



Department  
for Environment  
Food & Rural Affairs

[www.gov.uk/defra](http://www.gov.uk/defra)

# **Reservoir Safety in England and Wales**

## **Report of the Consultation on the Implementation of Amendments to the Reservoirs Act 1975: the policy to be implemented in England**

**19 July 2013**

© Crown copyright 2013

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit [www.nationalarchives.gov.uk/doc/open-government-licence/](http://www.nationalarchives.gov.uk/doc/open-government-licence/) or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk)

This document/publication is also available on our website at:

Defra: [www.gov.uk/defra](http://www.gov.uk/defra)

Welsh Government:

[wales.gov.uk/consultations/environmentandcountryside/reservoirsafety/?lang=en](http://wales.gov.uk/consultations/environmentandcountryside/reservoirsafety/?lang=en)

Any enquiries regarding this document/publication should be sent to us at:

Reservoir Safety Policy Team  
Defra  
Nobel House  
17 Smith Square  
London  
SW1P 3JR

[ReservoirFM@defra.gsi.gov.uk](mailto:ReservoirFM@defra.gsi.gov.uk)

Or

Flood & Coastal Erosion Risk Management  
Energy, Water and Flood Division  
Welsh Government  
Cathays Park  
Cardiff  
CF10 3NQ

[floodcoastalrisk@wales.gsi.gov.uk](mailto:floodcoastalrisk@wales.gsi.gov.uk)

## Contents

Section 1 - Introduction .....	1
Section 2 - Consultation Process .....	3
2.1 Response to Consultation.....	3
Section 3 - Next Steps .....	5
Section 4 - Revised Policy .....	7
4.1 Large Raised Reservoirs: Capacity, Exemption & Registration .....	7
4.1.1 Definition of a Large Raised Reservoir (LRR) .....	7
4.1.2 Capable of Storing .....	7
4.1.3 Calculation of Capacity .....	7
4.1.4 Reservoirs in Cascade .....	8
4.1.5 Exemptions .....	8
4.1.6 Registration .....	8
4.2 Monitoring, Supervision & Inspections.....	9
4.2.1 Guidance on Supervision .....	9
4.2.2 High Risk Reservoirs: Inspections.....	9
4.3 Construction, Alteration, Abandonment & Discontinuance .....	10
4.3.1 Abandonment and Bringing Back into Use.....	10
4.4 Panels of Engineers and Engineer Reports.....	10
4.4.1 Panels of Engineers .....	10
4.4.2 Incident Reporting .....	10
4.5 Appeals.....	11
4.5.1 Tribunals .....	11
4.5.2 Referee Rules .....	11
4.6 Criminal Sanctions.....	11
4.6.1 New Criminal Liabilities and Civil Sanctions.....	11

4.7	Expenses & Charging .....	11
4.7.1	Expenses .....	11
4.7.2	Arrangement for Civil Protection .....	12
4.8	Other Matters.....	12
4.8.1	Further Amendments .....	12
4.8.2	Regulatory Impact Assessment.....	12
4.8.3	Cross Border England-Scotland Reservoirs.....	12

## Section 1 - Introduction

Large raised reservoirs in England and Wales are currently regulated by the Reservoirs Act 1975<sup>1</sup> (the 1975 Act). The 1975 Act seeks to ensure public safety through imposing a statutory obligation on the undertakers<sup>2</sup> of reservoirs above a certain volume to take and act upon independent professional advice on the integrity of the reservoir to manage and respond to all of the forces and conditions imposed on it. The purpose of this obligation is to reduce the risk of uncontrolled releases of water, which may lead to loss of life.

In England, responsibility for the enforcement of reservoir safety rests with the Environment Agency. In Wales, enforcement is by Natural Resources Wales. In both cases, enforcement is of the legislation rather than the provision of engineering judgement or technical advice to reservoir undertakers. This is the responsibility of the qualified civil engineers employed by the undertakers. Qualified civil engineers are those engineers appointed to Panels of Engineers by the Defra Secretary of State and the Welsh Ministers.

The essential features of the 1975 Act have not changed much from the Reservoirs (Safety Provisions) Act 1930 (the 1930 Act), which was introduced following the failure of certain reservoirs in the 1920's. There has been no loss of life through reservoir failure since the legislation was first introduced, however, in recent years there have been a number of near-miss incidents where lives could have been lost if the reservoir had failed. Sir Michael Pitt's report on the 2007 floods made 92 recommendations including updating reservoir safety legislation.

Schedule 4 to the Flood and Water Management Act 2010<sup>3</sup> (the 2010 Act) includes a number of provisions amending the 1975 Act. The primary reason for amending the 1975 Act is to ensure that appropriate safeguards are in place to protect the public that are based on an assessment of risk. The risks from reservoir breaches are classed as low likelihood/high consequence.

To ensure that reservoir safety in England and Wales is based on a proportionate risk management basis, several amendments to the 1975 Act were included in the 2010 Act. Chief amongst these were the reduction of the threshold for large raised reservoirs from 25,000 cubic metres to 10,000 cubic metres capacity and the introduction of the 'high risk' designation for those large raised reservoirs thought to pose a risk to life. In England, the Government is currently reviewing the evidence for the reduction of capacity and will make an announcement in due course.

---

<sup>1</sup> The reservoirs Act 1975 – [www.legislation.gov.uk/ukpga/1975/23](http://www.legislation.gov.uk/ukpga/1975/23)

<sup>2</sup> For anyone other than the Environment Agency or a water undertaker, this is the person(s) carrying out the undertaking(s) for which the reservoir is used, and where there is no such undertaking, it is the owners or lessees of the reservoir.

<sup>3</sup> The Flood and Water Management Act 2010 - [www.legislation.gov.uk/ukpga/2010/29](http://www.legislation.gov.uk/ukpga/2010/29)

A Commencement Order which included several of the provisions within Schedule 4 to the 2010 Act was passed in October 2011. Defra and the Welsh Government intend to split the implementation of the changes into two phases. In England, phase 1 involves the commencement of the majority of the changes to the 1975 Act for those large raised reservoirs with a capacity of 25,000 cubic metres already covered by the 1975 Act. On completion of phase 1, phase 2 may involve the reduction in capacity threshold to 10,000 cubic metres.

Running for 12 weeks, the consultation sought views on the UK and Welsh Governments proposals to commence the provisions within schedule for 4 of the Flood and Water Management Act in two phases and to seek views on the content of the supporting secondary legislation.

This document provides a summary of the consultation process and sets out the revised policy for England. The responses to the consultation were used to inform the detailed implementation of amendments to the Reservoir Act 1975

## Section 2 - Consultation Process

The consultation was a joint Defra and Welsh Government consultation covering England and Wales only. The consultation paper detailed the policies of Defra and the Welsh Government in respect of the secondary legislation that will be made to support the move to a risk based reservoir safety regime. Comments on the policies were invited during a 12 week period from 23 February to 17 May 2012.

A copy of the consultation paper was placed on the Defra and Welsh Government websites. A copy of the consultation document and the associated impact assessment can be viewed on the links below.

Visit: [www.gov.uk/government/consultations/reservoir-safety-in-england-and-wales-implementation-of-amendments-to-the-reservoirs-act-1975](http://www.gov.uk/government/consultations/reservoir-safety-in-england-and-wales-implementation-of-amendments-to-the-reservoirs-act-1975)

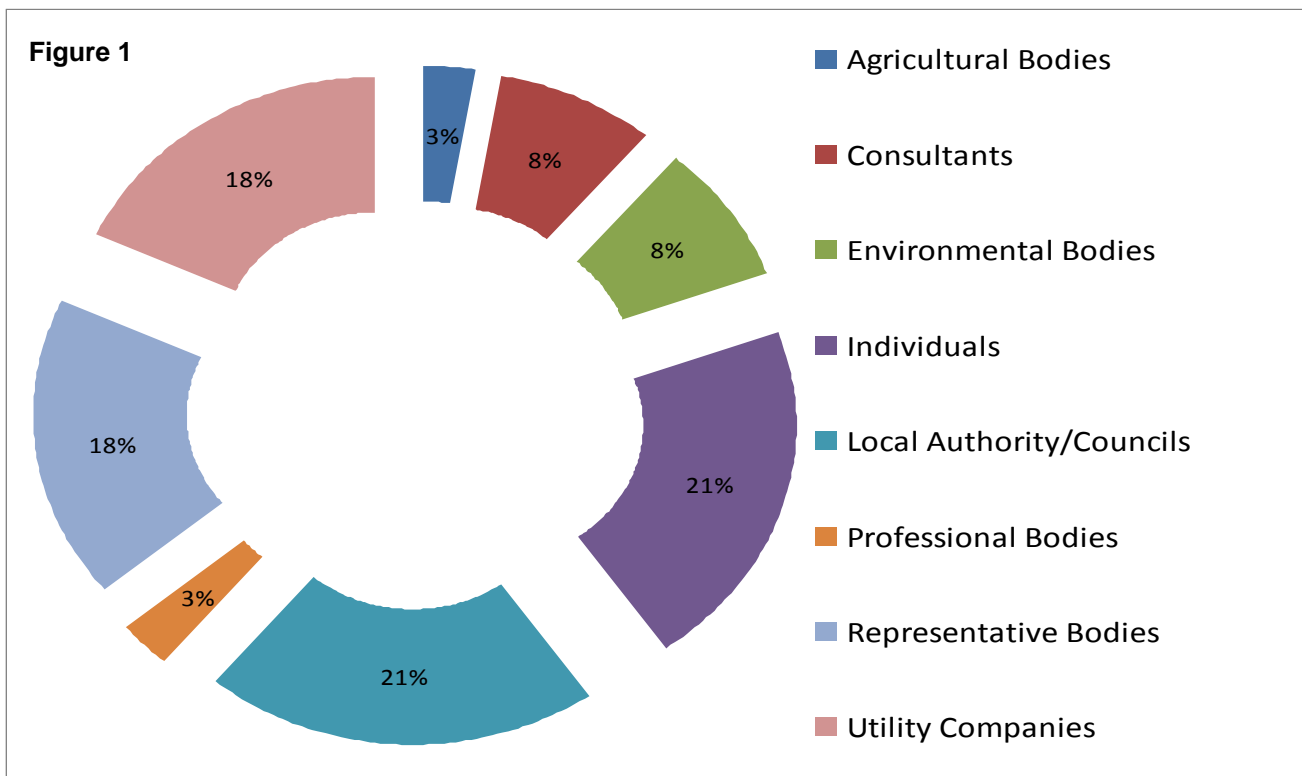
Or

Visit: [wales.gov.uk/consultations/environmentandcountryside/reservoirsafety/?lang=en](http://wales.gov.uk/consultations/environmentandcountryside/reservoirsafety/?lang=en)

### 2.1 Response to Consultation

The consultation closed on 17 May 2012. A total of 72 responses were received. 68 were received in advance of closure and 4 were received after the consultation period had ended. The decision was taken to accept the late responses and they have been taken into account.

The split of respondents is set out in figure 1 below. A summary of the responses received



has been published separately. There is a list of respondents provided as an Annex to the summary of responses.



## Section 3 - Next Steps

UK Government and the Welsh Ministers will make a number of pieces of secondary legislation. The new regulations will reflect the revised policy that takes into account the responses to this consultation and will be introduced in two phases.

In England it is intended that phase 1 will apply only to those reservoirs that are currently regulated, that is with a capacity greater than 25,000 cubic metres. Phase 2 may introduce the reduction of the threshold to 10,000 cubic metres, subject to a review of the evidence supporting the reduction. The policy to be implemented in Wales will be set out in a separate report of the consultation published by the Welsh Government.

### ***Phase 1 (England)***

- Determine how to calculate reservoir capacity.
- Define a structure or area to be treated as 'large' and specify those structures or areas that are not to be treated as a large raised reservoir.
- Set the registration process.
- Provide a right of appeal against the designation of a reservoir as a 'high-risk reservoir'.
- Establish Joint panels of Engineers in England and Wales.
- Provide a right of appeal against a requirement to appoint an engineer and a requirement to carry out a recommendation of an engineer.
- Specify the timing for inspections of high-risk reservoirs.
- Require people to make post incident safety reports.

### ***For consideration at phase 2 (England)***

- The lowering of the capacity threshold to 10,000 cubic metres, subject to a review of the evidence supporting the reduction.
- Cascade reservoirs – considering the proximity to or potential communication with other structures or areas.
- Clarify what is to be treated as abandonment and what is to be treated as bringing a reservoir back into use.
- Detail the assessment of the quality of engineers' reports.
- Civil sanctions.

- Prescribe a charging scheme.

The introduction of secondary legislation will see phase 1<sup>4</sup> take effect followed by phase 2 at a later date. It was originally intended for phase 1 to take effect in the autumn 2012, however, to enable us to consider comments from this consultation exercise and incorporate these into the secondary legislation, phase 1 will now take effect during August 2013 in England.

---

<sup>4</sup> Amendments would come into force for reservoirs currently regulated by the Reservoir Act 1975 (i.e. those capable of holding 25,000 cubic metres or more).

## **Section 4 - Revised Policy**

### **4.1 Large Raised Reservoirs: Capacity, Exemption & Registration**

#### **4.1.1 Definition of a Large Raised Reservoir (LRR)**

Defra agrees that the current exemptions from the Act with respect to lagoons at mines and quarries, and canals and inland navigations should remain. Road and rail embankments which have the capability to hold back water and so fall under the amended definition of an LRR should not fall under the Act unless there is a deliberate intention to store water.

#### **4.1.2 Capable of Storing**

As outlined in the consultation paper, Defra and the Welsh Government intend 'capable of storing' to mean that the water level to be used for the calculation of capacity is the lowest of any spillway crests, but where a spillway is fitted with gates, the gates are closed. For a gated spillway with the gates closed, the capacity will be calculated from the next lowest point of overflow or the top of the gate, whichever is lower. We wish to ensure that the definition is appropriate for flood storage reservoirs which are normally empty. On-line flood storage reservoirs may have a low-level overflow structure at the outlet designed to allow the free passage of normal river flows but to restrict flood flows so that the reservoir fills during flood. We wish to avoid the crest of the low-level structure being interpreted as the spillway for the purposes of calculating capacity.

Whilst we recognise that the blockage of a spillway is theoretically possible, we do not consider that this should form the basis of the capacity calculation for the reasons set out in the consultation. For a reservoir designated as a high-risk reservoir, we consider that the supervision and inspection mechanisms provide the means to minimise the risk of spillway blockage.

There have been suggestions that the capacity of the reservoir should be calculated using a flood elevation for a designated flood. The estimation of a designated flood relies on the data and methods available at the time the estimate is made. This does not provide the consistency needed for the purposes of regulation, so we will use the fixed levels proposed above for the calculation of capacity.

#### **4.1.3 Calculation of Capacity**

The consultation paper sets out a number of points that Defra and the Welsh Government intend to clarify when amending The Reservoirs Act 1975 (Registers, Reports and Records) Regulations 1985 (SI 1985/177) and The Reservoirs Act 1975 (Registers,

Reports and Records) (Amendments) Regulations 1985 (SI 1985/548). It is Government's intention to proceed as outlined in the consultation paper to amend the regulations, taking note of specific technical comments made in the responses, especially related to flood storage reservoirs. There will be a focus on the contents of a reservoir that can escape in the event of an uncontrolled release of water, and this will include any silt that would be mobilised in the event of an uncontrolled release of water from the reservoir.

#### **4.1.4 Reservoirs in Cascade**

Defra will reconsider how it will address reservoirs in cascade and will include consideration of this in the consultation on phase 2 implementation of amendments to the 1975 Act.

#### **4.1.5 Exemptions**

Defra will exempt the following from being treated as a LRR:

- A mine or quarry lagoon which is a tip within the meaning of Mines and Quarries legislation;
- Canals or other inland navigations; and
- Road and Railway embankments, provided that the drains through them are not constructed so as to store water upstream or are artificially blocked for the purposes of using the areas upstream to store water.

We intend to be silent on the following:

- Ponds within extractive waste sites or waste facilities;
- Weirs;
- Structures or areas of water designed to protect land from the sea;
- Sewage sludge lagoons;
- Embanked watercourses.

Where these do not fall under the 1975 Act definition, they are considered to be adequately addressed by other safety legislation provisions.

#### **4.1.6 Registration**

A number of concerns were raised regarding the proposed timescale in which information pertinent to the registration of a reservoir or changes to such information should be submitted to the Environment Agency. The consultation paper suggests 28 days. Given that the registration process is tied to the issue of a construction certificate for a reservoir, we consider that the information required should be available when the certificate is issued

and so can be provided within the timescale. We do not have the powers to delegate flexibility to the Agency to agree a different timescale.

If implemented, any charging regime for registration is a matter for the Environment Agency. However, Defra will request the Environment Agency to consider whether it is appropriate to charge a fee for registration of a reservoir at phase 1 as the majority of information is already held by the Agency on the register and simply needs confirmation.

## **4.2 Monitoring, Supervision & Inspections**

### **4.2.1 Guidance on Supervision**

Defra does not intend to issue statutory guidance on the supervision of reservoirs. We consider that the legislation is sufficient taken with non-statutory guidance produced in collaboration with the Institution of Civil Engineers (ICE) in the form of “A guide to the Reservoirs Act 1975”. This guidance document is being revised by a working group at the ICE at the request of Ministers to reflect the amendments to the legislation and to reflect any changes in practice since its original publication in 2000. It should not be forgotten that civil engineers qualified under the 1975 Act are expected to demonstrate high professional standards to maintain this qualification.

### **4.2.2 High Risk Reservoirs: Inspections**

Defra intends to leave the required inspection period for high-risk reservoirs at a maximum of 10 years or a shorter period if recommended in the inspecting engineers report on the last inspection.

The following scenarios will require compulsory inspections of high-risk reservoirs within the 10 year interval:

- Constructing a new or altering an existing reservoir. On constructing or altering a reservoir, an inspection must be carried out no more than two years from the date of any final certificate being issued;
- Alterations. Alterations to a reservoir which do not increase or decrease its capacity but could affect its safety and which have not been designed and supervised by a qualified civil engineer must be inspected within six months of completion of the alteration. Whilst a qualified civil engineer does not have to be employed for alterations that do not increase or decrease the capacity of a large raised reservoir (except where required in the interests of safety) an inspection needs to be carried out to determine whether or not the alteration might affect safety.
- Supervising engineer recommendation. If a supervising engineer is concerned about the condition of a reservoir he/she may recommend an inspection. Such recommendation will require an inspection to be carried out as a matter of urgency.

- When recommended in the report of an inspecting engineer.

We also intend to require an inspection within two years of the designation of a reservoir as 'high-risk' where there has been no previous inspection under the 1975 Act. There will be clarification that an inspection is of the whole of a reservoir.

## **4.3 Construction, Alteration, Abandonment & Discontinuance**

### **4.3.1 Abandonment and Bringing Back into Use**

At phase 1, Defra will not be making regulations about what is and is not to be treated as abandonment of use of a large raised reservoir as a reservoir, and bringing a large raised reservoir back into use as a reservoir.

## **4.4 Panels of Engineers and Engineer Reports**

### **4.4.1 Panels of Engineers**

The regulations governing applications to the panels of engineers will be updated to reflect recent experience with the application process and advice from the Reservoir Committee of the ICE that provides advice to the Secretary of State on applicants.

Defra and the Welsh Government will set up joint panels of engineers, for the time being reflecting the current panels.

### **4.4.2 Incident Reporting**

When the safety of a large raised reservoir has been, or could have been compromised, it is vital that the enforcement authority is made aware of such incidents. Defra intends to impose a duty on an Undertaker to report any incidents which have, or could have affected the safety of a large raised reservoir in England to the Environment Agency. The regulations will set out when reports are required and the scope of their content. The reporting requirement will be satisfied once the Agency has accepted the report. The Agency already has guidance on the reporting of incidents at reservoirs.

We did not take up the suggestion to restrict the requirement to report incidents only to undertakers of high risk reservoirs. The objective of this measure is to learn from the full range of incidents at all large raised reservoirs so maximising the experience available to inform the design, construction and management of reservoirs generally.

## 4.5 Appeals

### 4.5.1 Tribunals

Defra intends to vest the power to hear all appeals under the 1975 Act in the First Tier Tribunal and the General Regulatory Chamber Rules will be used for handling the appeals. There were no significant objections to this proposal from consultees.

### 4.5.2 Referee Rules

Defra will amend the current referee rules to extend the time allowed for an undertaker to appoint a referee. This responds to a small number of consultee responses indicating that the current time available is not adequate for less experienced undertakers. We were not convinced that further time extensions were necessary given the minimal number of cases where a referee has been appointed. However, this may need to be revisited at phase 2 if the capacity threshold is reduced resulting in a significant increase in the number of undertakers inexperienced in the workings of the 1975 Act.

## 4.6 Criminal Sanctions

### 4.6.1 New Criminal Liabilities and Civil Sanctions

Defra intends to commence all of the new provisions with respect to criminal liabilities in phase 1, which means that they will come into force during August 2013. There was the suggestion that the new sanctions related to maintenance should not be commenced, as there was scope for over-zealous maintenance requirements to be imposed. We have decided that the provisions related to maintenance should be taken forward to ensure that there are appropriate enforcement provisions to ensure that necessary maintenance is carried out. There should be advice to practitioners on how to interpret the requirements with respect to maintenance in the revised "A guide to the reservoirs Act 1975". Also, we consider that there are adequate safeguards for undertakers through the referee and appeals processes.

Defra does not propose at phase 1 to implement Civil Sanctions as an enforcement tool for reservoirs legislation either as an alternative to criminal sanctions or to supplement criminal sanctions. This will be reconsidered as part of phase 2, subject to general Government policy on Civil Sanctions.

## 4.7 Expenses & Charging

### 4.7.1 Expenses

Defra is committed to implementing the requirement that the Environment Agency be able to recover its reasonable expenses in connection with the consultation of an engineer

when exercising its enforcement powers under Section 8 (construction and enlargement), Section 9 (re-use of abandoned reservoirs), Section 10 (inspection) and Section 14 (abandonment) of the 1975 Act. Such expenses are only incurred on the failure of an undertaker to carry out duties under the 1975 Act. The consultation did not provide any compelling reasons to delay implementation of this measure.

#### **4.7.2 Arrangement for Civil Protection**

Given the likely burdens on undertakers, many of whom may be small businesses, Defra intends to maintain the position set out in its response to the consultation on the Draft Flood and Water Management Bill that the costs of preparing off site emergency plans should not be met by reservoir undertakers at this time. No decision has been made as to whether any funding will be made available to local authorities in the future for those high risk reservoirs identified by the Environment Agency's risk designation process and those captured if the minimum capacity threshold is reduced. The majority of consultees supported the view that undertakers should not be charged fees.

### **4.8 Other Matters**

#### **4.8.1 Further Amendments**

Whilst there were several recommendations for further changes to the 1975 Act, we do not have the powers under the current legislation to implement them.

#### **4.8.2 Regulatory Impact Assessment**

The provision for review of amendments to the 1975 Act by schedule 4 of the 2010 Act only become effective once all provisions have been implemented. At present, it seems unlikely that all provisions will be implemented that are required to trigger the review process. Nevertheless, Defra plans to carry out a review of the impact of all amendments that are made within two years of the completion of all high risk designations of those reservoirs that fall under the 1975 Act after the implementation of phase 2. For the purposes of this commitment, the timescale will be set from the time the Environment Agency confirms a high risk designation, rather than from the time of completion of any subsequent appeal.

#### **4.8.3 Cross Border England-Scotland Reservoirs**

This measure was commenced by SI 2011/2204 on 1 October 2011. No Orders setting out whether the "English regime" or the "Scottish regime" should apply are required for the time being as there are no cross-border reservoirs on the England-Scotland border at present.