



# The challenges of creating a climate resilient country



Like the rest of the world, the UK's climate is changing and will continue to change as a result of greenhouse gas emissions. Met Office records show that the 21st century has so far been warmer than the previous three centuries. The summer of 2018 was the joint hottest ever recorded in England.

These changes are set to continue as confirmed in The Met Offices' latest *UK Climate Projections 2018 Study*, which was released in November 2018 and updated in March 2019. Here, Andrea Nemes, principal drainage and flood risk engineer at PJA, tells us more...

The *UK Climate Projections 2018 Study* provides the most up-to-date information on how the UK climate may change by the end of the 21st Century and finds that we can expect:

1. Hotter, drier summers
2. Milder, wetter winters

3. Rising sea levels

4. More extreme weather events  
It is estimated that over five million people and two million homes and businesses in England are at risk from flooding and coastal erosion, which is expected to rise significantly over the next

two decades. Furthermore, two thirds of properties in England are served by infrastructure in areas at risk of flooding and, for every person who suffers flooding, around 16 more are affected by loss of services such as power, transport and telecommunications.

Following the 2015/16 winter floods, the Government assessed the resilience of key local infrastructure and found the following areas are at risk of flooding:

- 41% of transport and utility infrastructure
  - 10% of major roads
  - over 55% of water and sewerage pumping stations
  - 20% of railway lines
  - 28% of gas infrastructure
  - 4% of electricity sub-stations
- (HM Government, 2016, National Flood Resilience Review).

The Environment Agency (EA) and other flood Risk Management Authorities (RMAs) are investing over £2.6bn of Government funding to reduce the risk of flooding and coastal change to over 300,000 homes.

Over £200m is being invested by the EA to maintain existing flood and coastal risk management infrastructure to ensure it continues to protect communities. However, the EA realises that it is unrealistic to try to manage increasingly intense flooding and sea level rises with limitlessly high walls and barriers. Instead, efforts are being focused on creating climate resilient places and developments, particularly as the number of properties built in the floodplain is likely to double over the next 50 years, if not otherwise steered, due to population growth and climate change.

In response, the EA has drafted a revised *National Flood and Coastal Erosion Risk Management Strategy (FCERM)* for England, which is currently out for consultation and closes on 4 July 2019. The EA will review the responses and publish a final document that will be laid before Parliament in winter 2019.

This strategy forms part of the Government's commitments set out in its proposal *A Green Future: Our 25 Year Plan to Improve the Environment* which presents a vision for the nation so that we may be prepared for, and be more resilient to flooding and coastal change, which will hopefully enable

us to survive these changes today, tomorrow and to the year 2100.

The FCERM strategy sets out 15 objectives and 36 measures which challenge RMAs to achieve the ambition of creating climate resilient places. They include:

1. From 2021, invest in planning skills and capabilities to ensure it can effectively advise planners and developers to enable climate resilient places.
2. From 2020, seek to better align long-term planning for flood and coastal change with water company business planning cycles to identify opportunities for managing both floods and droughts.
3. From 2021, contribute to improving the natural, built and historic environment through its investments in flood and coastal projects.
4. From 2021, help ensure that 75% of all water bodies are in natural or near-natural condition within 25 years.
5. Between now and 2030, use funding and financing from new sources to invest in making the nation resilient to flooding and coastal change.
6. By 2025, test whether it is feasible to use upfront financing to deliver an adaptive approach in a place which will need very significant investment in the future.
7. Between now and 2030, take opportunities to improve our natural, built and historic environment through its programmes, strategies and activities to manage flooding and coastal change. This should include contributing to the achievement of statutory requirements relating to the protection of habitats, conservation and the water environment.
8. By 2026 lead local flood authorities will be required to update their local flood risk strategies to incorporate adaptive approaches to planning for flood and coastal resilience in a place.

To achieve the aims of this draft strategy and to keep building the nation's resilience to flooding and coastal change, while at the same time recognising the requirement for sustainable growth, it is clear that significant investment will be needed. Indeed, the strategy recognises that RMAs will need to use funding and finances from new sources. A robust spatial planning process is also essential, and the EA and other RMAs have a key role to play in engaging and advising developers and planners to enable resilient development.

However, it should be recognised that we all have a responsibility as RMAs, local authorities, public services, businesses and individuals to work more co-operatively in planning out safer, more resilient development as well as taking every opportunity to protect and improve our natural, built and historic environment for people and wildlife.

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