

Supplementary note on Climate Change considerations for flood and coastal management

It is recognised that some aspects of expected climate change will have an impact on flood and coastal management. Chapter 6 in FCDPAG1¹ set out the basis for consideration of climate change and detailed sea level rise allowances were recommended in FCDPAG3². This note summarises the results of new work to review recent climate change scenarios and consider their impact on flood and coastal management.

Research led by HR Wallingford³ has reviewed the previous recommendations in the light of new climate change scenarios developed by the Defra-sponsored UK Climate Impacts Programme (UKCIP) for 2020's and 2080's which were published in April 2002. The research suggests that current allowances for sea level rise and sensitivity allowances for increased river flow are still appropriate. It also recommends that sensitivity allowances should be added for increases in offshore waves. These recommendations are endorsed by Defra and the Environment Agency and should be applied to all future applications for grant aided flood and coastal defence projects. The recommendations are summarised in the table below.

Parameter	Recommendation	Comment
Mean and extreme sea levels		
EA Regions – Anglian, Thames, Southern and North East (South of Flamborough Head)	6 mm / year	As previously – however, extreme levels should be reviewed if higher extreme values, especially around the Thames Estuary are supported by future modelling
EA Regions – North West and North East (North of Flamborough Head)	4 mm / year	
South West and Wales	5 mm / year	
High and extreme rainfall and river flow	Test sensitivity to additional 20% in peak flow or volume over 50 years	No change though further research currently in progress
High and extreme wind speeds	Test sensitivity to 10% increase in offshore wind speeds and wave heights by 2080s (and 5% increase in wave periods)	New recommendation – needs to be considered in relation to depth limited conditions inshore

¹ Flood and Coastal Defence Project Appraisal Guidance, Volume 1, Overview (including general guidance), 2001, Defra publications ref. PB5518

² Flood and Coastal Defence Project Appraisal Guidance, Volume 3, Economic appraisal, 1999, Defra publications ref. PB 4650

³ UK Climate Impacts Programme 2002 Climate Change Scenarios: Implementation for Flood and Coastal Defence: Guidance for users, R&D Technical Report W5B-029/TR, available from April 2003 on the Environment Agency Web Site (see 'Risk' Theme pages in www.environment-agency.gov.uk/floodresearch)

The research report³ provides more details and examples of application to a variety of different analyses and decision making situations. The complete report will be available on the Environment Agency web site from May 2003.

Climate change is just one of many uncertainties that need to be taken into account. To ensure efficient use of resources the level of analysis must be appropriate to the decision being made. Larger strategic studies and those involving very significant levels of investment will often need a detailed assessment of present and future risks for each decision using the published UKCIP scenarios and relevant local information. However, for routine flood and coastal erosion projects such a detailed assessment would require a disproportionate resource and involve different assumptions preventing direct comparison of projects.

Most routine projects should use the recommended allowances, this will ensure that different projects make provision for future changes in a consistent way and provide a valid basis for comparing investments. Even where detailed studies are carried out it will normally be desirable to use the recommended allowances as a baseline scenario for comparison with other projects. These allowances are also generally applicable to other activities including flood mapping and development planning and control (for example, PPG25 refers to the need for climate change assessments in planning decisions).

Further information and advice on application of this supplementary guidance is available from the Environment Agency Risk and Forecasting Team or Defra Regional Engineers.

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