



Otago Regional Council

Building Act 2004

**POLICY ON DANGEROUS DAMS,
EARTHQUAKE-PRONE DAMS AND
FLOOD-PRONE DAMS**

September 2011

Document ID. A371852

1. Introduction

This document describes the policy on dangerous dams, earthquake-prone dams and flood-prone dams adopted by the Otago Regional Council (ORC) in accordance with Sections 161 and 162 of the Building Act 2004. The policy sets out the approach and priorities the ORC will take in performing its functions in relation to dangerous dams, earthquake-prone dams and flood-prone dams in Otago, and how the policy will apply to heritage dams.

2. Application of this policy

This policy is applicable to dams as defined under Section 7 of the Building Act, everywhere in Otago and irrespective of the age and intended life of the dam. Where allowed under the Building Act it applies to dams that are not defined as large dams under Section 7 of the Act.

If a dam does not have an accepted potential impact classification (PIC) then the ORC will at its discretion make a classification and adopt that classification for the purposes of giving effect to this policy.

The parts of this policy that rely on regulations promulgated under Section 402 of the Building Act will come into force three months after the regulations that give full effect to Section 153 of the Act have been gazetted.

This policy will be reviewed every five years or earlier as required. Given that the regulations prescribing standards and criteria for dangerous dams, earthquake-prone dams and flood-prone dams were not in place when this policy was last amended, the ORC may decide to review this policy should the regulations ever be gazetted.

3. Purpose

The purpose of this policy is to.

1. Minimise the safety risks of dams in Otago, and;
2. Comply with the statutory provisions of the Building Act regarding the requirement for the ORC to have a policy on its functions relating to dangerous dams, earthquake-prone dams and flood-prone dams.

4. Principles

The ORC will apply the following principles to the exercise of its dangerous dams, earthquake-prone dams and flood-prone dams functions under the Building Act.

1. The state of danger, earthquake-proneness and flood-proneness (as defined in the Building Act and supporting regulations) shall be known for all large dams and that knowledge shall be readily available to all persons affected by the safety risks of a dangerous, earthquake-prone or flood-prone dam;

2. Dam owners have the responsibility for identifying, monitoring and reporting the danger, earthquake-proneness and flood-proneness of their dams and for reducing or removing danger, earthquake-proneness and flood-proneness in a timely manner, and;
3. Without overriding the paramount aim of protecting community safety, when deciding what actions must be taken in respect of a dangerous dam, earthquake-prone dam or flood-prone dam, the ORC will take into account social, economic and environmental impacts that may arise from those actions.

5. ORC's approach to performing these functions

5.1 Publishing information on dam status

The ORC will keep a public register of all dams, recording the dangerous, earthquake-prone and flood-prone status of each large dam and its history in that regard.

5.2 Working with dam owners

The ORC expects that owners of all large dams will know whether their dam is dangerous, earthquake-prone or flood-prone and that they will take the necessary steps in a timely manner to acquire and update that knowledge and to act on it responsibly. The ORC expects that dam owners will promptly inform the ORC if they become aware that their dam is or is suspected to be dangerous, earthquake-prone or flood-prone.

The ORC will work with the owners of identified dangerous dams, earthquake-prone dams and flood-prone dams to develop an action plan (with timeframes) with the common goal of reducing the risks to the safety of the dam and the community associated with the dam in a way that recognises the social and economic needs of the community. It is not realistic to specify a timeframe within this policy for achieving this goal because practicability will be dictated by the circumstances surrounding each case (e.g. economic welfare, ability to manage the interim risk, etc). When setting a timeframe for action, the ORC will consider the circumstances giving rise to the need for action, the nature of the risk (including the likelihood and immediacy of any threat), the degree of risk exposure, the potential impact classification (PIC) of the dam, whether satisfactory steps can be taken to manage the interim risk and the priorities established in this policy (community safety, economic welfare, heritage values).

5.3 Directing and taking action

The ORC will intervene if the owner of any dam is not acting in accordance with an agreed action plan, or does not have an agreed action plan, or considers that the agreed action plan requires review or amendment but the owner has not agreed a timeframe for doing so. This will apply to dams of all sizes.

Before exercising any of its powers under Sections 154 to 159 of the Building Act, the ORC will seek to discuss options for action with the owner of the dam, with a view to obtaining from the owner a mutually acceptable formal proposal for reducing or removing the danger. Acceptable actions by the owner may include, but are not limited to, one or more of the following;

- Operational changes such as reducing the volume of impounded fluid or completely emptying the reservoir;
- Reconfiguring an existing spillway or creating a new or supplementary spillway so as to limit the maximum impounded volume and/or to safely route flood flows;
- Increased surveillance and monitoring;
- Development of emergency preparedness and response plans;
- Review of the dam safety assurance programme;
- Implementing measures to enable controlled, rapid emptying of the impounded fluid;
- Measures downstream of the dam to mitigate the impact of dam failure;
- Physical works including reconstruction or partial demolition of the dam;
- Decommissioning and/or removal of the dam.

If appropriate, the ORC will notify potentially affected communities downstream of a dangerous, earthquake-prone or flood-prone dam, taking care to ensure the degree of risk exposure is communicated appropriately.

In deciding whether to exercise its powers under Section 157 of the Act, the ORC will have regard to the ability of the owner or the ORC to effectively pre-empt failure of the dam and the likelihood and consequences of the situation becoming rapidly uncontrollable.

In a situation in which the ORC considers there is immediate danger the ORC will give notice to those persons likely to be immediately affected. The ORC may also attach a Notice to the dam or nearby that warns people not to approach the structure; and / or erect a hoarding or a fence to prevent people approaching the structure. When appropriate, and in a timely manner, advice of the reduction or removal of the danger will be sent to those persons previously notified of the danger.

The ORC will require under Section 146 of the Building Act that the owner reviews their dam safety assurance programme if their dam is or may be earthquake-prone or flood-prone and the ORC has reason to believe that the current programme may no longer be appropriate.

6. ORC's priorities in performing these functions

The dangerous dams provisions of the Building Act will be used by the ORC as a mechanism to remedy an unsatisfactory situation that has developed in Otago, rather than a means of responding to "emergencies" that arise in the future. The ORC's approach to dangerous dams is therefore tailored toward achieving a reduction in the pre-existing risk whilst still being able to deal with risks that emerge in the future.

The circumstances giving rise to the dangerous, earthquake-prone or flood-prone state of a dam will be used to determine the ORC's priorities for taking action and the requirement for the owner to reduce or remove danger or to review the Dam Safety

Assurance Programme (Section 146 of the Building Act). The priorities will be as follows in which 1 is the highest priority and 5 is the lowest priority.

1. Dams that upon promulgation of the regulations are dangerous and/or earthquake-prone and/or flood-prone due to their pre-existing condition (and not an actual change in risk), and do not have a Dam Safety Assurance Programme (DSAP) that complies with the Building Act regulations;
2. Dams that are dangerous and/or earthquake-prone and/or flood-prone due to their pre-existing condition (and not an actual change in risk), and do have a Dam Safety Assurance Programme that complies with the Building Act regulations;
3. Dams that due to deterioration or damage (e.g. reduction in structural integrity) arising from aging and weathering, floods, seismic activity, landslides or similar, or identification of previously unobserved defects, are regarded as dangerous and/or earthquake-prone and/or flood-prone (i.e. a change in likelihood of failure);
4. Dams that because of new or improved information (or their exposure or their setting e.g. change in assessment of what constitutes a “moderate flood” or “moderate earthquake” for that site) are regarded as dangerous and/or earthquake-prone and/or flood-prone;
5. Dams that due to the potential impact classification for the dam increasing from low to medium or high or from medium to high are regarded as dangerous and/or earthquake-prone and/or flood-prone (i.e. a change in consequence of failure).

In addition the ORC will prioritise the requirement to reduce or remove danger as follows:

- | | |
|------------------|--|
| First priority: | community and downstream property safety |
| Second priority: | economic welfare |
| Third priority: | heritage values |

7. Application to heritage dams

For the purposes of this policy, a heritage dam (including associated structures) includes all dams listed as a heritage resource in the relevant territorial authority’s District Plan and/or registered by the New Zealand Historic Places Trust (NZHPT). Section 4(2)(1) of the Building Act recognises the “need to facilitate the preservation of buildings of significant cultural, historical, or heritage value” .

The ORC recognises the need to retain heritage fabric, but also the need to reduce or remove any danger posed by a heritage dam which has been classified as dangerous. When considering heritage dams under this policy, account will be taken of the need to facilitate the preservation of the fabric/facade of dams with significant heritage value.

When dealing with heritage dangerous dams, the ORC will seek advice from the NZHPT and the relevant territorial authority (if appropriate) before any actions are undertaken by the regional authority under sections 153 – 160 of the Act. The ORC may engage suitably qualified professionals with heritage expertise to advise and recommend actions. Copies of all served notices for heritage dangerous dams, earthquake-prone dams and flood-prone dams will be provided to the NZHPT.

The ORC will record the heritage listing of all dangerous, earthquake-prone and flood-prone dams it is made aware of in its register of dams and supply this information to the relevant Territorial Authority for inclusion on any relevant Land Information Memoranda.
