

Building Act 2004

Dangerous Dams Policy 2014 (Including earthquake-prone and flood-prone dams)



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1. Introduction and Policy Context

This document sets out the Dangerous Dams Policy to be adopted by Horizons Regional Council (Horizons) in accordance with the Building Act 2004. This policy will set out the approach that Horizons will take in exercising its powers to assess and require remedial work to be undertaken on dangerous, earthquake-prone and flood-prone dams. The purpose of this policy is to help prevent the uncontrolled release of any dam and to ensure that deficiencies in earthquake-prone and flood-prone dams are addressed.

For the purposes of this policy, the term 'dam' has the same meaning as defined in section 7 of the Building Act 2004. The full text of the definitions state:

Dam -

- a. *means an artificial barrier, and its appurtenant structures, that –*
 - (i) *is constructed to hold back water or other fluid under constant pressure so as to form a reservoir; and*
 - (ii) *is used for the storage, control, or diversion of water or other fluid; and*
- b. *includes –*
 - (i) *a flood control dam; and*
 - (ii) *a natural feature that has been significantly modified to function as a dam; and*
 - (iii) *a canal; but*
- c. *does not include a stop bank designed to control floodwaters.*

1.1 Purpose of the Building Act

The purpose of the Building Act 2004 is to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings, to ensure that:

- a. people who use buildings can do so safely and without endangering their health; and
- b. buildings have attributes that contribute appropriately to the health, physical independence and well-being of the people who use them; and
- c. people who use a building can escape from the building if it is on fire; and
- d. buildings are designed, constructed, and able to be used in ways that promote sustainable development.

In this context, structures that meet the definition of a dam under this Act are deemed to be buildings.

1.2 Dangerous Dams Policy

Section 161 of the Building Act 2004 (the Act) requires Regional Authorities to adopt a policy on dangerous dams and to review that policy at intervals of not more than five years. Section 162 of the Act requires that the review must be carried out in accordance with the special consultative procedure in section 83 of the Local Government Act 2002.

Horizons adopted its first dangerous dams policy in October 2006. This Policy was reviewed again in July 2011, but placed on hold awaiting confirmation of the Building (Dam Safety) Regulations 2008 by the Ministry of Business, Innovation and Employment.

Amendments to the Act in 2008 introduced two additional categories of dam under the dangerous dam's category; these being earthquake-prone and flood-prone dams. Section 161 of the Act now requires Horizons to also develop policy on these categories of dam as part of its dangerous dam's policy review. This policy therefore addresses dangerous dams, earthquake-prone and flood-prone dams.

The Building (Dam Safety) Regulations 2008, that prescribe the criteria for dam classification and dam safety, come into force on 1 July 2014. The regulations that prescribe the standards and criteria for determining moderate and threshold event earthquakes and floods in section 153 and 153A of the Act, are to be finalised by the Ministry of Business, Innovation and Employment prior to 1 July 2014. This policy is therefore based on those draft definitions that are currently before Cabinet for approval. The definitions in this document are therefore subject to change.

These standards and criteria are key components of the dangerous dams, earthquake-prone and flood-prone dam's policy.

The Dangerous Dams Policy 2014 will become operative three months after the Building (Dam Safety) Regulations 2008 come into force, or when regulations prescribing the criteria and standards to determine dangerous, earthquake-prone or flood-prone dams are gazetted, if not gazetted prior.

1.3 Measurement of Dams

The Building Amendment Act 2013 added new section 133B to the Building Act 2013 which stipulates the way that the height of a dam is to be measured, as follows:

133B Measurement of dams

For the purposes of this Act and any regulations made under it, the height of a dam is the vertical distance from the crest of the dam and must be measured, -

- (a) in the case of a dam across a stream, from the natural bed of the stream at the lowest downstream outside limit of the dam; and*
- (b) in the case of a dam not across a stream, from the lowest elevation at the outside limit of the dam; and*
- (c) in the case of a canal, from the invert of the canal.*

To ensure consistency in the way that dams are measured, the "crest" of the dam has also been defined through the Building Amendment Act 2013, as follows:

"Crest, in relation to a dam, means the uppermost surface of a dam, not taking into account any camber allowed for settlement, or any curbs, parapets, guard rails, or other structures that are not part of the water-retaining structure; and for the avoidance of doubt, any freeboard is part of the water-retaining structure for the purposes of this definition."

1.4 Dams Subject to the Dam Safety Scheme

New section 133A of the Building Amendment Act 2013 specifies those dams that the dam safety scheme provisions apply to as follows:

133A Dams to which subpart 7 provisions apply

- 1 Sections 133B and 157 to 159 apply to all dams.
- 2 The other provisions in this subpart apply only to classifiable and referable dams

The dangerous dam, earthquake-prone and flood-prone policy will therefore only apply to '**classifiable and referable dams**' that are classified as having a high or medium potential impact. The definitions of classifiable and referable dams sit within the Building (Dam Safety) Regulations rather than the Building Act itself.

This means that the owners of dams above specified height and volume thresholds will be required to categorise their dams as either a classifiable or referable dam and have responsibilities as a dam owner under the dam safety scheme.

The definition of a 'classifiable dam' and a 'referable dam' are still being finalised as part of the review of the Building (Dam Safety) Regulations. The draft definitions that are currently before Cabinet are as follows:

Classifiable dam means a dam which has either:

- (a) a height of 8 or more metres and holds 20,000 or more cubic metres volume of water or other fluid; or
- (b) a height of 4 or more metres and holds 100,000 or more cubic metres volume of water or other fluid.

Referable dam means a dam which:

- (a) has a height of 4 or more metres or holds 20,000 or more cubic metres volume of water or other fluid; and
- (b) is not a classifiable dam.

Note: Any changes or amendments to the definitions in the Building (Dam Safety) Regulations will not require this policy to be reviewed. The new definitions will simply replace the draft definitions.

1.5 Definition of Dangerous Dam

The definition of what constitutes a dangerous dam is set out in section 153 of the Act.

Section 153 - A dam is dangerous for the purposes of the Act if the dam

- (a) is a high potential impact dam or medium potential impact dam; and
- (b) is likely to fail -
 - (i) in the ordinary course of events; or
 - (ii) in a moderate earthquake (as defined in regulations); or
 - (iii) in a moderate flood (as defined in regulations).

The Building (Dam Safety) Regulations 2008 prescribe the process for determining the potential impact classification of classifiable and referable dams.

1.6 Definition of Earthquake-Prone and Flood-Prone Dams

Section 153A of the Act sets out the definitions for earthquake-prone and flood-prone dams, as follows:

- (1) A dam is an earthquake-prone dam for the purposes of this Act if the dam—
 - (a) is a high potential impact dam or a medium potential impact dam; and
 - (b) is likely to fail in an earthquake threshold event (as defined in the regulations).
- (2) A dam is a flood-prone dam for the purposes of this Act if the dam—
 - (a) is a high potential impact dam or a medium potential impact dam; and
 - (b) is likely to fail in a flood threshold event (as defined in the regulations).

The regulations which define the earthquake and flood threshold events for the purpose of identifying earthquake-prone and flood-prone dams are still being finalised. The draft definitions currently before Cabinet for approval are as follows:

Moderate earthquake means an earthquake that would generate ground shaking at the site of the dam that would occur with a 1 in 50 annual exceedance probability.

Note: the term 'moderate earthquake' is already defined in the Act in relation to earthquake-prone buildings and is based on the principles set out in New Zealand Standard NZS1170:2004. Given the consequences of an uncontrolled release of a reservoir, the performance requirements of dams are more stringent.

Moderate flood means a flood in which the amount of water flowing into the reservoir has a 1 in 50 annual exceedance probability.

Note: the proposed definition does not distinguish between natural floods and man-made floods (such as the controlled discharge of an upstream dam, which increases the flow into a downstream reservoir to flood-level).

1.7 Policy Development and Legislative Requirements

In reviewing and adopting the dangerous dams' policy and developing a policy on earthquake-prone and flood-prone dams, Horizons is required to follow the special consultative procedure set out in section 83 of the Local Government Act 2002.

Section 161 requires the policy to state:

- (1) The approach that the regional authority will take in performing its functions under this Part; and
- (2) The regional authority's priorities in performing those functions; and
- (3) How the policy will apply to heritage dams.

2. Policy Approach – Principles and Objectives

The purpose of the Act is to provide for the regulation of building work, and in relation to dams, establish a dam safety scheme. The intent of the Act is to improve control and encourage better practice in the construction of buildings (including dams) and to minimise the potential risks of dam failure to people, property, infrastructure and the

environment. An underlying principle of the Building Act 2004 is that owners of classifiable and referable dams are responsible for identifying, monitoring and reporting the danger, earthquake-proneness and flood-proneness of their dams and for reducing or removing such danger or risk in a timely manner.

The dangerous, earthquake-prone and flood-prone dam provisions of the Act give Regional Authorities powers and responsibilities to act in situations where a dam is considered to be dangerous, and the ability to request the owner of an earthquake-prone and/or flood-prone dam to review their Dam Safety Assurance Programme.

The Building Amendment Act 2013 introduced new provisions which clarify responsibilities and liabilities with respect to dangerous dams. New Section 135A requires the engineer certifying the dam classification certificate, dam safety assurance programme or annual dam compliance certificate to notify the regional authority and the owner of a dam if he or she believes the dam is dangerous.

The Building Amendment Act 2013 also clarified dam owner responsibilities by inserting new section 153B to the Building Act 2004. This section of the Act requires the owner of a dam who has reasonable grounds for believing that the dam is, or has become, dangerous to immediately notify the regional authority in whose region the dam is situated.

Without overriding the paramount aim of protecting community safety when deciding what actions must be undertaken in respect of a dangerous, earthquake-prone or flood-prone dam, Horizons will take into account social, economic and environmental impacts that may arise from those actions.

2.1 Identification of Dams that may be Dangerous, Earthquake-Prone or Flood-Prone

There is a continuum of approaches that Regional Authorities can adopt for the identification of dams that may be dangerous, earthquake-prone or flood-prone. These range from a totally passive approach where the Regional Authority acts only when a potentially dangerous, earthquake-prone or flood-prone dam has been brought to its attention, to the proactive comprehensive inspection of all potentially dangerous, earthquake-prone or flood-prone dams in its region.

Horizons expects that owners of all classifiable and referable dam owners will know whether their dam is dangerous, earthquake-prone or flood-prone as part of their required responsibilities under the Building Act (Dam Safety) Regulations 2008. The Building Amendment Act 2013 has confirmed that it is the dam owners' responsibility to inform Horizons immediately upon becoming aware that their dam is or is suspected to be dangerous, earthquake-prone or flood-prone.

To this end Horizons will compile a list of potentially dangerous, earthquake-prone or flood-prone dams over time in response to information received from dam owners and engineers acting on behalf of dam owners under the Building Act (Dam Safety) Regulations 2008 requirements or in response to complaints received about a dam or through work related activities, such as while carrying out functions under the Resource Management Act 1991.

Newly constructed classifiable and referable dams that have a medium or high potential impact classification will be subject to the policy once their Dam Safety Assurance Programme has been approved under section 143 of the Act.

2.2 Assessment of Identified Dams

Where a dam has been identified under section 2.1 above, Horizons will, without delay, undertake an assessment of the risk in consultation with the dam owner, and if necessary undertake further assessment of the dam using technical specialists to verify its condition.

A list of certified dangerous, earthquake-prone or flood-prone dams will be collated according to the results of the assessments carried out by owners and recognised engineers under the Building (Dam Safety) Regulations requirements. This list will categorise the identified dangerous, earthquake-prone or flood-prone dams according to the following:

- Category 1: high potential impact dams.
- Category 2: medium potential impact dams.
- Category 3: high or medium potential impact dams with a heritage classification under the local territorial authority's District Plan or Historic Places Trust register.

If appropriate, Horizons will notify potentially affected communities downstream of a dangerous, earthquake-prone or flood-prone dam, ensuring the degree of risk exposure is communicated appropriately.

2.2.1 Working with Dam Owners

If it is verified that the dam is dangerous, earthquake-prone or flood-prone, Horizons will work with the dam owner to develop an action plan (within timeframes) with the common goal of reducing 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.

Dam owners who have had their classifiable or referable dam assessed as dangerous will be advised in writing by Horizons of the actions and timeframes required to reduce the risk.

Horizons will request that the owners of earthquake-prone or flood-prone dams review their Dam Safety Assurance Programme. This review should include specific actions that are required to be taken to reduce or eliminate the risk of dam failure during a moderate earthquake and/or moderate flood event.

It is not realistic to specify a timeframe within this policy for achieving this goal as practicability will be dictated by the circumstances surrounding each case. When setting a timeframe for action, Horizons will consider the circumstances giving rise to the need for action, the degree of risk presented, the potential impact classification 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).

2.2.2 Intervention

Horizons will intervene if the owner of any dangerous 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.

Before exercising any of its powers under sections 154 to 159 of the Act, Horizons will give the owner of the dangerous dam at least 10 days written notice of its intention to intervene. A copy of the notice will also be given to those parties specified in Section 155(2) of the Act, including the occupier of the property on which the dam is located; every person with an interest in the land; any statutory authority; and the New Zealand Historic Places Trust, if the dam is a heritage dam.

Horizons 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. The regional authority will seek to recover all actual and reasonable costs from the dam owner.

2.3 Dispute of Dangerous, Earthquake-Prone or Flood-Prone Dam Classification

Should the owner of a classifiable or referable dam dispute the classification given to their dam of dangerous, earthquake-prone, or flood-prone, the dam owner may apply for a 'Determination' pursuant to section 177 of the Act from the Chief Executive of the Department of Building and Housing. Any costs associated with an application by the dam owner for Determination under section 177 of the Act will be borne by the dam owner.

The Chief Executive's Determination is binding on the dam owner and Horizons.

2.4 Prioritisation

Under Section 161 this policy must contain the Regional Authority's priorities in performing its functions in relation to dangerous, earthquake-prone and flood-prone dams.

Horizons precedence when dealing with dangerous, earthquake-prone and flood-prone dams will be:

- firstly to ensure community safety at all times
- secondly to have regard to economic welfare; and
- thirdly to have regard to heritage values.

In conjunction with the above the table below sets out Horizons priorities for dealing with dams that have been assessed as being dangerous, earthquake-prone or flood-prone.

	Dangerous Dam	Earthquake-Prone	Flood-Prone
High Potential Impact	High Priority	Medium Priority	Medium Priority
Medium Potential Impact	High Priority	Low Priority	Low Priority

2.5 Taking Action

Using the priorities above, Horizons will undertake the following actions with respect to dangerous, earthquake-prone and flood-prone dams:

High – Horizons will invoke sections 154 – 156 of the Act to remove or reduce the danger.

Medium – Horizons will work with the dam owner to establish a formal programme of work to remove or reduce the danger and will require the dam owner to undertake a review of their dam safety programme (section 146(2)(b)).

Low – Horizons will require the dam owner to review their dam safety assurance programme (section 146(2)(b)).

However, if at any time, Horizons determines that the dam poses immediate danger to the safety of persons, property or the environment, Horizons will take action under section 157 to 159 of the Act. Horizons will make every effort to contact and liaise with the dam owner prior to invoking these provisions.

2.6 Action Requiring Consent(s)

When building consents or resource consents are necessary for action to reduce or remove danger required:

- in a notice served by council; or
- in a formal proposal supplied by the dam owner;

Horizons will expedite the required consents(s) where practicable.

2.7 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 those registered by the New Zealand Historic Places Trust (NZHPT).

Horizons recognises the need to retain heritage fabric, but also the need to reduce or remove the danger posed by a dam to mitigate the risk of loss of life or damage to property in the event of a collapse. When considering heritage dams under this policy, account will be taken of the need to facilitate the preservation of dams with significant cultural, historical, or heritage value.

When dealing with heritage dams, Horizons will seek advice from the NZHPT and the relevant territorial authority (if appropriate) before any actions are undertaken by the regional authority under sections 154 – 160 of the Act. Horizons may engage suitably qualified professionals with heritage expertise to advise and recommend actions. Copies of all served notices will be provided to the NZHPT.

2.8 Recording a Dams Status

Horizons is required to maintain a register of classifiable and referable dams under section 151 of the Act, regardless of whether the dam is identified as dangerous, earthquake-prone or flood-prone.

The status of a dam (dangerous, earthquake-prone, or flood-prone) will be recorded on the register, as will the dams heritage status.

Where improvements are made to a dam and Horizons is satisfied that the dam is no longer, dangerous, earthquake-prone or flood-prone, the register will be updated to reflect the new status and the owner advised in writing.

APPENDIX 1 – Relevant Legislation

BUILDING ACT 2004 and BUILDING AMENDMENT ACT 2013– KEY SECTIONS

3 Purpose

The purpose of this Act is to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings, to ensure that—

- a) people who use buildings can do so safely and without endangering their health; and
- b) buildings have attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them; and
- c) people who use a building can escape from the building if it is on fire; and
- d) buildings are designed, constructed, and able to be used in ways that promote sustainable development.

134 When owner must classify dam

The owner of a dam must classify the dam in accordance with section 134B if –

- a) The dam is a classifiable dam; or
- b) The dam is a referable dam and the regional authority in whose region the dam is situated has required the owner to classify it.

134A Regional Authority may require owner to classify referable dam

- (1) A regional authority may by written notice require the owner of a referable dam to classify it in accordance with section 134B if the dam is located within a designated area.
- (2) In subsection (1), **designated area** means an area, or a proximity to an area of feature, designated or described by regulations made under this Act.

134B Method of classification

- (1) An owner of a dam to whom section 134 applies must classify the dam according to the potential impact of a failure of the dam on persons, property and the environment.
- (2) In classifying a dam, the owner must –
 - a. apply the prescribed criteria and standards for dam safety; and
 - b. give the dam 1 of the following classifications;
 - (i) low potential impact; or
 - (ii) medium potential impact; or
 - (iii) high potential impact; and
 - c. submit the classification of the dam to a recognised engineer for audit.
- (3) For the purposes of this section, the prescribed criteria and standards for dam safety may incorporate, in accordance with sections 405 to 413, the standards, requirements, or recommended practices of national or international organisations that are concerned with the operation and safety of dams.

134BA Classification of dams that are canals

A dam that is a canal that must be classified under section 134B may have different classifications for different sections of the canal and in that case each of

those sections must be treated as a separate dam for the purposes of sections 134 to 139.

134C Offence of failing to classify dam

A person to whom section 134 applies who fails to classify the dam in accordance with section 134B commits an offence and is liable on conviction to a fine not exceeding \$20,000.

135 Owner must provide classification of, and certificate for, dam to regional authority

- (1) An owner of a dam must provide the regional authority whose region the dam is situated with –
 - a. the classification given by the owner to the dam; and
 - b. a certificate from an engineer that –
 - (i) states that the classification of the dam accords with the prescribed criteria and standards for dam safety; and
 - (ii) states that the engineer is a recognised engineer; and
 - (iii) has attached to it evidence that the engineer is a recognised engineer.
- (2) The owner must comply with subsection (1) no later than –
 - a. if the dam was commissioned before commencement of this Part, 3 months after the regulations prescribing the criteria and standards for dam safety come into force; or
 - b. if the dam is commissioned after the commencement of this Part, 3 months after the date on which the dam was commissioned.

135A Certifying engineer must notify regional authority and owner if dam dangerous

- (1) An engineer engaged to provide a certificate for the purposes of section 135(1)(b), 142(1)(b), or 150(2)(f) must notify the regional authority and the owner of the dam if he or she believes that the dam is dangerous.
- (2) The notice must be –
 - a. In writing; and
 - b. Given within 5 working days after the engineer forms the belief in question.
- (3) Nothing in subsection (1) requires an engineer to act outside the terms of his or her engagement by investigating whether the dam is dangerous or not and a breach of the duty in subsection (1) does not give rise to any civil liability in damages.

136 Regional authority must decide whether to approve or refuse dam classification

- (1) A regional authority must, as soon as practicable after receiving a classification given by an owner to a dam under section 135, give written notice to the owner as to whether the regional authority –
 - a. approves the classification; or
 - b. refuses to approve the classification.
- (2) A regional authority may refuse to approve a classification only if the regional authority is satisfied, on reasonable grounds, that the engineer who provided the certificate referred to in section 135(1)(b) is not a recognised engineer.

139 Owner must review dam classification

- (1) An owner of a dam must review the dam's classification –

- a. within 5 years after the regional approves, or is deemed to approve, the classification; and
 - b. after the first review, at intervals of not more than 5 years.
- (2) The owner must also review the dam's classification if, at any time –
 - a. any building work that requires a building consent is carried out on the dam; and
 - b. the building work results, or could result, in a change to the potential impact of a failure of the dam on persons, property, or the environment.
- (3) Sections 135 to 138 apply, with all necessary modifications, to a classification that is given to a dam following a review under this section.

140 Requirement for dam safety assurance programme

- (1) This section applies to an owner of a dam that has been classified under section 134B, or reclassified under section 139, as –
 - a. a medium potential impact dam; or
 - b. a high potential impact dam.
- (2) An owner to whom this section applies must –
 - a. prepare, or arrange for the preparation of, a dam safety assurance programme for the dam; and
 - b. submit the dam safety assurance programme to a recognised engineer for audit.
- (3) A person commits an offence if the person fails to comply with subsection (2).
- (4) A person who commits an offence under this section is liable to a fine not exceeding \$20,000.
- (5) To avoid doubt, a person may do both the following in respect of the same dam if the person is a recognised engineer:
 - a. prepare the dam safety assurance programme for that dam; and
 - b. audit the dam safety assurance programme for that dam.

141 Content of dam safety assurance programme

A dam safety assurance programme must –

- a) be in the prescribed form; and
- b) meet the prescribed criteria and standard for dam safety.

142 Owner must provide dam safety assurance programme to regional authority

- (1) An owner of a dam to whom section 140 applies must provide the regional authority in whose region the dam is situated with –
 - a. the owner's dam safety assurance programme; and
 - b. a certificate from an engineer that –
 - (i) states that the dam safety assurance programme meets the prescribed criteria and standards for dam safety; and
 - (ia) states that the dam safety assurance programme contains a full list of the dam's appurtenant structures as determined by the engineer; and
 - (ii) States that he engineer is a recognised engineer; and
 - (iii) Has attached to it evidence that the engineer is a recognised engineer.
- (2) The owner must comply with subsection (1) no later than, -

- a. If the dam has been classified as a high potential impact dam, 1 year after the date on which the regional authority approves, or is deemed to approve, that classification; or
- b. If the dam has been classified as a medium potential impact dam, 2 years after the date on which the regional authority approves, or is deemed to approve, that classification.

146 Review of dam safety assurance programme

- (1) An owner of a dam to whom section 140 applies must review the dam safety assurance programme of a dam,—
 - a. in the case of a dam that has been classified as a high potential impact dam,—
 - (i) within 5 years after the date on which the regional authority approves, or is deemed to approve, the dam safety assurance programme; and
 - (ii) after the first review, at intervals of not more than 5 years; and
 - b. in the case of a dam that has been classified as a medium potential impact dam,—
 - (i) within 10 years after the date on which the regional authority approves, or is deemed to approve, the dam safety assurance programme; and
 - (ii) After the first review, at intervals of not more than 7 years.
- (2) The owner must also review the dam safety assurance programme—
 - a. if, at any time,—
 - (i) building work that requires a building consent is carried out on the dam; and
 - (ii) the building work results, or could result, in a change to the potential impact of the dam on persons, property, or the environment; or
 - b. when requested by the regional authority to do so, if the dam is an earthquake-prone dam or a flood-prone dam.
- (3) Sections 142 and 143 apply, with all necessary modifications, to a reviewed dam safety assurance programme.

153 Meaning of dangerous dam

A dam is dangerous for the purposes of this Act if the dam—

- a) is a high potential impact dam or a medium potential impact dam; and
- b) is likely to fail
 - (i) in the ordinary course of events; or
 - (ii) in a moderate earthquake (as defined in the regulations); or
 - (iii) in a moderate flood (as defined in the regulations)

153A Meaning of earthquake-prone dam and flood-prone dam

- (1) A dam is an earthquake-prone dam for the purposes of this Act if the dam—
 - a. is a high potential impact dam or a medium potential impact dam; and
 - b. is likely to fail in an earthquake threshold event (as defined in regulations).
- (2) A dam is an flood-prone dam for the purposes of this Act if the dam—
 - a. is a high potential impact dam or a medium potential impact dam; and
 - b. is likely to fail in a flood threshold event (as defined in regulations).

153B Owner must notify regional authority of dangerous dam

The owner of a dam who has reasonable grounds for believing that the dam is, or has become, dangerous must immediately notify the regional authority in whose region the dam is situated.

154 Powers of regional authorities in respect of dangerous dams

- (1) If a regional authority is satisfied that a dam is dangerous, the regional authority may—
 - a. put up a hoarding or fence to prevent people from approaching the dam nearer than is safe;
 - b. attach in a prominent place on, or adjacent to, the dam a notice that warns people not to approach the dam;
 - c. give written notice requiring work to be carried out on the dam, within a time stated in the notice (which must not be less than 10 days after the notice is given under section 155), to reduce or remove the danger.
- (2) This section does not limit the powers of a regional authority under this Part.
- (3) A person commits an offence if the person fails to comply with a notice given under subsection (1)(c).
- (4) A person who commits an offence under this section is liable to a fine not exceeding \$200,000.

155 Requirements for notice given under section 154

- (1) A notice given under section 154(1) (c) must—
 - a. be fixed to the dam concerned; and
 - b. state whether the owner of the dam must obtain a building consent in order to carry out the work required by the notice.
- (2) A copy of the notice must be given to—
 - a. the owner of the dam; and
 - b. an occupier of the dam; and
 - c. every person who has an interest in the land on which the dam is situated under a mortgage or other encumbrance registered under the Land Transfer Act 1952; and
 - d. every person claiming an interest in the land that is protected by a caveat lodged and in force under section 137 of the Land Transfer Act 1952; and
 - e. any statutory authority, if the land or dam has been classified; and
 - f. the New Zealand Historic Places Trust, if the dam is a heritage dam.
- (3) However, the notice, if fixed on the dam, is not invalid because a copy of it has not been given to any or all of the persons referred to in subsection (2).

156 Regional authority may carry out work

- (1) A regional authority may apply to a District Court for an order authorising the regional authority to carry out building work if any work required under a notice given by the regional authority under section 154(1)(c) is not completed, or not proceeding with reasonable speed, within—
 - a. the time stated in the notice; or

- b. any further time that the regional authority may allow.
- (2) Before the regional authority applies to a District Court under subsection (1), the regional authority must give the owner of the dam not less than 10 days' written notice of its intention to do so.
- (3) If a regional authority carries out building work under the authority of an order made under subsection (1),—
 - a. the owner of the dam is liable for the costs of the work; and
 - b. the regional authority may recover those costs from the owner; and
 - c. the amount recoverable by the regional authority becomes a charge on the land on which the dam is situated.

157 Measures to avoid immediate danger

- (1) This section applies if, because of the state of a dam, immediate danger to the safety of persons, property, or the environment is likely.
- (2) The chief executive of a regional authority may, by warrant issued under his or her signature, cause any action to be taken that is necessary in his or her judgment to remove that danger.
- (3) If the regional authority takes action under subsection (2),—
 - a. the owner of the dam is liable for the costs of the action; and
 - b. the regional authority may recover those costs from the owner; and
 - c. the amount recoverable by the regional authority becomes a charge on the land on which the dam is situated.
- (4) The chief executive of the regional authority and the regional authority are not under any liability arising from the issue, in good faith, of a warrant under subsection (2).

158 Regional authority must apply to District Court for confirmation of warrant

- (1) If the chief executive of a regional authority issues a warrant under section 157(2), the regional authority, on completion of the action stated in the warrant, must apply to a District Court for confirmation of the warrant.
- (2) On hearing the application, the District Court may—
 - a. confirm the warrant without modification; or
 - b. confirm the warrant subject to modification; or
 - c. set the warrant aside.
- (3) Subsection (1) does not apply if—
 - a. the owner of the dam concerned notifies the regional authority that—
 - (i) the owner does not dispute the entry into the owner's land; and
 - (ii) confirmation of the warrant by a District Court is not required; and
 - (iii) the owner pays the costs referred to in section 157(3)(a).

159 Building work includes decommissioning and demolition of dam

Any work required or authorised to be carried out under section 154(1)(c), or action taken under section 157, may include the decommissioning and demolition of a dam.

160 Power of regional authority not limited

The provisions of sections 154 to 159 are in addition to, and do not limit, the powers of a regional authority under section 157.

161 Regional authority must adopt policy on dangerous dams

- (1) A regional authority must, within 18 months after the commencement of this Part, adopt a policy on dangerous dams, earthquake-prone dams, and flood-prone dams within its region.
- (2) The policy must state—
 - a. the approach that the regional authority will take in performing its functions under this Part; and
 - b. the regional authority's priorities in performing those functions; and
 - c. how the policy will apply to heritage dams.

162 Adoption and review of policy

- (1) A policy under section 161 must be adopted in accordance with the special consultative procedure in section 83 of the Local Government Act 2002.
- (2) A policy may be amended or replaced only in accordance with the special consultative procedure, and this section applies to that amendment or replacement.
- (3) A regional authority must, as soon as practicable after adopting or amending a policy, provide a copy of the policy to the chief executive.
- (4) A regional authority must complete a review of a policy within 5 years after the policy is adopted and then at intervals of not more than 5 years.
- (5) A policy does not cease to have effect because it is due for review or being reviewed.

177 Application for determination

- (1) A party may apply to the chief executive for a determination in relation to either or both of the following:
 - a. whether particular matters comply with the building code;
 - b. the exercise, failure or refusal to exercise, or proposed or purported exercise by an authority in subsection (2), (3), or (4) of a power of decision to which this paragraph applies by virtue of that subsection.
- (2) Subsection (1)(b) applies to any power of decision of a building consent authority in respect of all or any of the following:
 - a. A building consent;
 - b. An extension under section 52(b) of the period during which building work must be commenced before a building consent lapses;
 - c. An extension under section 93(2)(b)(ii) of the period during which the authority must decide whether to issue a code compliance certificate;
 - d. A code compliance certificate;
 - e. A compliance schedule;
 - f. A notice to fix.
- (3) Subsection (1)(b) applies to any power of decision of a territorial authority in respect of, or under, all or any of the following:
 - a. Any waiver or modification of the building code under section 67;
 - b. A certificate of acceptance under section 96
 - c. An exemption from building consent requirements under paragraph (k) of Schedule I;
 - d. An amendment to a compliance schedule under section 106, 107, or 109;

- e. A notice to fix:
 - f. Sections 112, 113, 115, and 116 (which relate to alterations to, or changes in the use of, a building) and 124 and 129 (which relate to dangerous, earthquake-prone, and insanitary buildings):
 - g. A certificate for public use under section 363A:
 - h. A certificate under section 224(f) of the Resource Management Act 1991.
- (4) Subsection (1)(b) applies to any power of decision under this Act of a regional authority in respect of a dam.
- (5) Nothing in this section limits or affects section 70(4) or 446(1)(c).

BUILDING (DAM SAFETY) REGULATIONS 2008

1 Title

These regulations are the Building (Dam Safety) Regulations 2008.

2 Commencement

These regulations come into force on 1 July 2014.

3 Interpretation

- (1) In these regulations, unless the context otherwise requires,—

Act means the Building Act 2004

Competency Assessment Board means the Competency Assessment Board appointed under Part 5 of the Chartered Professional Engineers of New Zealand Rules (No 2) 2002

population at risk means the number of people likely to be affected by inundation greater than 0.5 metres in depth

specified categories are residential infrastructure, critical or major infrastructure (both damage caused and time to restore to operation), natural environment, and community recovery time.

- (2) Terms or expressions used and not defined in these regulations but defined in the Act have, in these regulations, the same meanings as they have in the Act.

4 Dam classification

A dam classification is to be determined by undertaking the following steps:

- (a) identify the effect that an uncontrolled release of the reservoir due to a failure of the dam when full would have on each of the specified categories; and
- (b) use [table 1](#) of Schedule 1 to determine the assessed damage level by assessing whether the damage level in each of the specified categories is catastrophic, major, moderate, or minimal then selecting the highest damage level; and
- (c) estimate the population at risk; and
- (d) use [table 2](#) of Schedule 1 to determine the dam classification by correlating the assessed damage level with the estimated population at risk.

5 Competencies for category A recognised engineers

- (1) A category A recognised engineer is an engineer who meets the requirements set out in [section 149\(1\)\(a\)](#) and (b) of the Act and is assessed by the Competency Assessment Board as demonstrating that he or she is able to practise competently in the area of dam safety engineering to the reasonable standard of a professional engineer practising in that area.
- (2) The extent to which the person has experience and knowledge in any or all of the following things must be taken into account when assessing whether that person meets the standard in subclause (1):
 - (a) geotechnical principles:
 - (b) design principles including structural geotechnical seismic hydrologic and hydraulic principles:
 - (c) dam construction techniques:
 - (d) operation and maintenance of dams:
 - (e) surveillance processes:
 - (f) response to dam safety issues:
 - (g) emergency planning:
 - (h) emergency response:
 - (i) resolution of potential dam safety deficiencies:

- (j) dam safety critical plant systems.

6 Competencies for category B recognised engineers

A category B recognised engineer is an engineer who meets the requirements set out in [section 149\(1\)\(a\)](#) and (b) of the Act and who has general civil engineering ability and experience.

7 Audit of dam classification and audit and review of dam safety assurance programme by recognised engineers

- (1) A category A recognised engineer may, in relation to any dam, issue the following certificates:
 - (a) following a dam classification audit, a dam classification certificate in [form 1](#) of Schedule 2:
 - (b) following a dam safety assurance programme audit, a certificate in [form 2](#) of Schedule 2:
 - (c) following a review of a dam safety assurance programme carried out under [section 150](#) of the Act, a certificate in [form 3](#) of Schedule 2.
- (2) A category B recognised engineer may, in relation only to a low potential impact dam, issue a dam classification certificate in [form 1](#) of Schedule 2 following a dam classification audit.

8 Criteria and standards for dam safety assurance programme

- (1) This regulation sets out the criteria and standards for dam safety that a dam safety assurance programme must meet.
- (2) A dam safety assurance programme must—
 - (a) be consistent with the dam safety management principles related to operation, maintenance, surveillance, and emergency action planning as provided in the *New Zealand Dam Safety Guidelines* (published by the New Zealand Society on Large Dams, November 2000); and
 - (b) be appropriate to the type and size of the dam and the dam classification given to the dam under regulation 4.
- (3) Every dam safety assurance programme must contain the following:
 - (a) requirements for and frequency of surveillance, routine visual inspections, instrument monitoring, data evaluation, and reporting to the dam owner:
 - (b) requirements for annual dam safety reviews:
 - (c) requirements for comprehensive dam safety reviews:
 - (d) details of an emergency action plan:
 - (e) requirements for inspection of appurtenant structures, including testing of gates and valves that contribute to reservoir safety:
 - (f) procedures for the investigation, assessment, and resolution of dam safety deficiencies.

9 Dam classification certificate

A dam classification certificate must—

- (a) be in form 1 of Schedule 2; and
- (b) contain the information requested in the form.

10 Dam safety assurance programme

A dam safety assurance programme must—

- (a) be in form 2 of Schedule 2; and
- (b) contain the information requested in the form and include any documentation required to be attached.

11 Annual dam compliance certificate

An annual dam compliance certificate must—

- (a) be in form 3 of Schedule 2; and
- (b) contain the information requested in the form.

Schedule 1 Dam classification

Table 1—Determination of Assessed Damage Level

Damage level	Specified categories				Community recovery time
	Residential houses ¹	Critical or major infrastructure ²		Natural environment	
		<i>Damage</i>	<i>Time to restore to operation³</i>		
Catastrophic	More than 50 houses destroyed	Extensive and widespread destruction of and damage to several major infrastructure components	More than 1 year	Extensive and widespread damage	Many years
Major	4 to 49 houses destroyed and a number of houses damaged	Extensive destruction of and damage to more than 1 major infrastructure component	Up to 12 months	Heavy damage and costly restoration	Years
Moderate	1 to 3 houses destroyed and some damaged	Significant damage to at least 1 major infrastructure component	Up to 3 months	Significant but recoverable damage	Months
Minimal	Minor Damage	Minor damage to major infrastructure	Up to 1 week	Short-term damage	Days to weeks

Notes

1. In relation to residential houses, destroyed means rendered uninhabitable.
2. Includes—
 - (a) lifelines (power supply, water supply, gas supply, transportations systems, wastewater treatment, telecommunications (network mains and nodes rather than local connections)); and
 - (b) emergency facilities (hospitals, police, fire services); and
 - (c) large industrial, commercial, or community facilities, the loss of which would have a significant impact on the community; and
 - (d) the dam, if the service the dam provides is critical to the community and that service cannot be provided by alternative means.
3. The estimated time required to repair the damage sufficiently to return the critical or major infrastructure to normal operation.

Table 2—Determination of Dam Classification

Assessed damage level	Population at risk (PAR)			
	0	1 to 10	11 to 100	More than 100
Catastrophic	High potential impact	High	High	High
Major	Medium potential impact	Medium/High (see note 4)	High	High
Moderate	Low potential impact	Low/Medium/High (see notes 3 and 4)	Medium/High (see note 4)	Medium/High (see notes 2 and 4)
Minimal	Low potential impact	Low/Medium/High (see notes 1, 3, and 4)	Low/Medium/High (see notes 1, 3, and 4)	Low/Medium/High (see notes 1, 3, and 4)

Notes

- 1 With a PAR of 5 or more people, it is unlikely that the potential impact will be low.
- 2 With a PAR of more than 100 people, it is unlikely that the potential impact will be medium.
- 3 Use a medium classification if it is highly likely that a life will be lost.
- 4 Use a high classification if it is highly likely that 2 or more lives will be lost.