Department
for Environment
Food & Rural Affairs

Consultation on reservoir safety emergency on-site flood plans

Summary of responses and government response

27 November 2020

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Introduction

1. This consultation ran for 9 weeks, from 16 June 2020 to 17 August 2020. The consultation sought views on the content of a Ministerial Direction, which would make it a legal requirement for all large raised reservoirs in England to have an On-site Flood Plan. The consultation questions were designed to help ensure that any new requirements are proportionate to the type and classification of a reservoir and to the likely impact of flood risk from a breach. The consultation also gathered views on training to support emergency planning and incident response for reservoir incidents and how existing guidance might be improved.

Number of responses

2. The consultation received 138 responses. The table below shows the numbers of respondents in each group. Some respondents did not provide demographic information, and percentages have been rounded to whole numbers. The following organisations also gave their views: the Institution of Civil Engineers, National Farmers Union, and Natural Resources Wales.

Organisation (in groups)	Number of responses	Percent
Undertaker (owner or operator) (i.e. water companies, charity groups, trust, etc.)	34	25%
Reservoir Engineer (Supervising Engineers & All Reservoir Panel Engineers)	47	34%
Local Authorities, Local Resilience Forums, and emergency responders	36	26%
Industry representative body	1	1%
Organisational responses, e.g. ., the Institution of Civil Engineers, Natural Resource Wales, and the National Farmers' Union	20	14%

Total	138	100%

Overview of responses

3. The predominant number of the responses supported and agreed with the proposed minimum criteria for an On-site Flood Plan. A small number of respondents expressed the view that reservoirs that are designated as not high-risk should not be required to have an On-site Flood Plan because they pose less risk.

4. There was also predominant support for the proposal that On-site Flood Plans should be kept up to date regularly to ensure details are valid. This proposal was supported across the groups of respondents, including Undertakers, Local Resilience Forums, and reservoir engineers. Regarding high-risk reservoirs, the predominant number of respondents indicated that On-site Flood Plans should be updated once a year. There was a range of views for not-high-risk reservoirs, but the responses suggest that not-high-risk reservoirs should be updated less frequently (3-5 years) as the risk level is not the same. Most respondents supported the testing of On-site Flood Plan s; however, there were mixed responses in terms of the frequency and the type of testing that is required. Respondents asked for clear guidelines about what is meant by "testing of plans". Most respondents flagged concerns about resource implications if an On-site Flood Plan were required to be tested via a full live exercise for every reservoir. Some suggested a proportionate approach using a few live exercises to train or pass on lessons learned to many others.

5. There were mixed views about the existing guidance relating to preparing on-site flood plans. Several responses stated the guidance was sufficient and needed only minor changes to bring it up to date. Others suggested the guidance could be simpler and shorter. Some respondents provided proposals for how the guidance might be improved: for example, by including Joint Emergency Services Interoperability Principles and information about giving emergency messages.

6. 96% (133) of respondents agreed that training in general around emergency planning and incident response is necessary. There was a predominant view that reservoir undertakers, operational staff, and senior members of any organisation that own a reservoir will need training. A few respondents suggested that this could be done together with key stakeholders, such as Local Authority emergency planners and engineers.

Consultation questions and responses

Do you agree with the minimum information proposed for inclusion in a reservoir emergency flood plan?

138 responses were submitted to this question.

The minimum information proposed was:

- the measures that are in place in order to cope with and plan for emergencies and ahead of, or during, severe weather events
- key actions to be taken by the undertaker, and/or their staff, to prevent an uncontrolled release and to mitigate the effects of a flood
- actions to be taken in the event of an uncontrolled release
- likely area of flooding (in reference to flood risk maps)
- how and when the flood plan should be tested
- key contacts in an emergency (e.g. undertaker's organisation, neighbours, relevant local authorities, Local Resilience Forums and the Environment Agency)

Option	Total	Percent
Yes	116	84%
No	22	16%

If no, please state what information should be excluded?

Reasons for disagreeing with the proposal included concerns about the additional costs rather than the minimum requirement as such. The concerns were around the cost that could be incurred in the creation and maintenance of an On-site Flood Plan, particularly for owners such as farmers or angling clubs. Some of these respondents included those who proposed that there was no need for an On-site Flood Plan as the risk from a not high-risk reservoir is low.

Is there any other information that you think should be included as a minimum?

84% (116) respondents agreed with the proposed minimum information to be included in an On-site Flood Plan. A few of those who agreed with the proposal also suggested additional pertinent information to be included in the plan's minimum information.

How frequently should an on-site flood plan be updated for a high-risk reservoir? Please include a rationale for your proposed frequency.

138 responses were submitted to this question.

Option	Total	Percent
Yearly	82	59%
2 yearly	21	15%
3 yearly	17	12%
other	18	13%

The majority of respondents felt that reviewing, and if necessary updating, the On-site Flood Plan should occur on a yearly basis. The predominant number of respondents agreed it would be best to update plans in line with the annual section 12 inspection. All necessary details in the On-site Flood Plan should be reviewed and updated, such as risk assessments, contact details, changes of operational staff details, etc. Another key point that was flagged is that the frequency of updates should occur in line with the Control of Major Accident Hazards (COMAH) regulations. There were some concerns about requiring regular updates because of the cost and resources required. The responses received from the 13% who ticked "Other" highlighted that On-site Flood Plans should be updated based on risk and over a longer duration, such as 5 years or more.

How frequently should an on-site flood plan be updated for a not high-risk reservoir? Please include a rationale for your proposed frequency.

138 responses were submitted to this question.

Option	Total	Percent
Yearly	21	15%
2-yearly	34	25%
3-yearly	42	30%
Other	41	30%

There was a mixed reaction to this question, as is demonstrated in the table above. Although not specifically asked, some respondents indicated that they did not think that an On-site Flood Plan should be required for a not-high-risk reservoir. Others, however, did comment that even though the risk is lower in theory, the approach should be kept the same as a high-risk reservoir: all the critical information should be reviewed and kept up to date. People who suggested the frequency of updates should be 2- or 3-yearly said that it should be in line with the Control of Major Accident Hazards (COMAH) regulations and that updates should coincide with when Local Resilience Forums' off-site plans are updated.

What changes or events might mean the on-site flood plan should be updated sooner?

126 responses were submitted to this question. Reasons for updating an On-site Flood Plan sooner included: change in ownership and staff, construction work or modification to a reservoir, after an exercise, an actual incident highlights changes are required, or if directed by a supervising engineer or qualified civil engineer.

How frequently should a flood plan be tested? Please include a rationale for your proposed frequency.

138 responses were submitted to this question.

Option	Total	Percent
Yearly	25	18%
2-yearly	16	16%
3-yearly	26	19%
4-yearly	1	1%
5-yearly	25	18%
other	45	33%

There was a mixed response to this question around the frequency of when plans should be tested. A common rationale provided for yearly testing was that a desktop exercise should take place to ensure the On-site Flood Plan is kept up to date. Some respondents who agreed with a 2 to 3-year cycle of testing stated that this testing should be done in line with updating any off-site plans. In addition, some suggested that On-site Flood Plan s should be tested in conjunction with Local Resilience Forums and Local Authorities and other Catetory 1 responders, therefore ensuring it is not a tick box exercise.

The predominant rationale provided for a 5-year testing period was to achieve cost-effectiveness if full testing was required for every reservoir. Of those that provided a rationale, many suggested that there would be little change that would impact on the On-site Flood Plan in a timeframe of less than 5 years, hence a 5-year testing period would be sufficient.

A few respondents who chose "Other" suggested that testing should occur once every 10 years, and it should be based on the risk assessment of the individual reservoir. Also, this would mean having to test within a section 10 inspection. However, the majority of respondents within the “Other” category did suggest testing should be done every 2 or 3 years, in line with the Control of Major Accident Hazards (COMAH) regulations.

Many respondents also highlighted some concerns around the resource implication of testing, particularly for undertakers who own a high number of reservoirs. Some suggested that undertakers that own more than one high-risk reservoir of similar type and have the same key personnel should only test one On-site Flood Plan at two-year intervals.

Some respondents also provided written suggestions about what type of testing could be required, including:

- Internal colleagues conducting a walkthrough of On-site Flood Plan
- A desktop exercise
- A live exercise with external partners such as the Environment Agency, Local Resilience Forums, and other Category 1 responders.

What aspects of the current guidance are not clear?

What is missing from the current guidance?

Do you have any further comments on how the guidance for preparing on-site flood plans might be improved?

The responses to these three questions were analysed together due to cross-overs in the answers. 94 responses were submitted to these questions.

There were mixed views about the guidance relating to preparing on-site flood plans. Several responses stated the guidance was sufficient and needed only minor changes to bring it up to date. Some respondents wanted the guidance to be simpler and shorter, as most reservoir owners are not emergency-planning experts. A few respondents suggested how the guidance might be improved: for example, including Joint Emergency Services Interoperability Principles and information about how to give emergency messages. Several responses suggested that more detail is needed on what is meant by "testing of plans", with some providing examples of documents and procedures they use. Training for undertakers, their staff, and engineers should include how to alert the emergency services to a reservoir incident and how incident management for a major incident is undertaken.

Do you agree that training for undertakers and their staff, engineers, local authority emergency planners, and emergency services is necessary?

133 responses were submitted to this question. The overwhelming majority of respondents agreed that training is required and that all named stakeholders involved in reservoir safety need training.

Is training necessary?

Option	Total	Percent
Yes	133	96%
No	5	4%

Who needs training? Please pick all options that apply.

Option	Total	Percent
Reservoir undertakers and their operational staff	131	95%
Reservoir undertakers boards and senior managers	93	67%
Reservoir engineers	115	83%
Local authority emergency planners	118	85%
Emergency services	113	82%
Not Answered	5	4%

If Yes - What should be included in the training?

What should be included in the training? Please pick all options that apply.

Option	Total	Percent
How and when to take the actions set out in the on-site flood plan	128	93%
To understand the impacts from severe weather	108	78%
To understand the impacts from other emergency triggers	112	81%
How to write, implement and test on-site plans	111	80%
To understand areas at risk of flooding (e.g., interpreting flood risk maps)	108	78%
Other topics	55	40%

Indicate training topics and training needed by role?

The predominant view was that all the options provided should be included in the training. In addition, 79 respondents provided further comments about training. Responses included:

- training should be tailored to roles and responsibilities
- there should be a better understanding of the various roles in the broader management of reservoir safety, i.e. the role of Undertakers, engineers, Local Resilience Forums, etc.
- training should include improving and implementing communication channels between all parties involved and understanding a multi-agency response
- training should include multi-agency exercises with full cooperation with relevant Category 1 and Category 2 responders within the area[1]

[1] Cat 1 & 2 responder are organisations defined in the Civil Contingencies Act 2004 as having responsibilities for carrying out the legislation. Category 1 responders are known as core responders; they include the usual "blue-light" emergency services, as well as others. Category 2 responders are key co-operating responders that act in support of the Category 1 responders. Category 2 responders are mostly utility companies and transport organisations.

- training should be tailored specifically to reservoir undertakers and their operational staff.

Who should be responsible for developing and delivering the training?

138 responses were submitted to this question.

Option	Total	Percent
Industry organisations	47	34%
Reservoir undertakers	28	20%
Reservoir engineers	14	10%
Other	49	36%

Others who might develop and deliver training

82 respondents provided a further explanation regarding who might develop and deliver training. Many respondents suggested that there needs to be a collaboration between industry, undertakers, and engineers when developing training packages. A few responses suggested that responsibility should lie with the Environment Agency/Defra or the Institution of Civil Engineers/British Dam Society.

In what format should the training be made available?

138 responses were submitted to this question.

Option	Total	Percent
Online self-tuition	67	48%
Webinar	80	58%
Site visits	88	64%
Face to face	89	64%
Other	31	22%

Additional information

The majority of respondents selected that training should be provided by site visits, face to face, and webinars. 58 respondents provided additional information, many of whom suggested that a combination of training formats should be provided to ensure everyone can attend. A few respondents stated that training formats should be dependent on specific roles. The examples provided were roles needing site-specific interventions (such as drawing the reservoir down) will require on-site practical training, whilst face-to-face or web-based training will be suitable for more generic roles, providing those trained can participate in exercises.

Should training be added or linked to existing continuing professional development (CPD) courses?

138 responses were submitted to this question.

Option	Total	Percent
Yes	67	49%
No	57	41%
Not Answered	14	10%

There were mixed views about whether training should be added to the Continuing Professional Development courses, as the table above demonstrates. Some respondents indicated that they were not aware of any course that exists. In contrast, many other respondents agreed it should be linked with the Continuing Professional Development courses and could possibly be led by the Institution of Civil Engineers.

If you have any further comments you wish to make, please add them here.

138 responses were submitted to this question.

Respondents reiterated comments made to earlier questions, including that the guidance needs to be simpler and in plain English. Also, respondents noted that the On-site Flood Plans are an integrated part of wider documentation for a reservoir, and that there is a need for more collaboration between reservoir undertakers and relevant emergency responders in planning for reservoir incidents.

Some respondents expressed their concerns about the regulation of farm reservoirs and smaller reservoirs and the costs incurred, mainly where these are not high risk. They wanted such reservoirs to be either out of scope altogether or, if regulated, that this be proportionate to the level of risk posed.

Respondents made several suggestions for improving guidance to apply to owners of single reservoirs and owners with large numbers of reservoirs. One respondent suggested that a three-box approach be used so that plans could accommodate different types of incidents and degrees of severity. Many respondents suggested that mechanisms in the Control of Major Accident Hazards (COMAH) regulations could usefully be applied to reservoir safety.

There were also suggestions for storing information digitally through a common platform so key people could access it. A few responses stated that flood risk assessments should be undertaken when planning for new reservoirs.

Government response

We thank everyone who responded to the consultation.

The government has decided that emergency On-site Flood Plans for high-risk reservoirs are essential. We have considered whether not high risk reservoirs should be required to have a plan or not. Although such reservoirs may not pose a direct risk to life, there could still be consequences that would affect public safety if a reservoir failed, such as economic pressures and detrimental impacts on land, crops, and the local environment, affecting the local community, reservoir owner and their well-being. The government has therefore decided that emergency plans for not high risk reservoirs are needed.

As a result of these decisions, all undertakers of large raised reservoirs (ie high risk, not high risk reservoirs and reservoirs under construction) will be required to have an emergency on-site flood plan for their reservoirs, and plans should be proportionate to the risk designation of the reservoir. The direction will specify the matters to be included within the flood plan, which will take into account the risk designation of the reservoir.

Defra and the Environment Agency concur with most respondents that an On-site Flood Plan should be reviewed annually for high-risk reservoirs. It is sensible to review plans when a Supervising Engineer undertakes an annual Section 12 assessment. The Reservoirs Act 1975 and 2013 regulations already include provision for engineers to certify that flood plans meet the requirements of a Ministerial direction, and for an engineer to provide a direction to an undertaker about any revisions needed to their on-site plan.

Defra will work with the Environment Agency to update the guidance on emergency planning for reservoir undertakers and draw on respondents' information to improve the guidance and make it easier to use. The direction to undertakers will state the information that is to be shared with emergency responders to enable effective emergency planning for communities in the event of a reservoir emergency. Information about the dependency between an on-site plan (held by the undertaker) and an off-site emergency plan (held by emergency responders (the Local Resilience Forums) and Flood Risk Maps for the reservoir will be included in the guidance.

The respondents' insights and views will be used improve the Environment Agency's guidance for reservoir emergency planning and shared with those who develop and provide training regarding reservoir safety. The Environment Agency will be publishing new flood risk maps for many reservoirs in 2021. This will provide a further opportunity for emergency plans to be updated and aid communities to be better prepared to respond in the unlikely event of a reservoir emergency.

The consultation responses have been used to inform decisions and operational details to support a legal requirement for undertakers of large raised reservoirs to have emergency on-site flood plans. This approach builds on existing policy (established through the Flood and Water Management Act 2010) that all reservoirs should have emergency plans. While a large proportion of large raised reservoirs owners do already have on-site plans, those

who do not had cited the lack of legal requirement as their reason. This requirement will close a gap in the current legal framework for reservoir safety in England and will ensure that emergency planning is in place to assure public safety.

The government will take the following actions:

- Issue a Ministerial direction to registered reservoir undertakers in England, which will require them to prepare an On-site Flood Plan for each large raised reservoir for which they are responsible.

- Defra and the Environment Agency will review and update guidance for preparing an On-site Flood Plan.

- Defra and the Environment Agency will work with stakeholders to develop a training strategy for undertakers (staff and corporate directors), engineers, and LRFs regarding emergency planning and incident management. Undertakers will be encouraged to share training events to complement e-learning with site visits and other training activities.