Dear [Name],

Please find attached the information you requested of the Centre for Ecology & Hydrology (CEH), with reference to your request for information under the Environmental Information Regulations 2004, dated 23rd August 2018, clarified verbally in a telephone conversation on 4th September with [Name] to exclude general ‘flood estimation’ as a whole.

It is our opinion that the information requested constitutes environmental information and your request has been considered under the terms of the EIRs.

We summarise your request as follows:

This enquiry relates specifically to the use of the FEH13 rainfall depth-duration-frequency (DDF) model for the design of flood and drainage infrastructure such as stormwater detention ponds.

You are asking how regularly the model is updated and when the next review will take place. You have confirmed that when you refer to the Flood Estimation Handbook (FEH), this means the DDF models that form a relatively small part of the FEH methods and not the FEH statistical and rainfall-runoff methods.

I attach the response from our Head of Flood Estimation, [Name]. I hope this fully answers your questions. A printed copy of The winter floods of 2015/2016 in the UK - a review is available on request.

If you feel we have failed to comply with your request in accordance with the requirements of the Regulations, you have the right to ask for an internal review (Regulation 11). Internal review requests should be submitted in writing within 40 working days after the date on which you believe we failed to comply with the requirements – normally the date of receipt of our response to your request. This should be addressed to The Complaints Officer:

UK Research and Innovation
Polaris House
North Star Avenue
Swindon
SN2 1EU
United Kingdom.

Please quote the reference number(s) above in any future communication.

By email: [Email Address]

20 September 2018
If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: Information Commissioner’s Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF

Yours sincerely,

CEH FOI Office
foi@ceh.ac.uk
Clarification of request

Following conversation with on 4 September 2018, we understand that enquiry relates specifically to the use of the FEH13 rainfall depth-duration-frequency (DDF) model for the design of flood and drainage infrastructure such as stormwater detention ponds. He is asking how regularly the model is updated and when the next review will take place. He confirmed that when he refers to the Flood Estimation Handbook (FEH), he means the DDF models that form only a relatively small part of the FEH methods and not the FEH statistical and rainfall-runoff methods.

FEH13 is not actually an edition of the handbook but a revision of the original rainfall DDF model (now known as FEH99) which is detailed in Volume 2 of the FEH (Faulkner, 1999).

Response

The Flood Estimation Handbook (IH, 1999) represents the outcome of a five-year research programme to develop and implement a set of generalised procedures for rainfall and flood frequency estimation in the UK. The five-volume handbook gives details of the underlying research, which is wide-ranging and statistically complex. In the years since its first publication, the methods, together with the data and software products necessary for applying them, have been subject to further development and refinement. These developments have mostly been funded by Defra and the Environment Agency through the Joint Defra / Environment Agency Flood and Coastal Erosion Risk Management (FCERM) Programme, although CEH National Capability funding from the Natural Environment Research Council has also contributed to the research.

A key aim of CEH’s ongoing FEH research programme is to respond to user needs and feedback on the application of the various methodologies to real world problems. This is perhaps most relevant to the flood frequency estimation methods, which require a great deal of expert judgement in their application. There is currently no formal timetable for updates to the FEH flood or rainfall frequency methods, but feedback from the wide user base is used to inform the research programme.

There are many scientific papers relating to flood estimation using FEH methods which are all in the public domain. The FEH13 DDF model (see clarification above) was originally developed as part of a Defra-funded project on long return period rainfall, the final report of which is available online: http://evidence.environment-agency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=FF9A346A-3C9B-484C-8CF4-F83604439457&PageId=a0fe6dfc-506a-452c-9bff-a7ec06b4e6b0

Other relevant publications are included in the reference list below.
The final development and generalisation of the FEH13 DDF model was funded by CEH and model outputs are available through CEH’s FEH Web Service (https://fehweb.ceh.ac.uk).

Following on from the extreme rainfall events and floods experienced in Cumbria in winter 2015-16, current research is recalibrating the FEH13 DDF model using daily and hourly annual maximum rain gauge data up to and including 2015. If this is found to have a substantial effect on the frequency estimates (for example, the 1-in-100-year rainfall of 1-day duration) in the region, it is likely that a recalibration of the model using updated annual maxima throughout the UK will be recommended. In this case, the revised model estimates would be rolled out through the FEH Web Service.

CEH is not responsible for recording and analysing extreme weather events. This is mainly carried out by the UK Met Office and the Environment Agency. Therefore we do not routinely investigate the return periods of recorded events. The blog post referenced in the enquiry led to a report on the floods in the north-west of England, published as part of an occasional series of outputs of the National Hydrological Monitoring Programme which documents major contemporary hydrological events (https://www.ceh.ac.uk/sites/default/files/2015-2016%20Winter%20Floods%20report%20Low%20Res.pdf).

References


Stewart, EJ; Jones, DA; Svensson, C; Morris, DG; Dempsey, P; Dent, JE; Collier, CG; Anderson, CA (2013) Reservoir Safety - Long Return Period Rainfall. Final report (two volumes). Defra/EA FCERM R&D Programme.
