

Peak rainfall update to ‘Flood risk assessments: climate change allowances’

What this is about

On 10th May 2022 the peak rainfall flow allowances in [‘Flood risk assessments: climate change allowances’](#) were updated so they reflect the latest projections in UKCP Local (2.2km)^[1] and subsequent research ‘FUTURE-DRAINAGE: Ensemble climate change rainfall estimates for sustainable drainage’^[2] (referred to as ‘FUTURE-DRAINAGE’ herein).

The main changes are as follows:

- Peak rainfall allowances are provided for ‘management catchments’ rather than a set of single national allowances for England.
- The 1% and the 3.3% annual exceedance probability events are covered.
- Two epochs are provided rather than three as previously – the ‘2050s’ and ‘2070s’. 2050s epoch should be used for development with a lifetime up to 2060 and 2070s for development with a lifetime between 2061 to 2125 respectively.
- Central and upper end allowances are provided as previously, but there is a focus on using the central allowance for development with a lifetime to 2100 and the upper end for development with a lifetime to 2125.

UKCP Local (2.2km) and supporting research FUTURE DRAINAGE provide updated peak rainfall projections that are based on significantly more robust climate modelling than the peak rainfall allowances published in 2016. By ensuring our guidance is premised on the latest climate change projections, it promotes resilient and sustainable communities and built environment, helping local planning authorities and developers to demonstrate they are prepared for the climate emergency.

The central allowance, based on the 50th percentile of the high emission scenario (RCP8.5), represents scenario that will meet or exceed a 4°C increase in global mean temperature by 2100. However, UKCP Local (2.2km) only provides projections up to 2080. For development with a lifetime up to 2100 it is robust to use the central allowance, however, for longer life development (such as residential which also is more vulnerable), it is more robust to use the upper end in order to account for the relatively short time horizon in the underpinning projections.

This update supports the Environment Agency goal for ‘a nation resilient to climate change’

In our corporate plan ‘EA 2025’ we state our ambition to be a stronger leader on climate adaptation and resilience, encouraging others to act now on the climate emergency and invest in adaptation.

The guidance promotes a robust approach to climate resilience, based on the high emission scenario of UKCP18, with the central allowance representing a 4°C increase by 2100. This ensures our approach is grounded on the latest evidence on the global climate change pathway we are currently following, reflected in [UNEP Adaptation Gap report](#) (Jan 2020), which states we are heading for a 3°C temperature rise this century, but this could be as high as 4°C.

Future updates

The allowances for sea level rise and peak river flow were updated based on projections in UKCP18 and supporting research in 2019 and 2021 respectively. Following this update to peak rainfall allowances, we do not anticipate further updated to the climate change

[1] Part of UKCP18 see [UK Climate Projections \(UKCP\) - Met Office](#)

[2] [Future drainage - Press Office - Newcastle University \(ncl.ac.uk\)](#)

allowances in the near future. We will consider customer feedback and update supporting guidance as necessary.

Guidance for flood and coastal erosion risk management schemes and strategies

The peak rainfall allowances will also be updated in Environment Agency guidance '[Flood and coastal risk projects, schemes and strategies: climate change allowances](#)' later in May.

This update will take a similar approach. Contact Andrew Eden

(andrew.eden@environment-agency.gov.uk) for a separate briefing explaining the update to this guidance.

Contact for further information

If you have any questions about the update to 'Flood risk assessments: climate change allowances' please contact [Caroline Sutton](#).