



White Paper: Flood Defence Funding

PROTECTION MONEY

DEBATE BACKGROUND

£1bn

Annual amount
Environment
Agency says
must be spent
on flood and
coastal defences

£792M

Government
spend on flooding
and coastal risk
management in
2018/19

60%

Proportion of flood
defence funding
spent in London and
the South East

In association with

AECOM

Devastating floods have left thousands homeless and caused billions of pounds of damage in recent years, hitting areas of Cumbria, Yorkshire and Somerset especially hard. Immediate and competing draws on local authority budgets, make the case for investment in flood risk management difficult despite the far-reaching impacts. **Margo Cole** investigates.



Once again, many parts of the UK were hit by serious flooding this autumn. It disrupted services and caused misery to householders. This time around, the worst affected areas were South Yorkshire and the Midlands, but few parts of the nation have been immune, with flood warnings in force everywhere from south west England to Aberdeenshire.

Prolonged heavy rain caused the flooding. In some parts of the UK more than half a month's worth of rain fell in just one day in November, a month in which most areas experienced above average rainfall.

While the circumstances may be exceptional, the result is not. Almost every year flooding hits the headlines in the UK, whether it is the result of autumn storms, high tides or torrential summer downpours.

Understandably, these events are followed by calls from the affected communities for something to be done to prevent it happening again. And often this is what happens. After the 2007 floods – in which 13 people died, more than 55,000 homes and businesses were affected and 17,000 families had to leave their homes – a major programme of flood defence construction was initiated. In the following 10 years the government invested £3.1bn in projects to reduce flood risk, including 1,176 new flood defences.

But such a reactive policy may not be sustainable. "What you have at the moment is a situation where there is a flood event in which communities are flooded, and then you see funding [for flood alleviation projects] straight afterwards," says Aecom regional director Fay Bull. "Is that

Climate change
is increasing
flood risks



the right solution? It's not creating community resilience."

Association of Drainage Authorities (ADA) chief executive Innes Thomson adds: "As a country we're absolutely fabulous at dealing with a problem when it arises; and successive governments have decided that's the best economic solution to follow. But elsewhere, [governments] are proactive, because economically they would be in a very serious situation if something happened."

Climate change means flooding is set to increase over the coming years, making the traditional reactive approach even less tenable.

"Scientists tell us that our ability to respond is going to get less and less," says Chartered Institution of Water and Environmental Management

(Ciwem) chief executive Terry Fuller. "Climate change is driving us to be more proactive."

In her introduction to the *Draft National Flood and Coastal Erosion Risk Management Strategy for England*, published earlier this year, Environment Agency chair Emma Howard Boyd says: "Climate change increases the risks [of flooding]," adding: "It is not realistic to try to manage more increasingly intense flooding and sea level rise with limitlessly high walls and barriers."

The Environment Agency estimates that, as a nation, we should be spending an average of at least £1bn a year on flooding and coastal change infrastructure over the next 50 years to mitigate the impacts of climate change. But it says the cost of becoming resilient to flooding and coastal change should be spread between "government, business and people", by promoting sustainable investment in infrastructure, housing and the environment.

It also anticipates that money

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should be spent differently.

“Traditionally, investment has been targeted at new flood and coastal infrastructure and its subsequent maintenance,” he said.

“While this will remain very important, we’ll need a wider range of tools for creating climate resilient places. In combination, natural flood management offers opportunities to slow, store or filter floodwaters, while community resilience and preparedness can help individuals and communities recover after a flooding or coastal event.”

This shift in emphasis away from government-funded, hard infrastructure, such as sea defences and flood walls, reflects a change in the way flood risk mitigation measures have been paid for in recent years.

In the past, flood defence projects were largely funded from a national budget. But in 2011, the government changed the system to a “partnership” approach, aimed at encouraging more local contributions to flood defence schemes in the hope that this would result in more flood defence projects going ahead, at lower cost.

The government – through the Environment Agency – still contributes to flood risk mitigation projects, but the amount of funding depends on the level and type of benefits the scheme provides. This is measured in terms of, for example, the number of households protected, or the amount of damage prevented. If the government fails to provide the full cost of a project, local authorities and communities can still go ahead with it, but have to find the remainder of the funding themselves, for example, from developers or local businesses.

Anglian Water regional flood risk manager Jonathan Glerum says partnership funding works well in certain circumstances: “If you’ve got a big coastal or fluvial scheme,

This report is based on a round table discussion held in London during New Civil Engineer’s Future of Floods conference in November. The discussion was held in association with Aecom. Around the table were:

Jonathan Glerum regional flood risk manager, Anglian Water
Mark Stratton coastal policy strategy & environment team manager, Eastern Solent Coastal Partnership
Jonathan Moxon flood risk manager, Leeds City Council
Alex Nickson water resources and growth lead, Thames Water
Anthony Fernihough profession head (pumps and drainage), Transport for London

Priscilla Haselhurst flood drainage and special projects officer, Medway Council
Owen Davies flood risk manager, Royal Borough of Greenwich
Paul Shaffer associate (water management), Ciria
Innes Thomson chief executive, Association of Drainage Authorities
Terry Fuller chief executive, Chartered Institution of Water and Environmental Management
Martin Williamson government & public sector lead for water, Aecom
Jonathan Short associate, Aecom
Graham Knott regional director, water resources, Aecom
Fay Bull regional director, water, ports & power, Aecom
Mark Hansford editor, New Civil Engineer

partnership funding does work; but if it’s a small surface water scheme, it doesn’t work.”

One of the problems associated with the partnership funding model is aligning timescales, says Thomson. “Partnership funding has always been a bit of a public authority merry-go-round, and we have not completely broken into private sector funding for this yet,” he says.

“One of the reasons is the 12 month cycle for [government-funded] grant in aid versus the private sector saying they are going to put some money into a project in three or four years’ time.”

Eastern Solent Coastal Partnership (ESCP) coastal policy strategy and environment team manager Mark Stratton agrees. “The principle of partnership funding does work,

but it takes a lot of time and a lot of resources, and years of planning to get to the delivery stage,” he says. “We have a lot of problems aligning the timescales.”

The ESCP was formed in 2012 between Fareham Borough Council, Gosport Borough Council, Havant Borough Council and Portsmouth City Council. It brings together all of their specialist coastal officers and engineers to manage 162km of coastline. By pooling their resources, the councils have created a large, specialist engineering team and developed the expertise to act as a broker for negotiating public and private sector contributions.

While the partnership has been successful in attracting public and private contributions, Stratton is concerned that the outcome measures used to determine the level of government funding might not match local priorities.

“When we develop a scheme, we start with the place and map all the benefits it can deliver; then we

AT THE ROUND TABLE

FURTHER INFORMATION

Carbon Brief’s analysis where government spends flood cash
www.carbonbrief.org

Local Government Association explainer on where floods come from

Defra’s latest breakdown on flood defence spending
 Search FCERM statistics publication, September 2019

“ Going back to [projects being] 100% funded might stifle creativity

“We’ve got the way we’re measured driving our behaviour

map all the beneficiaries,” explains Stratton. “Partnership funding stops that, because of the outcome measures.”

Glerum says the Environment Agency’s outcome measures are actually “outputs”, not “outcomes”. For a local community, the outcome of any project may be to create a better or healthier place to live, or more local employment.

Flood risk mitigation measures can be used to help achieve these wider benefits, but they may not receive government funding because they fail to match the stated output criteria such as the number of homes to be protected from flooding.

Leeds City Council flood risk manager Jonathan Moxon says: “Our default for anything other than heavily residential risk-based schemes is to look at other ways to get funding – like Section 106 agreements, or through Network Rail or Highways England – because that’s easier than meeting the Environment Agency/Department for the Environment, Food and Rural Affairs business case.”

Aecom government and public sector lead for water Martin Williamson is concerned that local authorities relying on Environment Agency funding for flood schemes may be forced to choose projects that may not give the overall best outcomes for their communities. “We’ve got the way we’re measured driving our behaviour,” he says.

But Bull thinks the fact that flood mitigation projects are rarely 100% government funded these days can be positive.

“The current funding situation does drive us to think differently and to think creatively,” she says, adding that engineers should be thinking more about issues such as “place” and wellbeing. “Going back to [projects being] 100% funded might stifle creativity.” **N**



Major flood defence schemes are often built reactively

CASE STUDY: NOTTINGHAM

Nottingham City Council is delivering a bold urban river restoration project, enriching the local environment for nature and the community while reducing flood risk to over 140 households.

The Day Brook Blue Green Infrastructure scheme demonstrates the benefits of embracing a creative approach to partnership funding for flood risk management. It also shows the power of collaboration between delivery partners and stakeholders to deliver a rich, multiple benefit scheme.

The community of Old Basford will benefit from reduced flood risk, while the wider community can enjoy improved parks with enhanced catchment connectivity, a rich network of habitats, improved public access and educational and health opportunities linked to habitat creation.

Nottingham has a long history of flooding, with at least seven flood events between 2009 and 2019. In recent years, the worst flooding was in July 2013 when intense rain caused widespread flooding in urban areas, including the Day Brook catchment where many properties in Old Basford were flooded.

The Day Brook is entirely urbanised, culverted and canalised. Within 30 minutes of intense rainfall the Brook can reach critical levels, providing little time for authorities to respond or for warnings to be issued to the community. With climate change, the risk of flash flooding from the Brook is predicted to increase.

In 2014, Flood Defence Grant in Aid (FDGiA) funding was allocated by the Department for the Environment, Food and Rural Affairs for a flood

risk management scheme to protect properties in Old Basford. But the project faced a significant funding shortfall.

Nottingham City Council, in conjunction with Derby City Council, successfully secured European Regional Development Funding from the D2N2 Local Enterprise Partnership to deliver Blue Green Infrastructure at 13 sites, including along the Day Brook. The funding aims to improve urban open spaces to support greater habitat diversity, as well as enabling people to be more connected to nature, making Nottingham and Derby more attractive places for businesses and citizens.

The European Regional Development Fund (ERDF) provided match funding for FDGiA money and a total of £3M was secured for the Day Brook scheme.

Property, construction and infrastructure consultancy Perfect Circle (in which Aecom is a partner) and contractor Balfour Beatty were appointed under the Scape Framework. The collaborative client-consultant-contractor delivery team brought together a range of skills and technologies to deliver a highly technical multi-disciplinary solution.

The ERDF funding offered a unique opportunity for the catchment, with a move away from traditional flood defence and a focus on making space for water. The final solution optimises existing flood storage in the upstream catchment and restores the brook to a more natural course through a network of linear parks, creating a meandering channel, wetlands and scrapes with improved footpaths and access.