding in flood resilience. Mr Moxon, can you outline what the partnership funding model enabled in the Leeds flood alleviation scheme that would not have been possible through central Government funding alone?

**Jonathan Moxon:** The Leeds scheme is a multi-funded model, which is probably very typical of a large infrastructure scheme. It is £200 million pounds of investment to reduce flood risk in the city from the River Aire. That has been completed now, after over a decade's worth of work. Prior to that, we did not have formal flood defences in the city. Initially the scheme was proposed a long time ago and would traditionally have been led by the Environment Agency, with Government funding alone. At the time, that was seen to be not possible due to the lack of a viable business case.

The city council took a leading role to rethink the scheme and that brought about a change to the design and the level of innovation and the ownership of the scheme, which was to be owned and operated as an active scheme by Leeds City Council. With that in mind, the level of private investment in that model is very small. It is less than 1%. The level of standard flood defence grant in aid, through a standard calculation, again is relatively small, at between 10 and 20% depending on how you cut the numbers.

It has received a lot of public funding. That is quite relevant, because there are probably lots of large schemes in the country that are flood schemes, not multi-benefit schemes—I will come on to that later—that are in need of public funding from different pockets. We have had booster funding, growth funding and funding that supports inflationary rises. That is a mixture.

In addition to that, we have had funding from local sources of funding. The council itself has put capital funding forward. The local levy from the regional flood and coastal committee has also committed funding and the West Yorkshire Combined Authority, both with its own growth funding and with European regional development funding. In addition to that, probably more closely linked to the private sector, we have had



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contributions to both phases of the scheme from Yorkshire Water and Network Rail. We have also had a considerable amount of money through community infrastructure levy.

**Q258 Alison Taylor:** Are you able to say what the percentage of central Government funding was?

**Jonathan Moxon:** If I am really honest, that is quite challenging because it depends how you were categorising central Government funding. We have had funding through the European regional development fund and devolved monies through the West Yorkshire Combined Authority. Then we have had different types of grant in aid: DEFRA-administered grant in aid is probably in the region of 15%, but then there have been special pots of funding made available, certainly after significant floods or through further negotiation, that might have been badged as booster funding or growth funding.

**Q259 Alison Taylor:** I appreciate that additional information. Emma, what were the key drivers for your organisation's involvement in the scheme and how was the case made internally for investing in flood resilience?

**Emma Brown:** The Leeds FAS has phase 1 and phase 2. As part of phase 1, Yorkshire Water was able to invest because there were properties that were at risk from both surface water and sewer flooding. We worked with the local authority and invested in the scheme to help protect those particular properties and that is how that business case was made. In terms of phase 2, we did not make a financial contribution, but we have worked with Leeds to support the scheme by taking on the long-term maintenance costs of three of the surface water pumping stations that will be delivered.

For me, one thing that is really important to recognise is that there has been a change through this price review period with the funding that we can leverage through our business plans to Ofwat, where we now have a proportion of spend that is focused on climate resilience. This now allows us to look at the fluvial impacts to the infrastructure that Yorkshire Water has, to understand how we better protect our assets from the impact of climate change.

It is key to note that this is a small proportion of funding, about £30 million out of an £8.4 billion business plan, but, with Leeds and other Departments, we are trying to look at, rather than just investing in localised asset protection, how we invest in schemes such as Leeds FAS in the future, where we know that multiple assets that we operate are impacted and protected by that scheme. This is a really new and significant opportunity for us to take a bigger role in supporting local flood resilience schemes.

**Q260 Alison Taylor:** Mr Shelton, are you able to answer the same question? Would you like me to repeat the question?

**Matthew Shelton:** It was drivers for investment.



**Alison Taylor:** Yes, please.

**Matthew Shelton:** The railway, at a particular location called Kirkstall, suffered flooding. The annual probability of flooding at this particular location was 69%. In any given year, there was a pretty good chance that the railway would flood at some point during the year, particularly in winter, when the adjacent river rose to levels that would mean water would leak into the railway corridor and cause the track to flood. LFAS 2, Leeds flood relief aviation scheme phase 2, offered a reduction in flood risk from 69% to 0.5% in any given year, which is an astonishing outturn. The impact of flooding and the opportunity that LFAS 2 presented to the railway were too good to turn down.

The impact of flooding at this particular location means that perhaps 30,000 people would miss their trains that day. When I say flooding, it is not just a bit of water on the track; we would lose the line for three days to a depth of water of up to 1 metre, which would be unsafe to work in and recover. We would have to wait for it to go down and the railway would only drain when the river had gone down, which could be several days, especially in winter, when river levels run consistently high for long periods of time. Then 30,000 to 33,000 people would be stranded in Leeds or unable to get to Leeds for work, leisure, education, social visits and so on—and, as I am sure the Committee is aware, Network Rail is fined for delaying trains, and that can cost a lot of money.

The business case on avoiding penalty payments to train operators stood up on its own over the design life of the scheme, which has been incredibly well built, well designed and well conceived. The 120-year design life for the hard aspects of the scheme means that the railway will be kept dry for that period of time, which is great news for travellers, freight operators and road users. When the railway lines shut, traffic increases, and often in this particular location the roads would flood as well, so buses could not get through and cars were stranded. It has an incredible economic, social and emotional impact on the people of West Yorkshire.

Q261 **Alison Taylor:** Mr Moxon, looking back, do you feel that the scale of the investment has matched the impact, in terms of avoided flood damage, business continuity and long-term economic resilience for the city and the region?

**Jonathan Moxon:** Building on what Matt has just said, I reflect back on the Boxing day floods in 2015, the biggest flood that Leeds as a city has seen in its history—1 metre higher in some places, such as the place that Matt described, than what was termed the great flood of 1866, which saw loss of life and major disruption. Clearly, Leeds as a city has changed a lot since then. To have that scale of impact was incredibly devastating for people, communities and businesses.

It was on Boxing day, which is really important because the city was a very different place on a day like that than it would be, say, today.



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Schools were not open. People were not commuting to the city centre. Lots of businesses were closed. That is a double-edged sword. There were lots of people. One of the main arterial routes into the city centre sees 20,000 to 30,000 vehicles on it every day, but it was very quiet, thankfully. We did not see loss of life, which was incredible really, given the scale of the devastation. We saw the railway station itself, the busiest station outside London, shut for two days. We saw roads become rivers. Businesses were shut, fortunately, so the people were not at risk, but all their stock, their supply chain and their livelihoods were damaged at that time.

We have seen some very large businesses move away from Leeds because of that incident, and we have seen investors wait. They have waited for a flood scheme or alleviation scheme that allows opportunity. The mental impacts of that, which Emma talked about in the previous session, live for quite a long time. The financial impacts can do, but, if you provide opportunity, there is a real chance that people will stay in or come back to the city. Leeds FAS has provided some real confidence in investment.

If you use the railway line on the way into Leeds that Matt is talking about, it is really evident to see that sites that have been empty for a good 20 to 25 years because of the risk, and certainly since that Boxing day, are all coming forward for development now. That is key to the funding of schemes in future as well: recognising that opportunity, through leveraging funding through development and regeneration, for lots of benefits, including housing growth as well as economic growth, and how we use that to forward think and plan, so that we bring forward the investment in the infrastructure that builds confidence, so that the infrastructure and investment that we need in future can come forward.

**Q262 Alison Taylor:** The next section is about partnership funding, how it works in practice, where it adds value and what the challenges have been in the delivery of that. Mr Moxon, how straightforward is it for local authorities to align priorities, timelines and funding rules across different partners in large flood schemes?

**Jonathan Moxon:** It is very challenging—I say that on behalf of the team that has delivered the scheme. I do not think that that is that different from many other complex large projects, certainly infrastructure projects. Flood projects are often seen as flood projects and not as infrastructure projects. Therefore, different investment programmes that are on different timelines, with different drivers and different key indicators and criteria, are very difficult to align.

What is more specific to flood schemes is that the metric and calculations that we have been using for the last few years have relied on the principle of partnership funding. The reality is that that is about partners trying to fund a scheme that is still given very narrow focus and benefits realisation, so therefore we are not looking at a broad alignment of



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different benefits and drivers; we are looking at people investing in a single and quite focused infrastructure scheme.

The example of Leeds FAS shows that there are multiple benefits to be achieved through enabling a better, more climate-resilient city. To do that, you need to be able to provide lots of those multiple and wider benefits through one infrastructure investment. A flood scheme does not always do that. It can provide multiple benefits, but the calculation around flood funding does not always reward those wider, multiple benefits. It is very focused on residential properties. There are commercial benefits there to some extent, but not in its true broadest sense, around housing, schools, growth and health and wellbeing.

That therefore means that, for lots of partners, all the private sector and parts of the public sector that could contribute and align their funding models, including the organisations sat next to me, that can be challenging. The scale of investment can be challenging. They probably have access to much bigger pots of funding with different metrics, but they are not able to align them with flood funding currently.

**Q263 Alison Taylor:** Mr Shelton, Network Rail supported phase 2 of the Leeds scheme. From your perspective, what were the key factors that helped justify that contribution? Also, was flood risk primarily seen as an operational issue or part of a broader resilience objective?

**Matthew Shelton:** Historically, flood risk on the railway has always been seen as a purely operational matter. The attitude of senior leadership, in my experience, which I hate to admit is over 30 years, is, "Make that problem go away as quickly as you can". I took that brief in the case of Leeds FAS. This was an opportunity to make the problem at Kirkstall go away.

I got a lot of resistance to dedicating what was, ultimately, a considerable sum for Network Rail to a third-party project, effectively outside of Network Rail. Lots of people said to me, "Network Rail money should be spent on Network Rail, within the confines of the railway corridor". People took some persuading to allow me to reach out, face outwards and work in partnership with a local authority, a statutory undertaker, a Government body and various other partners to make something huge and significant happen. There was initial resistance, but I kept selling the benefits: "It is 69% now. It could be 0.5% in the future. Have a look ahead". It was nothing insurmountable.

Delivery of the scheme caused a lot of problems within the railway, because the railway is a very difficult environment to work in. The nature of the Leeds FAS project necessitated a lot of work in close proximity to electrified railway of 25,000 volts. You cannot work within 3 metres of it, so there are lots of constraints, very difficult work sites and lots of difficult delivery. Again, it was not insurmountable. There always will be barriers but, with passion, determination, enthusiasm and an eye on that



incredible number and reduction in flood risk to keep people moving, great things can be achieved.

Q264 **Alison Taylor:** That is amazing. Emma, if I can ask you about Yorkshire Water's contribution, you contributed financially to phase 1. What made it a priority for the company to support it, and how do you assess that kind of investment in terms of protecting assets, long-term resilience and customers?

**Emma Brown:** As I said, when we financially contributed to phase 1, this was very much focused around where Yorkshire Water also has an internal sewer flooding driver or an external sewer flooding driver. That is how we were able to leverage that investment. As I said earlier, it is really critical to understand that that environment is starting to change for us from a regulatory point of view. There is also that expectation on us to be a bigger partner in terms of flood risk.

If Jonathan came to us now with the proposal for Leeds FAS 2, we would probably do a very different assessment, much more along the lines of what Matt has articulated, where we would look at our own asset risk. By the nature of the business that Yorkshire Water is, we are regionally anchored and have assets that sit generally on a river corridor. They tend to be at significant flood risk. In the future, I would like to think that we would have the opportunity to better support schemes such as this by doing that assessment of risk to our own asset base and the level of protection a scheme such as Leeds FAS 1 and 2 would be able to provide to us.

To build on some of the points that Jonathan made around that alignment piece, that is probably the most significant challenge that we have. Particularly when we think about surface water management, Yorkshire Water should be a natural partner for all the local authorities that are trying to manage and mitigate surface water outside of Leeds; I am also very proud to be the general manager of Living With Water, our partnership for Hull, which has the second highest flood risk in the UK from a surface water point of view, where we have spent kind of seven years building a partnership to co-create and co-fund schemes.

One of the biggest challenges we face is the alignment of our funding, particularly the funding cycles that we have. We work in five-year cycles from a water industry point of view; the Environment Agency works to a slightly longer timescale, or it has historically, and there is no alignment between those two profiles of investment.

To Emma's earlier point, we know from Environment Agency data that the development of holistic flood risk management takes something like an average of 8.7 years, but the funding cycles tend to be longer. We would really benefit from this idea of looking at longer-term collaborative investment, which takes a much more strategic approach. At the moment, some of the governance and flexibility we have to move investment around to meet some of those urgent and more strategic



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needs can be incredibly challenging. That is part of the reason that the investment in Leeds FAS is, to Jonathan's point, probably quite small, whereas now hopefully we are entering an environment where we take partnership working much more seriously. There is more that needs to be done to help facilitate that partnership working between the different bodies that are responsible for flood risk.

**Q265 Julia Buckley:** Your evidence is really compelling. We have been waiting a long time to hear a success story and I find it fascinating. I am going to sneak in an extra question, if I may, to Matthew Shelton about the pride you have in the scheme that you have turned around. You talked about how the business case votes for itself and you have gone from 69% to 0.5% risk. How many years will it take to get the money back? You talked about how previously you had to pay fines for the delays and that you have had to lay out a lot of money. Do you talk about that in terms of ROI over several years?

**Matthew Shelton:** Yes; I was challenged to do an ROI-style exercise when I was making a bid for the money initially in 2016, and I could not really do it. It is very difficult to quantify, based on the fact that you do not know how many trains will be running that day. As Jonathan mentioned earlier, the big 2015 event, Storm Eva, fell on a Boxing day. That was a light-traffic day. Lots of people would have come in for shopping, but people had the next day and the day after off. Quantifying the impact on the balance sheet has always been difficult, but it is £500,000 a year avoided. In terms of Network Rail's contribution, once the dust has settled, all the asset protection costs and all the little things that went a bit wrong, like collapsing walls, we will pay it off in seven years.

**Q266 Julia Buckley:** That is incredible. That is a really powerful statement. You are talking about how schemes take eight years to get together. In seven years, that will have paid for itself and you have gone from 69% risk to 0.5%.

**Matthew Shelton:** Yes. It is incredible.

**Q267 Julia Buckley:** We need to be able to use your example as a case study. I would like your permission for us to do that, because we need to be able to demonstrate to other parts of the country that this is doable and pays for itself. We need to get past that silo thinking.

This Committee did a trip to the Netherlands, where we heard how they always collaborate. They have funding from three different levels of government to pay for exactly this. The central Government give them the minimum amount and then local and regional partners can choose whether they would like to add some money to a minimal scheme, so it can do more things while it is there. There are lots of different ways to do this, but you are really leading the way. It would be excellent for us to take your case study forward.



**Matthew Shelton:** Absolutely, yes. In fact, Network Rail could not have delivered the scheme of this magnitude, with the numbers involved, on its own. We could not. We could have tinkered a bit and done little bits and stuff, but we could not have done anything of that quality.

Q268 **Julia Buckley:** Moving beyond our boundaries is the only way we are going to do this.

**Matthew Shelton:** Facing outwards is the only way.

Q269 **Julia Buckley:** That is the thing that you have done differently. Now, on to the question I was supposed to ask, before the Chair notices: Jonathan Moxon, you have previously indicated that securing direct funding from private businesses is particularly difficult. Could you tell us what you think the main barriers are? Is it uncertainty, lack of incentives or something else?

**Jonathan Moxon:** I will speak from experience of the Leeds scheme, previous flood schemes and the work I have done more recently on the Aire Resilience Company, which is aligned with Leeds FAS. It is one thing we are trying as a solution to bring in private funding. Aligning the timing of different people's interests and benefits in a scheme is very difficult. As Emma has just highlighted, even larger organisations have different funding cycles. When we are talking about private businesses, we often ask, "How do we get funding from the private sector?" That is a really diverse thing to give one name to.

Businesses are all of different sizes. They might be based in different places. They have different operating models. They often have an interest in one place, but financially they may be vested in different places. Therefore, when we talk about investment in flood resilience or climate resilience measures that are quite place-based, sometimes different businesses will have a different relationship with that place. All those things are factors. It means that we will not have one transaction and a one-size-fits-all relationship with the private sector. That is probably my biggest learning so far. It is quite challenging, because we have to have a range of offers and understand the private sector. I am saying that deliberately, as a public sector worker.

One thing within that is that the skills required and the capacity within the public sector to bring infrastructure projects forward by working with a sector that we might not know as well as we do the public sector require some development. We need new skills. We maybe do not need public sector engineers doing the negotiation and deals with the private sector. We need to understand private business.

The mechanism is very important. The current mechanism for contributing to a publicly funded flood scheme is not really designed to do a deal with the private sector. Therefore, creating mechanisms that make that transaction very easy is part of it. It might mean that we have to do



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more transactions at smaller scales but more often and over longer periods of time, or in a different way.

One challenge is the perception and understanding why the public purse would not fully fund something or why it is funding part of it. We need to be very clear what the case is and not leave that to be vague, because the private sector very often is just dealing with actual. If we can be very clear what the reason is why public funding is possible or not, and to what extent it is possible, that will really unlock a proper negotiation around the extent of private funding. It is about making sure that there is a very clear and attractive choice. Why would that private organisation want to put funding that they have in their business into a scheme, mechanism or organisation that is separate from their own? What is the benefit of doing that? It needs to be transactional.

Public sector capital funding has a place. We need to consider how capital funding for new interventions and infrastructure can be done in this combined, multi-benefit, multi-sector organisational way. Maybe we need to think about how private sector funding could be done that complements that. Could it pay for long-term care and maintenance? Your beneficiary can see the benefits that have been brought forward by that initial investment. Would they then pay to keep it that way, or would they pay to adapt it over time?

We need to consider the use of development money, which Emma touched on in the previous session. We can think quite strategically, and maybe tactically, at a local level about how you bring forward developments when you know that the amount of community infrastructure levy or section 106 contributions can be used quite tactically to bring forward investment, and maybe think about longer-term returns on that money, so that we do not need to see the infrastructure in place before we claim the money. Can we utilise that and do some more intelligent financial borrowing and make that work?

There are challenges with that but, equally, we have done that very well on Leeds FAS. We have reprioritised the way that we have used the community infrastructure levy in Leeds, and we have utilised that to benefit our ability to deliver the scheme. That community infrastructure levy will be repaid; more businesses and developers are developing in floodplains, because we have managed and reduced the risk, and the community infrastructure levy is therefore available for health and education.

We may be touching on the next session, but we need to consider the principles of insurance, although looking at this in a different way. Flood Re is not available for commercial properties, but commercial businesses face lots of costs. Those costs are within their businesses already, whether they are insurance premiums, insurance costs or insurability, or whether they are resilience and recovery costs and supply chain costs that are associated with climate risks.



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We need to offset those costs in a scheme that is supported, clear, manageable and measurable, where they can clearly see the benefits to that. If they can avoid costs in one place, can we use them proactively in a more strategic way that protects many businesses, rather than every single business facing those costs alone?

**Q270 Julia Buckley:** I would go further on that—that is exactly the question that I was going to ask you. We have this gap now on flood insurance for businesses. The work that you have done and that you are proposing, and that we are trying to encourage, is, effectively, squaring off their risk. Where the public invest in successful flood management, those businesses have a direct benefit. Where we do not do it, they have a direct financial loss and are not able to insure themselves commercially against it.

The businesses that I meet in my constituency say, "I do my own insurance now". I say, "Great. Let me just get my pen out. Who do you go with?" They say, "No, you don't understand. Every month, I set aside £2,000 because, when I am flooded, it will be cheaper for me to pay to have everything redone than the £40,000 that I have been quoted for one year's insurance".

Is there not a scheme whereby those businesses can pay into a scheme and, for their contribution, get a share in it? They are buying a kind of insurance for the future, are they not? They are escalating the activity that is the only thing that is going to protect them. There has to be something in that space that replaces insurance to keep your building as it was, but uses the money that you are prepared to set aside to make sure that it stays like that into the future. The things that you are doing are in the right space.

You alluded earlier to making a business case for the short-term contribution over the long-term costs. How did you persuade businesses through the Aire project to get involved and bring their money to the table?

**Jonathan Moxon:** Having worked on a project called the Aire Resilience Company for the last two years, we are now at a point where that will formally be created within the next week—it is very live—the principle being that what we are doing is complementing the engineering work in the city centre with nature-based interventions in the upper catchment.

The company provides that transactional mechanism between lots of different businesses that feel the benefits of reduced flood risk, but also see the wider social and environmental benefits of managing the land in a different way. We are connecting those at downstream risk and who benefit from risk reduction with those people who have the ability to impact that risk by managing land in a different way.

The key has been that we have an evidenceable, measurable benefit, and we have kept it very simple. We have said, "These interventions equal this amount of risk reduction". We have modelled that Leeds would face



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an 8% bigger flood flow in a Boxing day-type flood by 2069. We have tried to engineer 3% of that into the work that we have done in the city centre. We need to reduce flood flows in a large flood by 5%. What we have said is, "By doing this amount of work in the upper catchment—these are the specific measures, and these are the farms that we would work with—we can achieve that by this location in the city centre".

We tried to make the transaction very simple but, going back to my earlier point, all the businesses have a different reason. The contract that they sign with the Aire Resilience Company is exactly the same, but their reason for signing it is really different. What we have found is that we first have to go and listen to why that business wants to engage in a climate resilience project. We have to understand their business model. Then we have to give them a range of reasons for why they might invest in it, but the model that they are investing in and would pay into on a five-year contract cycle is the same.

The reason why they do it might be different, but the mechanism is simple and straightforward. One of the key things to that is that it has taken time to build some trust. We can show them what we would do. It is very transparent. The board will have an independent set of directors. I am very happy to say that Yorkshire Water is investing heavily in the Aire Resilience Company and really recognises the benefits of a wider resilience scheme. We have discussions going on with Network Rail. There are a range of businesses.

Coming back to your previous point about insurance costs, there is always a place for insurance. It is about thinking about complementary schemes that provide good advice to businesses about avoiding some of those costs. That then levers in that trust and a conversation about, "Could we repurpose some of their money that they are losing at the moment? Can that be paid into something that benefits them in a different way?" It could be physical measures such as property flood resilience, but it might be about advice.

I went to see some of the businesses that were flooded in the Boxing day floods in the days afterwards. One company's insurance excess for flood had gone from £5,000 a year to £250,000 a year. That is because they have suffered that extent of loss. Some of those losses were probably around just the way that they operate their business—where they keep their stock, or where their back-up generator and their systems are. There is not a clear organisation in this country that has a role that is there to support businesses with that type of advice.

**Q271 Julia Buckley:** Is there a need for a clear organisation with that role? This would be a good moment to make any recommendations.

**Jonathan Moxon:** The short answer is yes.

**Q272 Alison Griffiths:** Moving on to long-term maintenance and funding gaps; this is slightly referencing Mr Moxon's earlier answer, but it is a question



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for all of you. How well is long-term maintenance of flood defences being planned and funded? Are current arrangements sufficient to ensure that resilience is sustained over time?

**Emma Brown:** I will give Jonathan a break. From a water industry point of view, we are set up to deliver assets and look after the long-term maintenance. As mentioned, that is a strength that we have used to support Leeds FAS2 where we were not able to contribute financially. As we move to a world where we want to integrate solutions, as we have talked about, the experience that I have is that, where we have delivered surface water management assets where you have elements of Yorkshire Water benefit and local authority benefit, we have been able to create a maintenance model where we have opted to build on council land through lots of sustainable urban drainage.

That allows us to say, "These green spaces were already being maintained by the council anyway". Therefore, we have done as much as possible to try to make them low maintenance. That is within the plans, and Yorkshire Water to take on the below-ground assets, so we are, effectively, playing to our strengths.

Within that project in particular, there are a couple of the things that we have tried to do to really enhance how we are able to look after flood resilience infrastructure into the future. We had a NEIRF, or natural environment investment readiness fund, project looking particularly at how you get private investment into flood resilience. What we have done is look at the kinds of sustainable drainage that we were hoping to build and at how to maximise that for biodiversity net gain, to allow that credits-based system to look at how to get private investment into the long-term maintenance of these assets.

What we found is that, if we had just reinstated with grass, we would have had little to no biodiversity net gain. All of them have generally been done under permissive powers of development, so they have not had to go through the planning infrastructure. We have been able to generate something like 30 biodiversity net gain credits across the city, which will allow us to help ensure the long-term maintenance of those assets.

I wanted to share another example, which talks to some of the themes that have come out from what Jonathan and Matthew have said. Within flood resilience, when we look at the funding that we have, we do not tend to fund—because it is challenging to quantify—is how we engage massively with our community, whether that be general society or the business community, to look at how we better educate, inform and talk about flood risk and flood resilience.

Through some of the work that we have managed to do through Living With Water, where we have had a huge investment in our engagement programme, we have built community awareness of the assets that we



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are building, and of the fact that we want and need to look after these assets.

As Yorkshire Water, we have a big SuDS asset down in Dronfield. It has taken a lot of work, but we are in a position now where it is a local community interest company. Yorkshire Water provides a minimal amount of funding, but there is so much pride in place and in that asset. We have this really lovely community model, where they look after this flood resilience asset. That is something that would be a huge positive for us to see, where we move towards more nature-based solutions that offer these multi-benefits. There are lots of different models that we can employ to look after them.

**Alison Griffiths:** That sounds like a recommendation for the report as well. Mr Shelton, would you like me to repeat the question?

**Matthew Shelton:** Yes, please.

Q273 **Alison Griffiths:** How well is the long-term maintenance of flood defences being planned and funded? Are current arrangements sufficient to ensure that resilience is sustained over time?

**Matthew Shelton:** The majority of the assets associated with Leeds FAS are not owned by the railway, so we rely upon others. The pumping station that serves the Kirkstall site will become a Yorkshire Water asset—and you will maintain that, I hope, Emma. If not, we will find a way forward. There are lots of hard engineering assets that are on the boundary, so we will reach a solution about who inspects and maintains those. They are built to the highest modern standards and will last for a long time.

There are some Network Rail assets that are within the railway corridor, and we will maintain those, as we do everything else, through an annual visual inspection, fully funded, with a six-yearly detailed and a 25-year structural assessment. All the assets associated with the schemes will be brought into our normal inspection and maintenance regime. I do not foresee any problems with that. There are no particularly complex assets.

The main benefits of Leeds FAS are in the huge detention area, which is Leeds City Council's to manage, and the hard structures there. There is some rock armour against the toe of the railway embankment, which will become part of the railway infrastructure, and that will be examined every two years as part of the earthworks examination. It is possible to integrate seamlessly any new assets with existing maintenance and inspection regimes.

**Jonathan Moxon:** We are quite lucky in Leeds that we have partners who have recognised that they are better placed than we are to manage some of those assets. Because we have delivered what would be termed a main river flood risk scheme, we have done that under delegated powers from the Environment Agency. There is a big discrepancy between the funding that local authorities get when they deliver main



river flood schemes and what the Environment Agency gets for operation and maintenance. The whole cost of operating and maintaining the Leeds FAS is borne by the council.

Therefore, what we have had to do is recognise that the benefit to the city is at such a scale that we have had to take that decision to deliver a scheme that benefits the city, but puts the onus on us to operate and maintain a very active scheme. If we do not operate the active defences on the scheme, it does not provide the protection that the city needs. It has moving parts and, therefore, we have had to build up our resource to be able to implement those actions, night or day. We have had to learn lots of new skills, and we are working in lots of areas that are new to us, such as pumping stations, railways, underwater inspection, and mechanical and electrical elements.

There is a real challenge in bringing forward the planned flood infrastructure that is on the current programme around the country. A large proportion of that is delivered by other local authorities, and they will face a real challenge in how they prioritise funding for maintenance and operation going forward. There is an opportunity for that to be looked at.

Q274 **Alison Griffiths:** That leads me neatly on to my next question. Should local partners, either public or private, be expected to co-fund the maintenance of local infrastructure? If so, is there a case for clearer national guidance or more consistent mechanisms for doing so?

**Jonathan Moxon:** Linked to my last answer, I would advocate that they should. It depends on who is leading that scheme. Maybe there is an opportunity to look a little further at making sure that infrastructure schemes are increasingly multi-issue and multi-benefit, that they are place-based, and that we see infrastructure projects come forward that build climate resilience in, as Emma said in the previous session. We need to recognise that that has multiple benefits in a particular location.

Therefore, infrastructure such as highway assets or private assets that are part of a system that reduces flood risk or builds climate resilience needs to be seen as a system in a place. Therefore, we need to come away from funding for a single purpose for operation and maintenance. It may be that flood assets should not be flood assets, but infrastructure in a place that has multiple activities. Therefore, the funding model may need to be jointly owned—that is a challenge, but it is important, because it should be place-based.

**Emma Brown:** I very much agree with Jonathan. Getting private investment into flood maintenance is significantly challenging. Matthew talked about that idea of having to have that passion and really driving that private sector investment into flood maintenance. It is only when we stop talking about flood risk in isolation that we start to get some of that buy-in and the opportunity to have, as Jonathan has articulated, multi-



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beneficial assets, where people really understand the value of their long-term contribution.

We work very closely, for example, with Sheffield City Council, which has implemented a huge programme of Grey to Green, or sustainable drainage in the city. The main driver behind that is regeneration. You naturally have an asset that provides flood resilience and will be cared for and looked after, but the main driver behind it is to improve place, so I would completely agree with Jonathan.

**Matthew Shelton:** In terms of the site that I keep talking about, Kirkstall, in west Leeds, Network Rail has benefited considerably by having a bridge replaced. The bridge is essential to allow access to a huge area of flood storage that provides biodiversity net gain on Kirkstall Meadows, which is now accessible, because you have renewed the bridge as part of Leeds FAS.

Before, it was dilapidated, and the weight limit was 1 tonne, so it was impractical and useless. The bridge has been renewed, and this area of flood storage is accessible for maintenance, so there are benefits to Network Rail, because we do not have to manage a dilapidated bridge, as well as to the FAS and the community going forward.

It is about just thinking creatively about a place-based solution. Leeds FAS is a complex system. One of the great things about it and the way it has been managed, with vision and passion, is that it looks at the whole River Aire catchment as an entity with different components. Leeds FAS has brought everything together to reduce flood risk to hitherto unseen levels, which is really powerful.

**Alison Griffiths:** It is really inspiring hearing your evidence, and I really appreciate the time that you have given to us today. Thank you.

**Chair:** Thank you very much. Mr Shelton, Mr Moxon and Ms Brown, thank you very much for your attendance at the Committee today and for the evidence that we have heard. We very much appreciate it. We will bring this panel to a close and just change over for the next panel. Thank you very much.

### Examination of witnesses

Witnesses: Martin Lennon, Megan Dunford and Mark Shepherd.

Q275 **Chair:** Welcome to the third panel of today's inquiry into flood resilience. The third panel is looking at the issues of insurance. We will start by inviting you to introduce yourselves and your organisations.

**Mark Shepherd:** Hello. It is great to be here. Thank you very much for the invite. My name is Mark Shepherd. I am head of general insurance at the Association of British Insurers, which is the trade association for insurers that operate in the UK. Our interest clearly stems from the role



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that our members play in helping people and their communities recover after flood events, and also in the future sustainability of insurance markets in the UK in the face of growing climate risks.

**Martin Lennon:** I am Martin Lennon, director of policy and Government affairs at Flood Re, which is a public-private partnership that provides reinsurance capacity for UK homes at risk of flooding.

**Megan Dunford:** I am Megan Dunford. I have over 20 years' experience in property claims at Zurich UK. In my current role, as the head of large and complex property claims, I lead a nationwide team managing high-value and complex claims. My role is to provide insight and expertise on flood resilience issues and to seek to reflect on our experience of flood resilience in the property and buildings that we insure. Zurich is a major insurer of businesses and public sector organisations, and we have insight into the current risks facing the UK's building stock.

Q276 **Chair:** Thank you very much. Mr Lennon, it would be helpful, for the sake of people watching our proceedings, if you could expand slightly upon what Flood Re is. Can you just give us a bit more background on what it is, how it works and how those who live in flood-hit areas can avail themselves of flood insurance when, if you like, the traditional market might not consider them a fair insurance risk?

**Martin Lennon:** Yes, absolutely. Flood Re is about 10 years old now. We were created through the Water Act 2014. We came out of an agreement between the Association of British Insurers and the UK Government to create a mechanism to provide flood insurance for homes at risk. Our success that we have achieved is done with the industry. One of the things about Flood Re is that you will never need to know if you are a beneficiary of the scheme.

We are a reinsurance faculty. We have more than 60 primary insurers across the UK home market, which choose what risks they send to us. They pay a premium or an amount to send to us, which is a lot lower than the risk-reflective pricing for those houses. We take those risks, bundle them, if you like, and purchase reinsurance on the international reinsurance markets to cover those risks. The cost of that reinsurance is a lot more than the premium that we get from householders via insurers, so there is a levy on the wider industry that funds that gap.

As I said, the insurers have discretion on what properties they send to us. We do not say what is or is not at high risk. We are very confident that properties eligible for the scheme, which is largely domestic properties pre-2009, can get access. We monitor both the affordability and availability of flood insurance very regularly, and are confident that, if you are an eligible property, you will not be declined insurance for flood risk. We have 100% eligibility in the UK and are really proud of that. Pre Flood Re, if you had had a previous flood payment, it was about 60%.



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Householders who are worried should know that Flood Re is there. Our advice is always to shop around, because there are reasons why individual insurers might not choose to give a quote to an individual property, but, if you use a price comparison website or an aggregator, we are confident that you will get cover.

I should say that affordability is always a bit more complex. The group that has benefited most from Flood Re's existence is those who have had previous flood claims. In 2016, when we were set up, the average quoted price for a property with a previous flood claim was about £4,500. At that time, that was about 20 times the market average. At the moment, if you have a previous flood claim, your average quote will be about £1,100, which is not cheap, but, because insurance generally has become more expensive in that time, it is only twice the average.

At the moment, those at flood risk are generally paying about 40% more than those with no flood risk. Pre Flood Re's creation, it was nearly 90% more. Affordability is always relative, but we are confident that, relative to the rest of the market, that has come down a lot.

**Q277 Chair:** I will stop you there for a minute, because you may be getting on to some of the areas that we are going to be asking you and the rest of the panel about, but that was a very helpful introduction to the scheme. It is fair to say that everyone, through their insurance premiums, is paying a cost towards subsidising the flood insurance of those who are in flood-hit areas. In terms of the time that the scheme has been running, what is your assessment of how successful it has been?

**Martin Lennon:** Against our two criteria of affordability and availability, which are our primary statutory responsibility, I would say that we have been successful. As I said, we are very confident in terms of our availability. Affordability is a bit more relative. There are some things that we cannot control. We have managed affordability and availability. In terms of accessibility, there are people who struggle to access insurance generally for financial reasons. They are financially vulnerable. Those without digital access might struggle to access it generally. Because we do not do direct sales, we are no part of that.

The success of the scheme relies on a couple of things, although obviously we would like to claim it is all us. One is that we have a large, functioning and quite competitive market that holds the vast majority of the risk. There are lots of equivalent schemes around the world with Flood Re, and we are unusual in the fact that we hold a minority of the flood risk in the UK market. Most of that stays in the commercial market.

Also, we have very tough, for want of a better word, consumer protection legislation around insurance in the UK. The regulator would take a very dim view of insurance being sold to a Flood Re-eligible property not on the same terms. In terms of things such as high excesses or excessive cost, there is regulatory protection for those who are outside of the Flood Re-scheme but sold on that basis. It is incredibly rare in the UK to have



flood cover excluded from your general insurance product, but, around the world, it is really standard.

The best evidence that we have at the moment is that about 80% of households have home insurance. In international terms, for non-compulsory cover, that is really high. Even in America, where they have an equivalent scheme, or somewhere such as Germany, the coverage would be much less than 20%. We have really high penetration, and that is a success. It is a crucial part of the flood resilience framework. Our average cost last year was over £75,000, which is not an amount of money that most households would have. When we think about flood resilience, your insurance policy is absolutely as important as the physical defences.

**Q278 Chair:** Yes, absolutely. Mr Shepherd, we have heard concerns that there is not yet a clear plan for transition to a fully flood risk-reflective market at the end of this scheme in 2039. What is the industry doing to prepare? How can that be managed without creating a cliff edge?

**Mark Shepherd:** Flood Re has a statutory requirement to cease to exist in 2039. The intention in setting it up was that, over that period of time, we would be in a much better place by 2039, so that a risk-reflective market would be affordable for people trying to obtain flood insurance. We are not on that direction, so a step change is needed.

A step change is needed in terms of investment in flood defences, and investment in the protection of those communities to reduce and manage their risk. A step change is also needed in order to cope with things that we have seen as more recent phenomena. The cost of repairs has gone up significantly due to inflation and other factors in the last few years, which means that insurance in general has got more expensive, because the cost of claims has gone up. Repairing a flood-hit home is now significantly more expensive, as Martin was saying, than it was five or 10 years ago.

Those are all challenges that we are going to have to grapple with if we are looking to move to a risk-reflective market in 2039. I expect that there may well be questions about, "Should we move to a risk-reflective market in 2039, or should there be a scheme that continues beyond that?" My plea would be that our ambition needs to be that we should be moving to a market that is risk-reflective and affordable by 2039. For that to happen, we need, collectively, as a society, to be able to manage those costs better, because it is the costs that are translating into those premiums.

**Q279 Chair:** What you are saying is that at this moment in time, here in 2025, we are not on a pathway to being able to have a risk-reflective market by 2039, if things carry on in the way that they have done since the scheme was set up.



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**Mark Shepherd:** One of the big differences that Flood Re has made is on accessibility and affordability. Prior to 2016, you will all know—and I knew very well—that our post bags were filled with correspondence from people who were having problems accessing insurance for their home, high excesses, or unaffordable premiums.

Our assessment is that, as an industry, we are in a worse position now in 2025 than we were pre the existence of Flood Re in terms of risk. That is because of climate change increasing that risk. It is also, though, because of things such as inappropriate development in flood risk areas. Our concern is that we are not keeping pace—in fact, we are losing ground on the growing risk, and we are making that problem worse by allowing development in areas of high flood risk.

Q280 **Chair:** Accepting that, we all hope that Government turn things around in the next 14 years and we get to a position where the risk has fallen to the extent that we can move to that. Sat here at this moment in time, on the current trajectory, would your ask be that Government look to have a renewal of some kind of Flood Re scheme from 2039, unless they have been able to make up that ground in the next 14 years?

**Mark Shepherd:** From my perspective, I do not want to let Government off the hook yet, and to allow them to be able to not invest in that risk reduction by saying that there will be another scheme that will continue. At the moment, if we continue on the same path, there probably is no other choice. The point that you made at the start is that everybody else is paying for that through a bit more on their home insurance premiums. That is very much a societal decision, a policy decision and a Government decision. We should be striving to do better, so that we do not have to be cross-subsidising those who are at risk.

Q281 **Chair:** Can you give any indication as to roughly how much extra my insurance on my non-flood-hit home is likely to be as a result of that?

**Mark Shepherd:** It will vary according to how much you pay for your property insurance. At the start of Flood Re, it was estimated that about 98% of people would be paying £10 more on their home insurance policy to subsidise the 2% who were probably going to be ceded. That was all done on hypotheticals. I am not aware of any studies that have been done since then to show what the cross-subsidy is.

**Martin Lennon:** We think that it is about £8.

**Mark Shepherd:** That is a wide section of society who are not benefiting from the scheme subsidising far fewer—I think 500,000 homes have benefited from Flood Re over the course of its existence to date, and we have 25 million homes in England, so there is a cross-subsidy element there of a large portion subsidising those who are benefiting. The challenge, though, is that, if the proportion of those who need the benefits of the Flood Re scheme gets bigger, those who are not at flood risk have to pay more for that.



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Q282 **Chair:** Ms Dunford, how can Government ensure that flood insurance remains affordable post 2039? Do you support the idea of a Flood Re 2?

**Megan Dunford:** The Government need to invest in and improve flood defences, both in new defences and in maintaining the existing ones. It is vital that sustainable drainage systems are installed in all new developments to address the rise of surface water flooding. There needs to be more support for natural barriers such as wetlands. All of this will help reduce the impact of flood to properties.

There must also be enhanced flood risk management to encourage property-level resilience, such as flood-proofing buildings and using resilient building materials. Flood Re considerations should assess the effectiveness of the current Flood Re scheme and identify areas of improvement. Considerations should include extending the scheme or introducing a successor that incorporates lessons learned and adapts to future challenges, such as increased flood frequency.

Q283 **Chris Hinchliff:** I have one question for the whole panel. Experts have been suggesting that, with the looming expiry of Flood Re in 2039, we could be in a position, on the current trajectory that we have just been discussing, where without intervention we see a significant number of properties becoming uninsurable and therefore unsellable. This could create a really significant risk of mortgage defaults, potentially undermining the UK housing market. Does anyone on the panel have a view as to whether that is a genuine risk that we are heading towards?

**Martin Lennon:** If we look at the international example, the gap between what is at risk and what you can get insured is growing around the world, for the reasons that Mark outlined, which are largely climate change and inflation, but also better modelling. Insurance is about spreading risk. As we get better at modelling it, we know which properties are at risk, and it is much harder to insure those individually. We see those big insurance gaps and the associated lending gaps opening up for both households and businesses around the world, which is why more and more countries need a scheme such as Flood Re.

To pick up on what was said about Flood Re 2.0 or anything else, that will ultimately be a question for the insurance industry and Government, and probably also for lenders, because they are big beneficiaries of the Flood Re scheme at the moment. The Flood Re scheme was always designed to exist over a 25-year period. It is a balance. It takes risk from the UK market and places it on the international markets. We can take only as much risk from the UK market as the international markets are prepared to sell us as reinsurance capacity.

We are currently at £3.2 billion. We were at £2.1 billion last year, and £3.2 billion is the biggest risk transfer programme in Europe. It is pretty much at the outer limits of what we can purchase at the moment. Just because of the cost of climate change, there were 60 events last year



that cost more than \$1 billion, and so the desire of those reinsurance markets to offer to natcat schemes such as Flood Re is limited.

It is not just a question of what comes in 2039. If we do not manage flood resilience in the meantime to 2039, the scheme itself will not be sustainable; if the UK domestic market loses confidence, it will try to put more into the scheme than we can place on the international markets. It is really important that we do all the things that Mark talked about just to maintain that balance that we currently have between domestic and international markets through to 2039.

**Mark Shepherd:** All the risks that you identify are real ones. I would echo the point that Martin made that it is not necessarily just in 2039. These are real risks that are current and present. Flood Re has a three-year risk transfer process that needs to go through every three years. If, in the next three years, the reinsurance markets on a global scale are not able to provide the cover that they need, that puts at risk the sustainability of the scheme.

Q284 **Chris Hinchliff:** How likely is that? How close are we to that?

**Mark Shepherd:** Martin said that, from his view, we are reaching the outer limits of what is achievable there. That is a risk that is currently facing us as a society in terms of whether the scheme, as currently constructed, can continue.

There are different ways that you could construct a scheme, and different mechanisms that Martin and I would advocate to Government through which you could improve the efficiency and value for money of that scheme. Some of those are down to Government rules for everything from procurement through to some limitations on how Flood Re has to transfer its assets and so on, and its not being able to make a loss over a certain amount, which do not make it as attractive a proposition as it could be for some of those reinsurance markets. There are changes that you could make.

Another thing that might need to be considered is whether this should be funded solely by the insurance industry, or whether there is a need, because the risk is getting so significant, for funding either from other sectors such as lenders or ultimately from the Government. That is often how most other schemes to support homes or businesses at flood risk work around the world, with Government backing.

**Martin Lennon:** The scheme is very robust, in that there is no immediate risk to it. It is almost impossible for the scheme to fall over. You could have a one-in-200-year flood event, and we are very confident that the scheme would be solvent and able to reimburse our reinsurance not only through that event, but after it. As Mark said, if you cannot get enough cover, it is more of a long-term issue and would mean that more risk would have to go back to the market, which would probably start to create affordability and availability gaps.



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There is no risk to your householders who are benefiting from it at the moment. The scheme is very robust, and we have a very good credit rating and are regulated by the PRA, but there is this long-term sustainability gap if we do not keep overall flood resilience in check.

**Q285 Julia Buckley:** I am very interested in your description that those who are floodable benefit through Flood Re, and those who are not pay a premium. Since DEFRA has combined its fantastic maps, which demonstrate both pluvial and fluvial flooding in one combined map, that has radically increased the number of homes that are now described as floodable, because it is a more realistic combination of both river and groundwater flooding. Does that change anything in terms of who your net contributors and your beneficiaries are?

**Martin Lennon:** That is a really good question, and one that is really quite hard to answer succinctly. The scheme has not operated as expected. If you look at our original legislation, there was this idea that Flood Re would create this register of hard-to-insure properties, and we would know which properties would be left without insurance in 2039. That has not been our experience. Flood Re has about 350,000 properties on the books at the minute, which is itself a record. Over the course of our existence, we have had about 650,000, and stuff comes in and out of the scheme quite frequently and quite dynamically. Going back to the previous question, that makes it very hard to forecast which homes would struggle to access insurance, and at what cost, minus the scheme.

Insurers use it for a number of reasons. They might look at individual flood risk and say, "This property is too high. It is outside of my risk tolerances". They may also think, "In this area, I am overexposed, because I already have 20 homes in that area, so I might put the next five in". When you think of the net beneficiaries of the scheme, it is not just the properties in here at the moment; 30% of the properties that came to us last year had never been in with us before, including in areas that had not flooded recently.

When you think of those who are beneficiaries of the scheme, you would be looking at a million properties at least, and possibly more, who have that clarity. That is why, when you think about the financial beneficiaries of the scheme, lenders are significant beneficiaries, because what we have given more than anything is clarity and stability over quite a wide proportion of their book.

**Julia Buckley:** Yes, absolutely. It is a positive that we are being clearer and more honest about the level of risk, which then enables those property owners to be able to take more measures and be more realistic.

**Martin Lennon:** Yes, exactly.

**Q286 Julia Buckley:** It is just about balancing that off with them being stuck with a much higher bill or the problem of how we pay for it. I will move on to the question that I was supposed to ask you, which is for Megan.



We have heard from various witnesses that landlords, lots of businesses and some long-term residents struggle to access affordable cover. Who in the industry is doing anything to improve affordable insurance for businesses and landlords and, in some cases, tenants?

**Megan Dunford:** At Zurich, we concentrate on working with our customers on assessing the risk, and working with them to implement resilient measures. We work with a climate team. We work with risk services. We go and have a look at the risks to the customer and talk them through them. We give them options as to how they can improve their resilience themselves, and we work alongside them. Our focus is on insurability and continuing insurance with those customers, and trying to work with them and guide them.

Q287 **Julia Buckley:** Could I ask the same of you, Martin? How big is this problem in practice—these businesses and various types of residents who fall outside of the current Flood Re, but are not insurable?

**Martin Lennon:** It is a question that we are asked quite a lot. We very much monitor our eligible properties, and I have to say that anything outside is a bit anecdotal.

Q288 **Julia Buckley:** Do you care that businesses cannot get cover? Your whole life's work is to help people who are flooded to get insurance, and yet businesses that are employing people do not qualify.

**Martin Lennon:** We are a public body with a statutory remit, which is very much only householders. Schemes such as ours are for householders. There is a global phenomenon here of insurance being harder and harder to get for natural catastrophes. There is a real challenge about how we link resilience measures, whether they are done at the business or the community level, to insurance, because insurance relies on modelled risk. The regulators are expecting a very clear model of risk, and they cannot offer cover on the basis of risk reduction unless they are able to model it.

If we are looking at how we extend insurability, we need to look much more closely at the link between what we are doing in the resilience space and how that translates into insurance.

Q289 **Julia Buckley:** Do you mean build back better—the idea that they build back to a standard that, in itself, is more resilient?

**Martin Lennon:** Yes. Some of that is build back better. Some is other measures that you can take at the household level. For example, you mentioned NaFRA2 earlier, which gives a depth indication. The majority of flooding is very low depth in the UK. We are quite unusual in that. A lot of it will not get as far as the household's front door, so what you might need to do to protect yourself is just close your airbricks and make sure there are no other ingress points.



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There are some very simple measures, but getting the detail of those measures into the insurance system is much more of a challenge. It goes through to community level reduction as well. If there has been a service water alleviation scheme, or water companies have done things such as NFM and SuDS, a load of this is invisible to the insurance industry. Therefore, it is very hard for it to offer insurance on the basis of it.

**Q290 Julia Buckley:** I am going to ask the same question of you, Mr Shepherd, and hope that you are going to give me a much more positive answer, as somebody who cares about businesses that are not able to get insurance against flooding.

**Mark Shepherd:** Yes, absolutely. Core to the growth and future of our economy and our country are those small high street businesses up and down the country that are providing people with jobs and incomes. They are absolutely vital to our future sustainability, and insurance of them is vital to their own sustainability.

I just want to make one point in terms of clarification in reference to Flood Re. Renters, leaseholders and freehold properties can benefit from Flood Re for contents insurance. The benefits there apply if they are at flood risk for contents insurance to be ceded into the scheme, should they need to be.

When it comes to businesses, very deliberate policy decisions were made around the establishment of Flood Re, around its future sustainability, around value for money, and around targeting Flood Re as a solution to where it was felt most impact was needed. Those are some of the reasons why businesses were not thought to be included in the establishment of the Flood Re scheme, but there are many more, which I can get on to in a second.

I just want to touch a bit on the positive. Flood cover in the UK is provided as standard in the vast majority of commercial property insurance cover. The broker's role is really important here when it comes to businesses trying to place their insurance in that market. We operate a scheme with the British Insurance Brokers' Association, which is a flood insurance directory linking businesses at flood risk with brokers that specialise in placing flood risk cover in the market. BIBA also runs a scheme specifically for SMEs with assets up to £1 million to provide commercial property insurance flood cover for them.

There are schemes that exist on a commercial basis, and I accept that they will not be suitable for everyone, will not help every business up and down the country, and are at the moment subject to a risk-reflective market, but there are reasons why we think that a scheme for businesses, potentially on the model of Flood Re, would not be appropriate. If you brought businesses into Flood Re, you would, effectively, be saying that households not at flood risk in Rotherham, Carlisle, Glasgow or wherever should pay more for their insurance



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premium to subsidise the premiums of businesses purely because they are at flood risk.

Q291 **Julia Buckley:** Why? If residents currently subsidise residents, why would you not ask businesses to subsidise businesses? Why would you change that model?

**Mark Shepherd:** That would be creating a new scheme on the basis of a model for Flood Re purely for businesses, and keeping it separate. That is another option that you could look at, but is it appropriate for the café at the top of the hill, which is struggling and not getting much footfall, but not at flood risk, to subsidise the café beside the river, which is in a much more attractive location, getting much more footfall, doing a lot better and is profitable? Should it have its premiums subsidised by the business at the top of the hill purely because it is at flood risk?

Q292 **Julia Buckley:** Presumably, you made that judgment for residents, but you are saying that the same judgment does not apply to businesses.

**Mark Shepherd:** It is a lot more of a complex policy question, yes. Should you have sectors that have much less of a need for physical assets, if you like, subsidising those that have much more of a need for physical assets? Is that appropriate? There are deeper and more complex policy questions at the heart of that decision. Ultimately, that would be a decision for Government, if they wanted to introduce a scheme on that basis. We do not think that it is currently fair for that cross-subsidisation to work when you are talking, essentially, about entities that are designed to make profit.

Q293 **Julia Buckley:** Could I ask you to give me some advice, please, for House Coffee in Longden Coleham, Shrewsbury? It has been flooded twice, and its current quote is for £40,000 if it would like to be insured. What advice can you give me to give them when I go home to Shrewsbury?

**Mark Shepherd:** My advice would be to get in touch with the British Insurance Brokers' Association to get a specialist flood insurance broker, to outline to them exactly what has happened, and to consider with their broker whether there are property flood resilience measures that are in place that might make them a more attractive risk to the market.

Q294 **Julia Buckley:** They have taken resilience measures.

**Mark Shepherd:** These are the steps that you need to go through. The other side of that story is for the insurer. Those two floods are a significant cost to that insurer. From the market's point of view, they are looking at this rationally in terms of, "Is this an attractive risk to take on?" and it may well not be.

**Julia Buckley:** We have just talked about the map that DEFRA has published, which shows how much more of the country is now at risk of flood, not just from rivers such as the River Severn, but from



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groundwater flooding. That map is extensive. What we cannot keep saying is that this is a small group of people who have to live with their problem on their own, when the map over here is telling us that this problem is affecting more and more businesses. The previous panel were excellent in talking about how to work with businesses to protect and enable them. They enabled more growth and new businesses to come into what was a flood plain, because of how they work with them.

I do not think that my coffee shop is going to enjoy your advice. I know that they have already been in touch with specialists, and their quote is £40,000. They have not taken the quote. They are saving their own money to pay their own bill. Otherwise, they have to close. We have to find solutions for businesses that are trying to operate, because more and more are now at risk of flood. We cannot pretend that that is not growing. I really want you to go away and think about it, because the Government will be asking for your advice about this.

Q295 **Chair:** If I could bring you in on this, Ms Dunford, I know that your firm does a lot of business insurance. Is there anything that you want to add on the whole issue of businesses with a history of flooding or being in a flood-hit area being able to access insurance?

**Megan Dunford:** I would go back to what I said previously about insurability and working with businesses. You have mentioned build back better. We work tirelessly with our customers to advocate build back better, but insurers can go only so far. The property owners have the final say. Understandably, all their concentration is on getting back in as quickly as possible. When we give information to them on how they can build back better and implement changes, we cannot enforce it on them. There is absolutely nothing that we can do to make them make those additional changes.

Q296 **Chair:** Will it make a difference to their premiums if they do it?

**Megan Dunford:** That is not something that I can comment on. I can take that question away for my underwriting colleagues. For us, the focus is on continuing to insure them and working with them to make sure that they have adequate protection.

Q297 **Chair:** You might argue that that is a way of working with them, in terms of saying, "These are things that you could do. If you do them, either your premiums go down or your excesses go down". That would be working with them, would it not?

**Megan Dunford:** I will use the example of a loss that occurred at Cooper School. It was in the press and you may be familiar with it. There was a sponge ball that went into an internal gutter. The school contacted us very quickly as a result of the water that infiltrated into their property. Because we were able to react very quickly and work with the school, and with adjusters and disaster restoration, we were able to dry that property really quickly and ensure that the water did not penetrate into the plasterboard and beyond.



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In conducting those repairs with them, we were able to salvage items and also to make suggestions to them such as, "Rather than putting carpet back down, what about putting in a hardwood floor? What about putting tiles down?" Also, the contractors that we used were able to support the school, and left any materials that were left over to the school to use as they wished, beyond that claim. There is a lot that we can do for businesses in supporting them when the worst happens, and that is where we concentrate.

**Q298 Chris Hinchliff:** Ms Dunford, to what extent are insurers linking premiums, claim support or other incentives to property flood resilience measures?

**Megan Dunford:** We advocate the reform of the Government's £5,000 flood resilience grant scheme, which is currently only available after a property has been flooded. We urge you to increase the value of that grant, and also to make it available up front in the most deprived areas.

**Q299 Chris Hinchliff:** Can I jump in very briefly to ask what you think that grant should be increased to?

**Megan Dunford:** It is very difficult to put a finite number on it, because every property is different. When you consider the cost of surveying the property alone, before you even get to a flood door or a flood barrier, it is variable. It needs larger consideration than just a figure. Also, customers should be allowed to pass the authority to their insurers to make that application on their behalf; as the insurers, we can take the stress away from the customers. We can fill in the forms and make the application. While we are on site, we can help the customer, through the available insurance measures as well, to make the most of those repairs and resilience all at once, so they are shortening the period of repairs.

**Q300 Chris Hinchliff:** What barriers would you say are preventing wider adoption of these incentives? What actions or regulatory changes could help embed them more consistently across the market?

**Megan Dunford:** It is a very slow process. It needs to be up front, quicker, and more easily accessible to the customers. They need to understand what is available to them, and how and when they can obtain that information. That is absolutely key, so that customers understand what is there.

**Martin Lennon:** We do quite a lot of work on this. We run a scheme in partnership with our insurers, whereby they can claim an extra £10,000 on top of the cost of their rebuild to put resilience measures in, called build back better. The insurer manages that process for them and does the full retrofit as part of that completion. That is quite a big financial cost and supply chain challenge for insurers to implement, but the big challenge we actually have is that most households do not take that up. We are looking at ways to try to incentivise that better.



We have two practical challenges with it. One is that, because of Flood Re, the premium they would pay is still lower than a risk-reflective pricing, even with the flood measures. If you say that a house is flooded and we expect repeat flooding, your premium should actually be somewhere like £6,000 to £8,000. I have seen quotes where it would be about £20,000. The Flood Re premium on a mid-sized house is £450. Even if you put in those measures, it might take your risk-reflective pricing down from £20,000 to £2,000, but the Flood Re premium is still £400, so you are not going to see a benefit because of Flood Re. We are therefore very conscious that we remove those price signals.

The other challenge of doing it in the domestic market is that everything is done as instant automatic pricing. Everyone buys through a price comparison website, so we do not do the bespoke pricing that Megan is talking about, which you do in business, where someone goes through and looks at your resilience measures, but we are trying to think about how you could go there.

We are developing something called a flood performance certificate, a bit like an EPC, where you can look at what the data points are that you need to understand in order to understand what the resilience measures are, particularly to empower the householder to understand that themselves, so that a lender can look at it and their mortgage lender can look at it.

Again, we were talking earlier about low-depth flooding. There might actually be some simple measures that they can understand and that they can put through. We are developing the technical work of that, but, again, it is a token that can link physical and financial resilience. It could have benefits to linking different spheres, such as physical resilience—of the kind that the EA does—lending and insurance. We need some support from Government to bring that in and get it universally recognised, though Flood Re is doing all the technical work for it.

**Q301 Chris Hinchliff:** Are there any recommendations that this Committee could make to the Government to allow clearer price signals in the market related to those incentives, without undermining the work that Flood Re currently does?

**Martin Lennon:** We obviously do not want to take cover away from people, but Flood Re is looking at and whether we could do discounted pricing and that kind of thing. It is quite hard, because our premium is quite a small amount of the total. We could give a discount, but it does not necessarily mean the householder would see it, so I do not want to give confusing messages. We are looking at that and other measures.

Lenders have a big role here. As I am sure the Committee is aware, at the moment the Prudential Regulation Authority, which is part of the Bank of England, is looking at how it regulates for climate change within financial services. That will require lenders to look at flood risk as part of the lending process. Again, FPCs could be a tool there for householders at



flood risk to make sure they can still get access to mortgages. We have spoken to quite a few lenders that are keen to bring it in. It is about bridging those different systems. When we are looking at bringing in new financial regulation, what are we doing in that physical resilience space to match up to that financial regulation? FPCs are the kind of system that could bridge those two.

**Q302 Chris Hinchliff:** Mr Shepherd, how can we ensure that flood resilience improvements are maintained over time, particularly in rented or multi-occupancy properties?

**Mark Shepherd:** Property flood resilience is still a relatively nascent industry, if you like, and that needs to build over time. We are big supporters of it. It is not the only solution to flood risk. It is part of the solution, and should not be seen as the only solution. What will help, firstly, is that data building up over time. The build back better scheme for households that Martin has talked about has only really been through one major flood to understand how effective some of these measures were and how many people wanted to take them up in response to that flood. That data will build up over time.

There are a few things we would like to see, such as better training of people to deploy these measures in people's homes. We need those skills, standardisation and certification to be built up in that industry as well. Along with that, we need to build better consumer confidence and awareness of these products, so that they are not put off from installing them and they do not have misconceptions about whether they will work or not, or whether they will make their home blacklisted or unattractive. The industry has developed a lot. It is still early days, but it has developed a lot. Some of these measures are a lot more effective and more attractive to homeowners and businesses than they once were. Addressing some of those misconceptions would really help.

The one game changer in this industry would be to embed property flood resilience measures in building regulations for new-build homes. If, as the Environment Agency say, one in four homes in England are going to be at flood risk by 2050, it is an absolute no-brainer to be putting property flood resilience measures in at the building stage, in the ground floors and basements of those properties.

**Q303 Chris Hinchliff:** I have a final question for anyone on the panel who is particularly keen to answer it for me. What role should adaptation finance play in supporting both the uptake and long-term effectiveness of insurance-linked resilience measures?

**Mark Shepherd:** I am definitely a strong believer that communities need financial resources to adjust to the impacts of climate change. That is crucial for both building resilience and addressing their vulnerability to climate impacts. It is also about more than just funding; it includes policies, infrastructure and community-based actions that people can take



to make themselves and their businesses adapt better to a changing climate.

For our industry, the field of adaptation finance is a key priority for collaboration with the Government. Emma alluded to this earlier, but in our view it is vital that UK infrastructure going forward is climate-resilient. More focus is needed in designing financial solutions, including insurance, to support climate adaptation to address some of those growing climate risks, in particular the transition to net zero. That involves us as an industry working with businesses and working with infrastructure products to identify where their exposures to climate risks exist, and looking to address those in the future and minimise those potential liabilities.

**Martin Lennon:** We are quite a long way behind on adaptation payments compared with where we are on mitigation finance. As Mark was saying, we have not looked across the piece there about where the incentives are. Again, as I said, the UK has been fairly well shielded, so we have not had the insurability gaps mentioned in previous examples. They are there, but they are not on the scale they are if you go to the United States, where this question about whether you can get an asset insured is really key.

It is really key for growth, because increasingly, if you want to get an asset financed, they are worried about the long-term insurability of it. That can be £200 million of insurance on life sciences and on data centres. There is a chain there: growth is relying on investment, which relies on finances, which relies on insurance, which relies on the physical resilience. We do not yet have that join-up across the system to create those incentives.

**Chris Hinchliff:** With the Chair's discretion, would you mind writing to the Committee with some further details on how we might join those up ?

Q304 **Martin Rhodes:** Mr Shepherd, there is an issue around public understanding of flood risk and what cover is available. What is the insurance industry doing to improve that level of understanding?

**Mark Shepherd:** Every time there is a flood event, both the industry and individual insurers are very active in response to that event. Part of that response includes both general messages to the public through media, and to the likes of you guys, if you have impacted constituencies, but also clearly in the claims response to people affected, around both what to expect from your insurer in dealing with your flood insurance claim, but also how you can take action so that you become more resilient to that flood risk in the future, and some of those areas we have talked about in terms of property flood resilience.

More generally, as an industry we are very active in terms of sponsoring projects that will create and promote awareness for people's flood risk. Along with Flood Re, that involves projects such as the Floodmobile,



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which is about going round into various communities, talking them through, using live examples, how property flood resilience measures could help them be more resilient to flooding.

There are clearly a number of alerts and advice that insurance and brokers will give when floods and storms are forecast, so that people can take preventive action in advance of that potentially hitting their property. As forecasting has improved and the technology around that has improved, it has created more opportunities both for us and for the Environment Agency, with their flood alerts and other organisations, to put out warning systems that mean people can take effective action that will reduce, potentially, the cost, should their flood hit their property.

**Q305 Martin Rhodes:** In terms of that public understanding, is there an issue that not enough people know what the flood risk is at their home?

**Mark Shepherd:** There is. It is not just an issue for the insurance industry to solve either; there is definitely a role there for developers, architects, planners, conveyancing solicitors when people are purchasing homes, and for lenders when people are looking to access mortgages. It is right across that panoply of organisations that are involved in home construction and home selling. More could be done with the advancement of things such as flood performance certificates, which would really increase people's awareness of the flood risk of those properties.

**Q306 Martin Rhodes:** On that issue of flood performance certificates, I am going to turn to you, Mr Lennon. In terms of flood risk disclosure, at the point of sale, or when people are renting and so on, would they help raise that awareness? Would it make people more aware?

**Martin Lennon:** Yes, if combined with other measures. The flood performance certificate is not meant to just tell you that you are at risk, in a sense; it is meant to tell you what preparedness your building has, so you understand what you can do about it. It is trying to empower householders.

At the moment, what we have is a move towards things such as lenders screening for flood risk. That makes quite an unbalanced system, because it just looks at your risk, not at your resilience. We have done some work in the planning system, for example, where we found that some new developments at surface water had actually quite significant in-built defences. They were just basically built up; they were built up to 600 millimetres, which was quite significantly above the one-in-100 depth, even accounting for climate change, but there was no way for those householders who bought the house, their insurers or their lenders to know what those protections were.

If you have a system such as the PRA are doing, focusing more on the risk, but you do not balance that with the resilience, you just disempower people. People do not want to face up to their flood risk because there is nothing they can do about it. They do not want to draw attention to it.



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You have to be able to give somebody a balance, so, "Look, there is something you can do about it here", so you are not just saying the risk.

We think there is probably quite a large group of people who have protections. I am from Hull. We had devastating flooding in 2007, but really, really low. No one I have ever met has ever been flooded through their front door; it all came in through air bricks and other things. I meet loads of people who have adapted their houses. They have closed their air bricks, they have closed their pipe inlets and so on, but they cannot prove it.

The idea of an FPC is less to draw attention to the flood risk—and there is more we can do to draw attention to the flood risk—and more to actually give people options to help deal with it. It is also for those who have taken options, or are in a house where it is built, to incentivise developers to meet that, and to try to refocus that on to what the resilience measures are.

Mark has already given a great outline of what the industry is doing. One thing we try to do on awareness is promote that Flood Re is there, and trying to promote that reassurance post flood. What we find is that there are not urban myths but a lot of misconceptions about the pre-Flood Re world that come back to people post flood. They can almost be self-fulfilling. People are told, "You will not be able to get insurance post flood", or, "You will face conditions".

One survey found that 18% of people thought that flood insurance was excluded from their cover. Flood insurance is excluded from less than 0.02% of policies in the UK, so 20% of people do not think they have that insurance when actually they have. We do all of the things that Mark said. We are trying to do a bit more, to try to provide that reassurance. One of the key things we try to do is link up with the public bodies and local authorities on the ground in those post-flood communities, to try to provide that assurance before it becomes self-fulfilling.

**Q307 Martin Rhodes:** Just to pick up on the issue of flood performance certificates, you are saying that, essentially, they are just looking at risk, rather than resilience measures, but would not they drive the move towards resilience?

**Martin Lennon:** Flood performance certificates are just looking at the resilience, but they would go alongside, say, NaFRA2, which would give you your risk. What your NaFRA2 should say is, "You have high risk at 30 centimetres and low risk at 50 centimetres", because it will give you both depths and returns. Your flood performance certificate might say, "Your building is very well protected to 30 centimetres, because you have closed your air bricks. You do not have protection above that", so that you can understand what you are doing.



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We are looking to NaFRA for the, "This is what your risk is", and we are trying to say, "This is how you can understand how you can protect yourself from that risk".

**Q308 Martin Rhodes:** Essentially, for the measures to work you need something that talks about the risk, but then something that talks about what measures you can put in place.

**Martin Lennon:** Yes. That is particularly important, because lots of people do not understand that, if they are at surface water, it might be quite low depth. I am not going to lie: to put in sophisticated flood doors is quite an expense. There will be people who need that. That is why we need BBB and we also need Government grant schemes. There are a lot of people who can take very straightforward, much cheaper measures, and we want to empower them.

**Q309 Martin Rhodes:** Ms Dunford, what other tools or policies are needed to ensure that people can understand, assess and act on their flood risk?

**Megan Dunford:** It is really important that the information is accessible, reliable and easy to understand, so that everybody who is impacted by a flood knows what they can do. There ought to be a list of tested and approved products that are readily available and can be fitted by accredited contractors. There needs to be clearer guidance on the importance of the maintenance of those products.

Moving forward, it is about sharing information with customers. When there is an extreme weather risk happening, for example, we will share that information with our customers. We will send out communications to let them know that this extreme weather event is happening. For example, Zurich Municipal customers are able to access a vendor and sign up to them, where they will get direct notification from Previsico, letting them know that there is an event coming. It is about awareness of what is coming and what they can do as a reactive measure.

I would also go further, to my colleague's previous comments about flood performance certificates. It is more than just flood; as the previous panellists mentioned, it is about climate. We need to not only look at flooding; we need to look at fire risk, windstorm, extreme heat, and the use of things such as heat pumps and solar panels, so you could turn the certificate into something more positive, instead of solely concentrating on flooding.

**Q310 Martin Rhodes:** You mentioned having a list of products. Who would you see as being responsible for, essentially, compiling that list and making it available?

**Megan Dunford:** They have to be tried and tested, and there are very limited resources on the testing of those products. The Government do need to lead the way in making it information very accessible for customers on where they can go, what products have been tested and what should be implemented in their homes.



**Martin Lennon:** There are British standards for flood-resilient products. Flood Re and the Environment Agency have jointly funded a project at Hull University to create an independent testing lab for products. The BSI standard is a bit inflexible and it is quite hard for certain products to cover at the moment, so we are also looking at developing a new BSI framework.

Q311 **Martin Rhodes:** Thinking about how the industry is adapting to its models, pricing and long-term strategies—the growing impacts of climate change on flood risk, but also more generally—how is the industry adapting how it works around prices and modelling on flood, as one aspect of more general climate change?

**Mark Shepherd:** This is also a big focus for the insurance industry's prudential regulator, the PRA, to make sure that insurers obviously have enough capital to be able to deal with some of the risks that you have associated. Their supervisory approach to climate risk is being consulted on at the moment. We expect that to continue to clearly have an important focus on flooding.

What are insurers doing? Insurers, particularly those who provide cover for properties in higher flood risk areas, will often purchase very sophisticated granular flood mapping and hydrology expertise from the commercial sector in order to understand that risk as much as possible. That is as much as a tool for underwriting as it is for understanding the insurer's own exposure, and being able to capitalise future funds to be able to meet that exposure.

Also, as you might expect, the scenario analysis has changed over the last number of years, as climate change has brought some of those scenarios into a much more extreme regime. We have seen some of those play out in some of the worst storms and floods that we have seen hit the UK in recent years. We are evolving and constantly developing those scenario analyses, to make sure that they are up to date on how they would impact your book of business. That is really important.

That relies on quantitative modelling, as you say, but also qualitative analysis of how firms would need to react to such scenarios as well. That is more about the operational resilience of a firm being able to meet the demands of customers in those types of scenarios. Clearly, that is really important for both the reputation of that business and for us as an industry, in meeting that commitment to pay out and deal with customers' claims.

**Martin Lennon:** The role here for insurance is to think about how we share that expertise a little bit. Obviously, as Mark said, the business of insurers is understanding risk. They are spending millions and millions understanding that risk, and therefore they are quite a long way ahead of other sectors in doing that. We in the UK are world leaders in this in both our public mapping like NaFRA2 and our private mapping. We have



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companies such as JBA and Fathom that are now going international in that expertise in identifying risk.

As Mark said, insurers need to use that risk primarily for screening their own risk and making sure they are not overly exposed. In some cases they are pricing that risk out, but that expertise is all sitting with the insurance sector. Their exposure tends to be 12 months. We now have this idea where you have insurers generally looking at a 12-month period of their insurance, but a lender looking for 30 years.

Previously, lenders would have taken a view that, if something is currently insurable, it will be insurable in the future, but climate change breaks that link. We need better consistency across financial services in how we think about risk. That will ideally be some frameworks for thinking about that across the public and private sectors. There is a real expertise in insurance generally about that, but very much so in the UK. We need to share that a bit more readily.

**Q312 Martin Rhodes:** In the situation that you are putting out there, lenders could previously look at it and say, "If that is the risk for 12 months, then that is likely the risk it is going to be for the 30-year period". They cannot do that anymore. The point was made about the need for more capital to cover risk.

Taking that all into account, Ms Dunford, what support do you think is needed from Government, either directly or through regulators, to ensure that insurance remains affordable and available in the face of all these new risks that are coming in?

**Megan Dunford:** It has already been touched upon by Mark, but it is absolutely vital that new homes are built to high standards of property protection, and are flood and climate-resilient. The Government should avoid building on flood-prone areas unless there are sufficient design features in place. We want the Government to commit to sustainable changes in the planning system and building regulatory framework, so that it prioritises the delivery of buildings that are resilient to climate risk: flooding, fire risk, windstorm and extreme heat.

Although not specific to flood, as insurers we all too often see fire-damaged buildings, where the spread of fire has gone beyond what it should have done, and therefore the regulations have not been fully followed. Introducing new regulations is one thing, but ensuring that they are implemented is vital for reducing the losses, and ultimately saving costs and lives.

**Q313 Martin Rhodes:** In terms of what you would want the Government to do, it is about regulations around design, planning and building regulations, but it is also about ensuring there is sufficient resource to implement those, to ensure they are being implemented properly.

**Megan Dunford:** Yes, absolutely. I was at a fire-damaged building a week ago and the fire protection worked exactly as it should have done,



which means that those individuals can be back in that property in about six months, rather than 18 months. You can look at another premises where the regulations have not been followed, and individuals are decamped for four years because of it. It is absolutely vital that we look at those regulations being implemented correctly.

**Q314 Martin Rhodes:** So in terms of potential recommendations from this inquiry, one of the things you would like to see is measures that would ensure that there is proper regulation of regulations that are already in place, as well as potentially new ones, but ensuring that there is resource to ensure that there is proper oversight of people sticking to the regulations.

**Megan Dunford:** Yes, absolutely. You will often see in a building that fire protection will go all through the floors, but they will miss the roof. If the fire gets to the roof, the entire building is destroyed. I know I am talking about fire rather than flood, but it is a prime example of making sure it is implemented and not having the builders marking their own homework, as it were.

**Martin Lennon:** We found the same in planning for new builds. You might have a threshold height specified, but it might be timber-frame construction, so water can seep in underneath, or it might not have anything clarified about the air bricks, for example, so it is partial. There is a theme here that we are looking at physical resilience and financial resilience separately. If we do not have the tokens or systems to try to connect the two and meet the financial regulation, as well as the physical one and that demonstration, then it is very hard to provide both financial and physical resilience.

**Q315 Martin Rhodes:** I have a final question for Mr Shepherd. What role should the insurance industry and insurers play in shaping climate resilience more broadly through investment, for instance, in community-level defences, or alignment with planning and building regulations that we have just been talking about?

**Mark Shepherd:** There is absolutely a role for insurers as investors in UK infrastructure and assets to promote climate resilience. We have touched on things such as adaptation finance. DEFRA is consulting at the moment, as has been mentioned, on future funding models and how that might currently work.

One point I would make, Chair, is one you made in a previous evidence session about whether insurers are the right vehicle to be investing in assets like flood defences. At the moment, there is no mechanism for insurers or pension providers to be able to do that, and to get a return on that investment that competes with their other investments.

Let us take a pension fund: if they are looking to get an average return across a series of investments, at the moment, if they were looking to invest in flood defence there is no monetary return, or no mechanism for



them to get a monetary return in order to do that. That is not possible, but that is an option that could be looked at by Government. Is there a financial instrument there that would give an effective return to potential investors, and investors who are not benefiting directly from that flood defence, if that makes sense. It can work for businesses in that area that are going to benefit from the return, but not for those that are currently more institutional investors.

**Q316 Martin Rhodes:** One of the things you think Government might do is look at ways that they could incentivise these schemes for investors who, as you say, are not directly geographically affected by it, and making it something that has a return.

**Mark Shepherd:** An investible asset, exactly.

**Q317 Chair:** Mr Shepherd, could I ask you to come back to the Committee with a bit more detail on how businesses in flood risk areas can avail themselves of specialist insurance that would manage that risk? There will be many Members of Parliament keen to push their constituent businesses towards that.

You spoke at some length about new housing in floodplain areas. I wonder if you are aware of any assessment that has been done about the impact of new housing on their neighbouring properties? We have recently had a situation in Chesterfield where a new housing estate has been built, and now the houses near to them have been flooded for the first time ever. There is clearly a belief that those houses are okay, but it has now had impacts elsewhere. Is this something that Government should be doing more on? Is it something that the industry is concerned about?

**Mark Shepherd:** I do not have any special insight into any research that has been done in that area, but we have certainly heard the same anecdotal examples of where planning decisions are made but not really thought about: the water needs to go somewhere, so where is it going to go? Is it being diverted into an area that has other buildings, and therefore going to be affected and essentially turn into a flood plain?. We have certainly heard about those examples.

Clearly, if that is the case, those are going to be concerns for our industry, which is on the hook for, or potentially insuring in the future, those buildings where the mapping, the decisions and the understanding of where that water was originally going has changed because of a new development. It is really difficult, because all of that is obviously constantly changing. You also have the factors of more frequent and volatile weather systems impacting and changing that modelling as well.

It is not easy—I absolutely get that—but there is more that could be done there to fully understand those implications, and more responsibility on those developers, should they develop in those areas and impact other properties, or not go through with what they said that they would develop, or develop in the right way. It is things such as sustainable



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drainage systems, which might be in place for the planning stage but then are ultimately never built into the development.

**Chair:** Thank you. This session has been part of the flood resilience inquiry, but there is quite a bit of evidence we have heard today that might also feed into what we are thinking about on the housing and planning inquiry we are doing. To the three of you, thank you very much for the evidence you have provided today. We are very grateful.