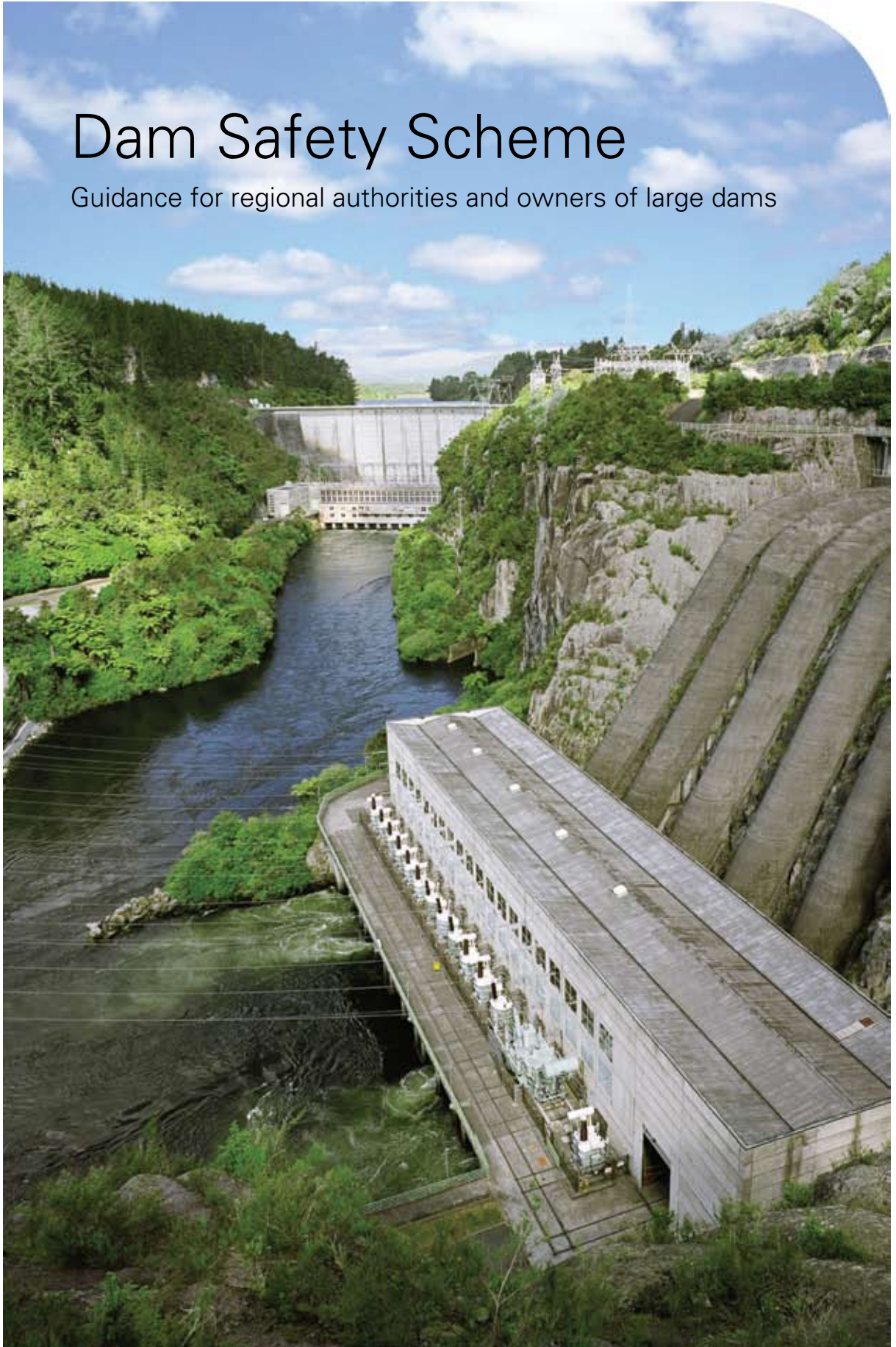




Department of  
Building and Housing  
*Te Tari Kaupapa Whare*

# Dam Safety Scheme

Guidance for regional authorities and owners of large dams



## INDEX

<b>1.0</b>	<b>ABOUT THIS GUIDE</b>	<b>3</b>
1.1	Life of this guide	3
1.2	Guidance	3
1.3	Information in this guide	3
1.4	Consultation process	3
1.5	What this guide does not cover	4
<b>2.0</b>	<b>ABOUT THE BUILDING (DAM SAFETY) REGULATIONS 2008</b>	<b>5</b>
2.1	What regulations were previously in place for dam safety?	5
2.2	Why has the Dam Safety Scheme been introduced?	5
2.3	The purpose of the Dam Safety Scheme	5
2.4	When will the Dam Safety Scheme come into effect?	5
<b>3.0</b>	<b>OVERVIEW OF THE DAM SAFETY SCHEME AND REQUIREMENTS</b>	<b>6</b>
3.1	Summary of Dam Safety Scheme requirements	6
3.2	Definition of a large dam	7
3.3	Requirements for owners of large dams	7
3.4	Role and responsibility of a regional authority that is a building consent authority	8
3.5	Role and responsibility of a regional authority	8
3.6	Transfer arrangements for regional authorities	8
3.7	Seeking a determination when a dam owner disagrees with a regional authority decision	9
3.8	Recognised Engineers	9
3.9	Dangerous dams, earthquake-prone dams, and flood-prone dams	9

<b>4.0</b>	<b>NAVIGATING THE DAM SAFETY SCHEME</b>	<b>10</b>
4.1	Which dams are affected by the Dam Safety Scheme?	10
4.2	Dam structures	11
4.3	Classifying a large dam affected by the Dam Safety Scheme	13
4.4	Methodology and guidance for classifying a large dam	13
4.5	Submission of the classification certificate and registration of dams	16
4.6	When to review the classification	16
4.7	Dam Safety Assurance Programme	16
4.8	Review of a Dam Safety Assurance Programme	18
4.9	Annual Dam Compliance Certificate	18
4.10	Category A and B Recognised Engineers	19
4.11	Timeline for implementation of the Dam Safety Scheme	20
4.12	Register of large dams	20
<b>5.0</b>	<b>DANGEROUS DAMS, EARTHQUAKE-PRONE DAMS, FLOOD-PRONE DAMS AND DAMS POSING IMMEDIATE DANGER</b>	<b>21</b>
5.1	Overview of dangerous dams, earthquake-prone dams, and flood-prone dams	21
5.2	Functions of a regional authority regarding dangerous dams	21
5.3	Functions of a regional authority regarding earthquake-prone dams and flood-prone dams	22
5.4	Dams posing an immediate danger	22
<b>6.0</b>	<b>APPENDICES</b>	<b>23</b>
	Appendix A: Dam Classification Certificate	23
	Appendix B: Dam Safety Assurance Programme Form	24
	Appendix C: Annual Dam Compliance Certificate	26
	Appendix D: Glossary of terms	28
	Appendix E: Useful contacts	30

# 1.0 About this guide

This guide aims to provide information on the Dam Safety Scheme (the Scheme), why it has been put in place and the requirements for maintaining and monitoring large dams.

The guide is aimed at:

- owners of large dams
- regional authorities (also known as regional councils).

The aim of this Scheme is to ensure that:

- owners of large dams understand and address the potential impacts of dam failure on downstream communities, infrastructure and the environment
- potential impacts are managed by implementing an approved and regularly audited Dam Safety Assurance Programme
- the Scheme is effectively administered by regional authorities.

## 1.1 Life of this guide

The content of this guide is based on the Building Act 2004 (the Act) as at July 2008, the Building (Dam Safety) Regulations 2008, the Building (Infringement Offences, Fees and Forms) Regulations 2007, Chartered Professional Engineers of New Zealand Act 2002 and the Chartered Professional Engineers of New Zealand Rules (No.2) 2002.

## 1.2 Guidance

This is a general guide to the Act and the Building (Dam Safety) Regulations 2008 (the Regulations) and is not intended to replace them. While the Department of Building and Housing has taken great care in preparing this guide, it provides guidance only and should not be used to establish all the requirements of the Act on its own. Readers must refer to the Act and Regulations as their primary source documents, and be aware that, for specific situations or problems, it may be necessary to seek independent legal advice.

A copy of the Act and the Regulations can be downloaded from [www.dbh.govt.nz/bofficials-dam-safety](http://www.dbh.govt.nz/bofficials-dam-safety)

## 1.3 Information in this guide

**Section 2** of this guide provides the context or thinking behind the Act and the associated Regulations, and how they were developed.

**Section 3** provides a summary of the Scheme, key definitions/concepts, and the requirements for large dam owners and regional authorities. It also explains the role and responsibilities of regional authorities, and the transfer arrangements of dam-related responsibilities from territorial authorities.

The detailed parts of this guide in **sections 4 to 6** address the new regulatory requirements for owners of large dams, as well as for regional authorities.

Information is also given about the role of Recognised Engineers and the duties of regional authorities around dangerous dams, earthquake-prone dams, and flood-prone dams; and measures to remove immediate danger.

## 1.4 Consultation process

The framework of the Scheme was originally developed by the Department of Internal Affairs. The statutory part of the Scheme was subject to public consultation in 2002 as part of the select committee consideration of what became the Building Act 2004.

A more detailed consultation occurred in late June 2006, when the Department of Building and Housing issued the *Regulations for the Dam Safety Scheme: Discussion Document*. Responses were received from 58 organisations and individuals representing dam owners/operators or users, regional and territorial authorities, consultants, professional bodies, non-government agencies, government agencies and private individuals.

Stakeholders supported the proposed Regulations, with a number of comments made about minor technical issues and definitions. The Department of Building and Housing consulted the Regional Authority Working Group (RAWG) to ensure these issues were incorporated, where appropriate, into the Regulations.

The RAWG comprises representatives from three regional authorities, the Ministry of Agriculture and Forestry, Federated Farmers, New Zealand Society On Large Dams (NZSOLD), Institution of Professional Engineers New Zealand (IPENZ), a large dam owner and an energy company.

Consultation with the RAWG helped the Department to identify operational issues in the transitional period of the Scheme and to analyse issues raised in submissions on the discussion document.

### 1.5 What this guide does not cover

This guide focuses on the regulatory requirements of the Scheme. The following subjects may be mentioned but are not discussed in detail:

- functions and duties of building consent authorities around building controls
- building consent authority accreditation and registration
- regulation of small dams.

It is not the intention of this guide to cover all topics relating to large dams. The main aim of the guide is provide information that will help dam owners and regional authorities understand the size and type of dam that is classified as a large dam and the regulations that the owners of large dams must comply with.



# 2.0 About the Building (Dam Safety) Regulations 2008

## 2.1 What legal requirements were previously in place for dam safety?

The Building Act 1991 introduced the need for regulating the construction of dams and building work carried out on large dams. The 1991 Act required a building consent, project information memorandum (PIM) and a Certificate of Code Compliance for building work on large dams.

These requirements continue and are expanded under the Building Act 2004 (the Act). All building work on dams is covered by the Act. The Act also includes some safety requirements for existing dams.

However, until the Act, the risk management of dams was unregulated. The Act aims to provide a clear and comprehensive regulatory scheme for ongoing dam safety management once dams are commissioned, particularly for larger dams.

## 2.2 Why has the Dam Safety Scheme been introduced?

The Act introduced new requirements for dam construction and dam safety management.

Dam safety has been a concern for a number of years. This was brought to a head by the Opuha Dam in South Canterbury failing during construction in 1997 and various flood events around the country during the late 1990s.

A dam failure could result in damage to life, property, infrastructure and the environment. The potential impact of a dam on these things can change over time due to downstream developments and there are currently no regulatory systems in place to manage these changes.

Unlike many other countries historically, New Zealand has not had a regulatory risk-management system in place. However, once constructed and commissioned, dams need ongoing monitoring, maintenance and repair in order to maintain their integrity.

A more structured and formal system of compliance monitoring will help ensure the safety of dams, taking into account the changing nature of public ownership and commercial arrangements for owning, operating and managing dams.

## 2.3 What is the purpose of the Dam Safety Scheme?

The Scheme will help ensure the safety of large dams and give the community confidence that dams in New Zealand are well built, managed and maintained.

The Scheme will apply to dams that meet the definition of a large dam under the Act. It will ensure that large dams with a medium or high potential impact classification have a formal system of dam monitoring, inspection and maintenance.

The Scheme may reduce a dam owner's risk in terms of meeting the requirements under the Health and Safety in Employment Act 1992 for maintaining a safe working environment. It also gives dam owners peace of mind, knowing the Scheme could help to save their family and neighbours, private property and the wider environment if the dam fails for any reason. This could include an unexpected flood or earthquake. It may also help dam owners to satisfy Resource Management Act 1991 conditions for building a large dam.

## 2.4 When will the Dam Safety Scheme come into effect?

The Regulations became law in July 2008 but will not take effect till 1 July 2010, after which owners of large dams have three months to submit a classification of their dam to the regional authority.

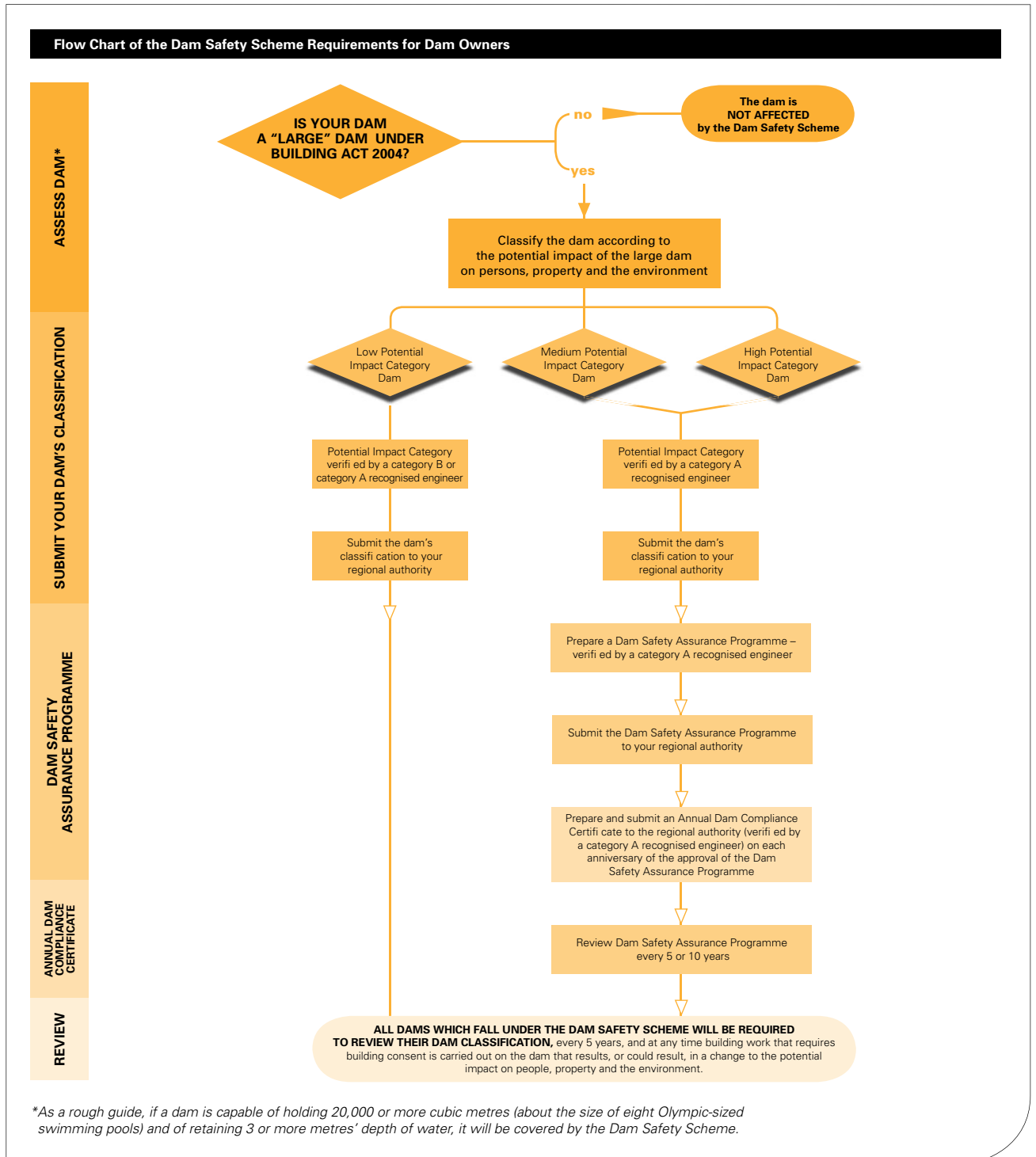
The Regulations give practical effect to the Scheme, which is set out in the Act.

# 3.0 Overview of the Dam Safety Scheme and requirements

This section summarises the requirements and features of the Scheme. For more details and examples, go to sections 4.0 – 6.0 of this guide.

## 3.1 Summary of Dam Safety Scheme requirements

The following flow diagram summarises the regulatory requirements of the Scheme.



### 3.2 Definition of a large dam

The definitions of “large dam” and “dam” can be found in section 7 of the Act and section 4.0 in this guide. If a dam has the capacity to hold a reservoir of 20,000m<sup>3</sup> or more (about the size of eight Olympic-sized swimming pools) and to retain three or more metres depth of water or other fluid, it is classified as a large dam in terms of the Act. This means it has to comply with the Scheme. The definition includes flood control dams but excludes stopbanks.

The dam safety provisions of the Act and related Regulations do not apply to small dams, ie, dams capable of holding less than 20,000m<sup>3</sup> of water or less than three metres depth. You can find more information in sections 4.1 and 4.2 of this guide. Section 6.1 also sets out the powers of a regional authority to urgently address the immediate danger of a dam of any size.

In most instances dam owners should be able to work out for themselves whether their dam meets the definition of a large dam under the Act.

### 3.3 Requirements for owners of large dams

A more detailed version of this summary is in section 4.0 of this guide.

Many owners of large dams have already established voluntary safety management programmes. These are still relevant. However, there has previously been no formal, national system for dam monitoring, inspection and maintenance.

Owners will have to classify any large dam on their property within three months of the Regulations taking effect on 1 July 2010. Or, if the dam is commissioned after 1 July 2010, the dam must be classified within three months of the dam being commissioned, the owner of the dam must provide the classification to a relevant regional council within the same timeframes, and the classification must be accompanied by a certificate from a Recognised Engineer.

The Act requires the owner of a large dam to:

- **Classify the dam as either a low, medium or high Potential Impact Category (PIC) dam.** More information on this is in the Regulations and section 134 of the Act. The different classifications refer to the potential impact of a failure of the dam on persons, property, and the environment. The owner of a large dam will need a Recognised Engineer to audit and confirm the dam’s classification in a certificate. The form of Dam Classification Certificate that may be used is in Appendix A.
- **Classify the dam and submit the classification** of the dam to the appropriate regional authority. For more information on this, refer to section 135 of the Act.
- For medium and high PIC dams, prepare and **submit a Dam Safety Assurance Programme** to the regional authority. The form of Dam Safety Assurance Programme that may be used is in Appendix B.
- Provide ongoing evidence of implementing surveillance and maintenance procedures in accordance with the approved Dam Safety Assurance Programme. This is done by **submitting an annual Dam Compliance Certificate**. The form of annual Dam Compliance Certificate that may be used is in Appendix C.
- Seek advice from a Recognised Engineer to **certify future, ongoing audits** of the Dam Safety Assurance Programme.

For more information on a Dam Safety Assurance Programme, refer to sections 140 to 150A of the Act and sections 4.7 to 4.9 of this guide.

### 3.4 Role and responsibility of a regional authority that is a building consent authority

Regional authorities must be accredited and registered as building consent authorities to carry out building control functions in relation to large dams.

A building consent authority:

- issues building consents for large dams (except consents subject to a waiver or modification)
- inspects building work for which it has granted a building consent
- issues notices to fix
- issues code compliance certificates
- issues compliance schedules.

For more detailed information, refer to sections 13 and 14 of the Act, and [www.dbh.govt.nz/bofficials-bca](http://www.dbh.govt.nz/bofficials-bca).

### 3.5 Role and responsibility of a regional authority

The Act requires regional authorities to:

- perform the function of a building consent authority, as summarised at section 3.4 of this guide
- carry out a variety of other building control functions such as issuing project information memoranda and issuing certificates of acceptance (in relation to unconsented building work on dams)

- administer and monitor the Dam Safety Scheme, which means that regional authorities must:
  - establish and maintain a register of large dams in their region
  - consider and approve (or not approve) dam classifications of large dams
  - consider and approve (or not approve) the Dam Safety Assurance Programmes for each medium and high PIC dam in their region
  - consider and approve (or not approve) annual Dam Compliance Certificates.
- adopt and implement a policy on dangerous dams, flood-prone dams and earthquake-prone dams. This includes setting up processes and procedures that would be triggered for medium or high PIC dams should they be determined to be dangerous, flood-prone or earthquake-prone
- take action if necessary, if any dam, large or small, poses an immediate danger to the safety of persons, property or the environment.

For more detailed information, refer to sections 13 and 14 of the Act.

### 3.6 Transfer arrangements for regional authorities

Regional authorities are required to be accredited and registered as building consent authorities by 31 March 2009. Most regional authorities have transferred, or intend to transfer, responsibility for their building control functions in relation to

dams to another accredited and registered regional authority. However, most regional authorities will still be responsible for administering and monitoring the Scheme in their regions.

Information on transfer arrangements is in sections 244 to 247 of the Act.

### **3.7 Seeking a determination when a dam owner disagrees with a regional authority decision**

If a dam owner disagrees with a decision the regional authority has made about their dam, they may apply to the Department of Building and Housing for a determination.

A determination is a binding decision made by the Department. It provides a way of solving disputes or questions about a regional authority exercising its powers in relation to a dam, or the failure to exercise those powers.

For further information see section 177 of the Act, or please refer to the Guide to Building Act Determinations at:

<http://www.dbh.govt.nz/pub-determinations-guide> or free phone 0800 242 243 for a hard copy.

### **3.8 Recognised Engineers**

Owners of large dams have obligations under the Act that require the exercise of professional knowledge and judgement. The Act requires that classifications, annual Dam Compliance Certificates

and Dam Safety Assurance Programmes are signed off and certified by a Recognised Engineer before they are submitted to the regional authority.

These requirements are to ensure that a dam is correctly classified and that a Dam Safety Assurance Programme has been prepared and audited by a qualified professional. Regulations define the competencies of Recognised Engineers – refer to section 4.10 of this guide.

### **3.9 Dangerous dams, earthquake-prone dams, and flood-prone dams**

The Act requires all regional authorities to develop dangerous dams, earthquake-prone dams, and flood-prone dams policy. This is discussed further in section 5.0 of this guide.



## 4.0 Navigating the Dam Safety Scheme

### 4.1 Which dams are affected by the Scheme?

The Scheme only applies to large dams. A large dam is defined by section 7 as being a dam that retains three or more metres depth, and holds 20,000 or more cubic metres volume of water or other fluid.

The types of dam that are included are those caught by the definition of 'dam' in section 7 of the Act:

(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

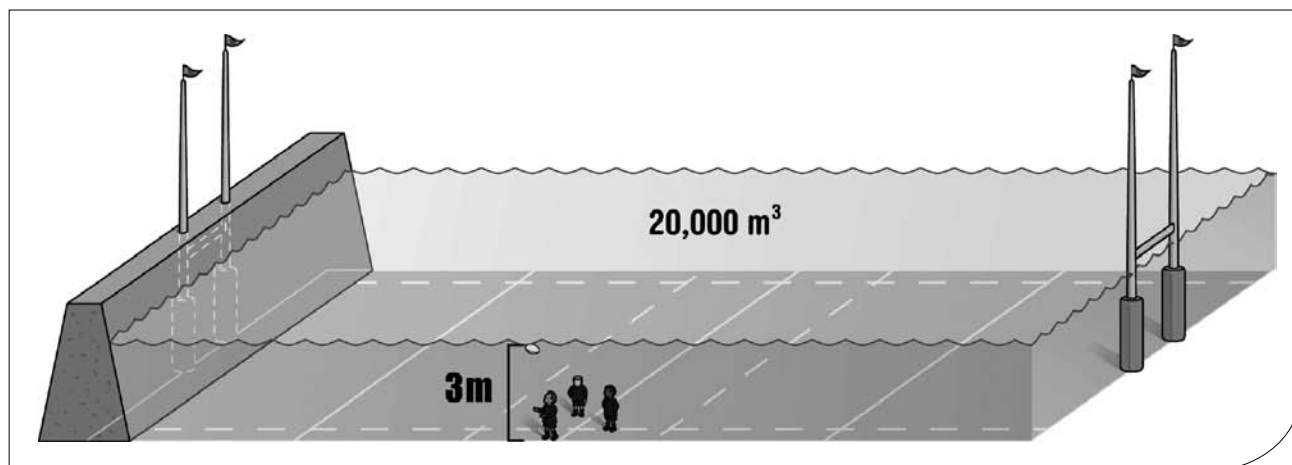
(b) includes –

- (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 stopbank designed to control floodwaters.

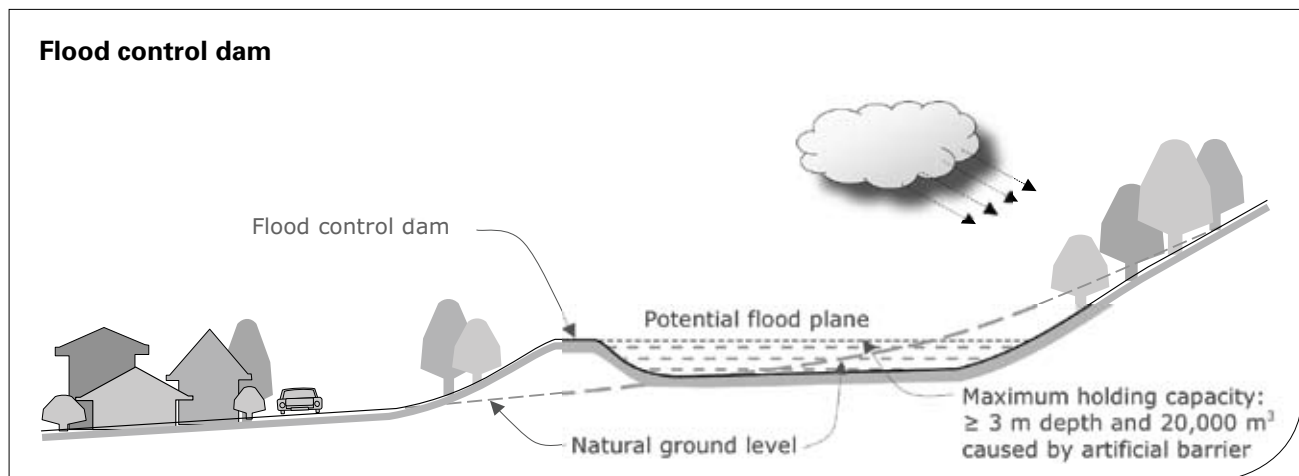
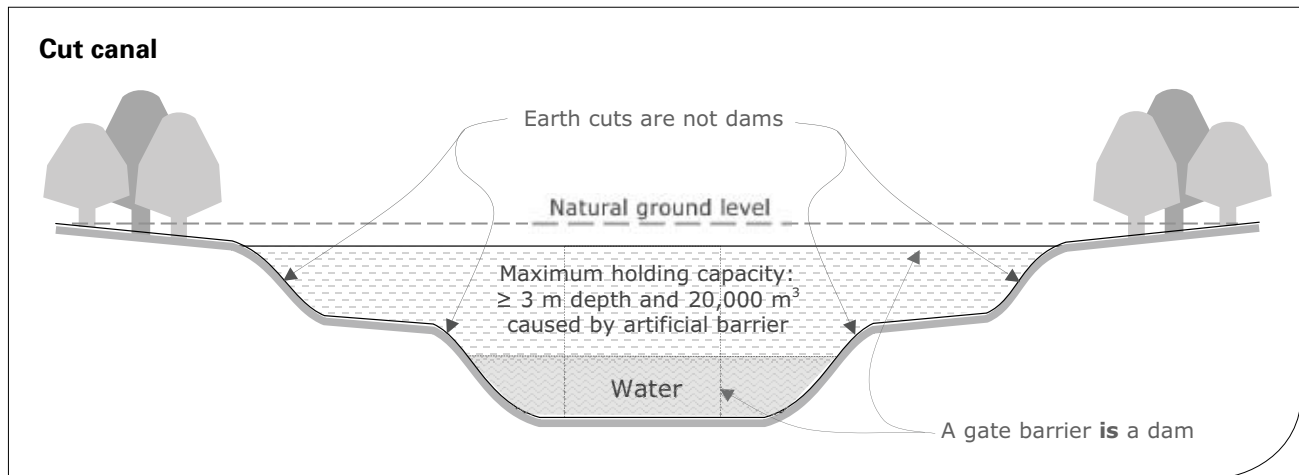
The definition of dam includes a variety of terms. To assist with interpreting these terms, there is a glossary of terms in Appendix D.

A large dam has roughly the capacity of eight Olympic-sized swimming pools, or a rugby field with water 3m deep – that is, up to the crossbars of the goalposts.

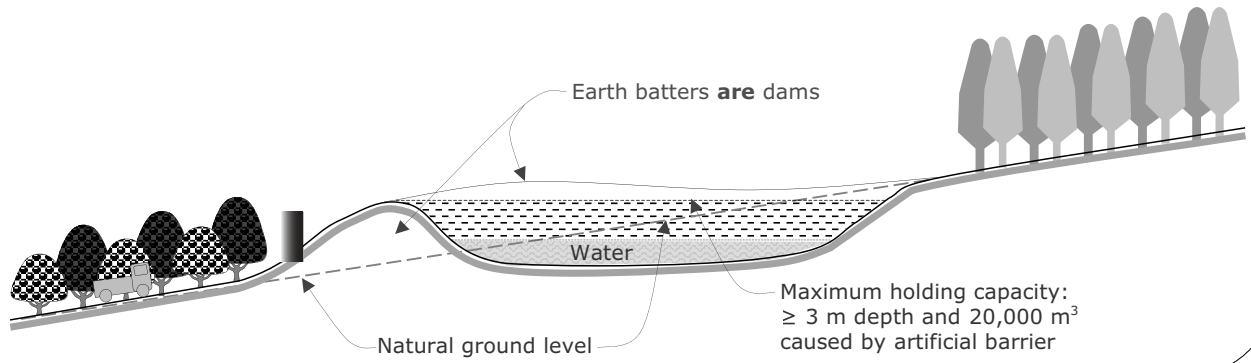


## 4.2 Dam structures

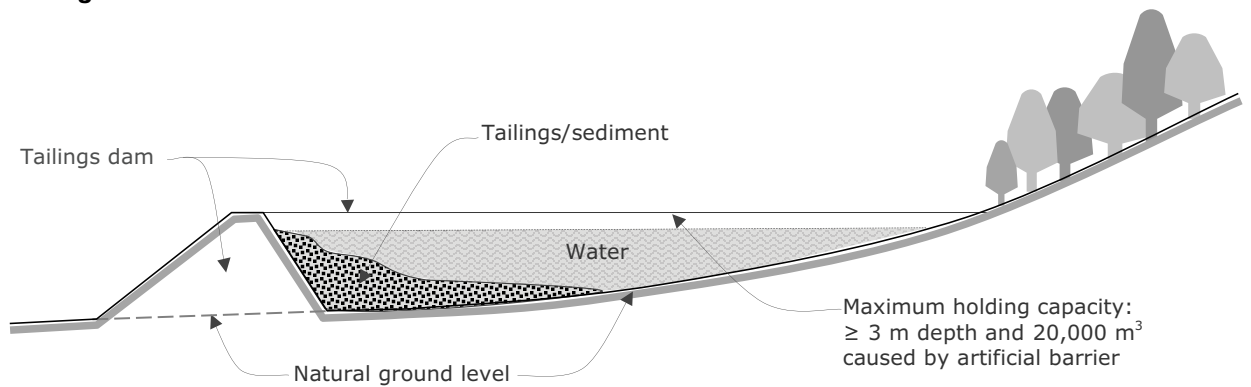
There are a variety of structures could be affected by the Scheme, including, but not limited to, the following examples:



### Irrigation dam



### Tailings dam



You can use the following formula to calculate the approximate volume of the reservoir behind a dam. Otherwise, dam owners may get a suitably qualified professional engineer to check the size.

**Using the following formula, calculate the volume in cubic metres (m<sup>3</sup>)**  
**Volume (m<sup>3</sup>) = 0.4 x Surface Area x Depth** (0.4 is a conversion factor that takes into account the slope of the sides of dams)

**Triangular**  
 $\text{Surface Area} = \frac{\text{width} \times \text{length}}{2}$

**Rectangular**  
 $\text{Surface Area} = \text{width} \times \text{length}$

**Round**  
 $\text{Surface Area} = 0.8 \times \text{width} \times \text{length}$

**Note:** volume is based on its maximum reservoir capacity, even if it rarely meets this full capacity.

### 4.3 Classifying a large dam affected by the Dam Safety Scheme

If a dam meets the definition of a large dam under the Act, the owner of the dam will be affected by the Scheme.

Under section 134 of the Act, a large dam is required to be classified. The owner of a large dam needs to classify their dam and have this classification certified by a Recognised Engineer (as defined in section 149 of the Act) as either having a low, medium or high potential impact.

The classification of a dam reflects the potential impact a dam failure could have on people, property and the environment.

Initially, the dam owner may decide which classification is appropriate for their large dam, but that decision must be confirmed by a Recognised Engineer. The Recognised Engineer must audit the dam owner’s classification against the classification criteria in the Regulations and, if they agree, they have to give the dam owner a certificate confirming the dam’s PIC.

### 4.4 Methodology and guidance for classifying a large dam

The Regulations set out the methodology for classifying dams (see Regulation 4). The following tables are used in the Regulations for classifying a large dam (see Schedule 1 of the Regulations).

## Schedule 1. Dam Classification

**Table 1. Determination of Assessed Damage Level**

Damage Level	SPECIFIED CATEGORIES				
	Residential houses <sup>1</sup>	Critical or major infrastructure <sup>2</sup>		Natural environment	Community recovery time
		Damage	Time to restore to operation <sup>3</sup>		
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 components	Up to 1 week	Short-term damage	Days to weeks

**Notes.**

- In relation to residential houses, destroyed means rendered inhabitable.
- Includes:
  - lifelines (power supply, water supply, gas supply, transportations systems, wastewater treatment, telecommunications (network mains and nodes rather than local connections)); and
  - emergency facilities – (hospitals, police, fire services); and
  - large industrial, commercial, or community facilities, the loss of which would have a significant impact on the community; and
  - the dam if the service the dam provides is critical to the community and that service cannot be provided by alternative means.
- 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 & 4)	Medium/High (see note 4)	Medium/High (see notes 2 & 4)
Minimal	Low potential impact	Low/Medium/High (see notes 1, 3 & 4)	Low/Medium/High (see notes 1, 3 & 4)	Low/Medium/High (see notes 1, 3 & 4)

**Notes.**

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

The following provides more information about the previous tables and how to use them.

The tables use a number of technical terms. To assist with interpreting these terms, there is a glossary of terms in Appendix D.

### Table 1: Determination of Assessed Damage Level

The damage level needs to be assessed by considering the impact on:

- residential houses
  - **critical and major infrastructure** (both damage caused and estimated time to restore to normal operation)
  - natural environment
  - community recovery time.
- a) The dam owner must determine and/or estimate the damage that would be caused by an uncontrolled release of the reservoir when full due to a dam breach – that is, if the dam fails, what would likely occur?
- b) The dam owner may do the assessment themselves and use a Recognised Engineer to verify the classification, or the dam owner may use a Recognised Engineer to handle the whole classification process. The Recognised Engineer must be either a Category A or Category B Recognised Engineer, as discussed in 4.10 of this guide.
- c) In some situations an estimate of flood areas may be carried out using the downstream topography – ie, valley shape and slope – as it may be obvious whether the flow is going to impact on houses, infrastructure, or the natural environment, or find its way to a larger water course and not cause much damage. For straightforward dam layout and topography, it will be a matter of examining where the water might flow using an on-site assessment. If required, a suitably qualified professional engineer will be able to create an inundation/ flood map.

**Note:** More complex layout or topography may require engineers experienced in hydraulic modelling to map the inundation level. Once the flood map has been created, it can be used to assist in classifying the PIC of the large dam.

- d) The damage level is determined by assessing whether the damage level in each of the specified categories is catastrophic, major, moderate or minimal, and then selecting the highest damage level.

Example: An assessment determines that in the event that a particular dam failed, it would result in:

- three houses becoming uninhabitable with the likely loss of two or more lives
- minor damage to a state highway
- flooding of a protected ecosystem resulting in destruction of the habitat of endangered species
- extensive damage to the natural environment and costly restoration
- It would take several months for the community to recover.

In this example, the damage to residential houses is moderate, damage to **critical and major infrastructure** is minimal, and time for the community to recover and damage to the natural environment is major. The damage to the natural environment is the highest out of all of the columns, so the assessed damage level is 'major'.

### Table 2: Determination of Dam Classification

Dams must be classified as high, medium or low PIC. Using Table 2, the classification depends on the population at risk (PAR) and on the assessed damage level (as determined in Table 1).

The assessor determines:

- (1) how many people would likely be affected by inundation greater than 0.5 metres in depth; and
- (2) how many lives would be lost (this can be done at the same time as estimating the assessed damage level).

Example: In the example above the three houses indicate a PAR in the range of 1-10. With a 'major'

damage level from Table 1, the dam could be either medium or high PIC from Table 2. The location of the houses indicates that two or more lives are likely to be lost. On the basis of Note 4 in Table 2 the dam is classified as high PIC. This assessment is submitted to a Category A Recognised Engineer for review and certification, before being submitted to the regional authority.

The PAR and the potential damage must be determined on the basis of a breach or failure of the dam. For this purpose, a breach or failure of a dam occurs when it is at full service level and all retained fluid is released over a short period of time. The PAR is determined as those likely to be affected by a flood greater than half a metre deep. When considering PAR, the following issues should be taken into account:

- groups of dwellings
- camping areas and occupancy times
- allowance for temporary populations (eg, fishermen, bushwalkers, birdwatchers, picnickers)
- river crossings and bridges
- the number of people using nearby schools, hospitals and other institutions (eg, prisons) as well as commercial and retail areas.

#### **4.5 Submission of the classification certificate and registration of dams**

The owner of an existing large dam will first need to submit the classification certificate to their regional authority within three months of the Regulations coming into effect (that is, by September 2010). Owners of new dams will need to submit the classification certificate to the regional authority within three months of the dam being commissioned.

A Dam Classification Certificate is in Appendix A. You can also get one from the Department's website: <http://www.dbh.govt.nz/bofficials-dam-safety>

Once the regional authority has received the Dam Classification Certificate, the classification of the dam is placed on the regional dam register. For more information on this, refer to sections 134 to 139 of the Act.

An owner of a large dam who fails to comply with section 134 of the Act is liable for a fine not exceeding \$20,000 or an infringement fee<sup>1</sup> of \$500.

#### **4.6 When to review the classification**

An owner of a large dam must review the dam's classification and resubmit it with a Recognised Engineer's certificate in accordance with section 139 of the Act, as follows:

- within five years after the regional authority approves the classification and at intervals of not more than five years
- after the first review, at intervals of not more than five years
- if at any time building work that requires building consent is carried out on the dam, which results in or could result in a change to the potential failure impact on people, property, or the environment.

#### **4.7 Dam Safety Assurance Programme**

Sections 140 to 148 of the Act outline the requirements for a Dam Safety Assurance Programme. The owner of a medium or high PIC dam is required to prepare a Dam Safety Assurance Programme.

The purpose of a Dam Safety Assurance Programme is to assist the owner of a large dam to ensure good safety management of the dam through the life of the structure and to manage the resolution of any potential deficiencies that may arise. A Dam Safety Assurance Programme is basically a document that sets out the dam owner's procedures for checking the safety of their dam, including an emergency

<sup>1</sup> Under Section 372 of the Building Act 2004, an infringement notice may be served on a person if an enforcement officer (a) observes the person committing an infringement offence, or (b) has reasonable cause to believe that an infringement offence is being or has been committed by that person. The Building (Infringement Offences, Fees, and Forms) Regulations 2007 are available from <http://www.dbh.govt.nz/bofficials-bca> or free phone 0800 242 243.

action plan, and a plan for repairing any non-urgent deficiencies with their dam.

The owner of a medium or high PIC large dam must:

- prepare, or arrange for the preparation of, a Dam Safety Assurance Programme for the dam (using the form in the Regulations)
- have the Dam Safety Assurance Programme audited by a Category A Recognised Engineer
- submit to the appropriate regional authority the audited Dam Safety Assurance Programme within one year (if a high PIC) or two years (if a medium PIC dam) of the dam's classification
- have the Dam Safety Assurance Programme audited and reviewed within five years (if a high PIC dam) or ten years (if a medium PIC dam) of the regional authority originally approving the Dam Safety Assurance Programme, and every five years thereafter.

A Dam Safety Assurance Programme must be appropriate for the type, size and classification of a dam.

A Dam Safety Assurance Programme must contain the following:

- (a) requirements for and frequency of, routine visual inspections, instrument monitoring, data evaluation, and reporting to the large 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, and
- (f) procedures for the investigation, assessment and resolution of dam safety deficiencies.<sup>2</sup>

The Dam Safety Assurance Programme must be consistent with the New Zealand Society On Large Dams' (NZSOLD) *New Zealand Dam Safety Guidelines (2000)*. The NZSOLD *Dam Safety*

*Guidelines (2000)* can be viewed on NZSOLD's website: <http://www.ipenz.org.nz/nzsold/>.

The Dam Safety Assurance Programme should be structured so that the assurance of safe performance of the dam is achieved, while allowing enough flexibility for unforeseen disruptions.

The Dam Safety Scheme is one of strict compliance. It does not allow for partial compliance with the Dam Safety Assurance Programme. Accordingly, when designing a Dam Safety Assurance Programme, the dam owner and Recognised Engineer should ensure that the programme is flexible enough to reflect the risk that routine surveillance, monitoring and inspection can potentially be disrupted. This can delay planned Dam Safety Assurance Programme activities and the timeframe to ensure full compliance with the annual Dam Compliance Certificate. Disruptive factors to take into account may include:

- high or low inflows
- extreme weather conditions
- staff leave
- resource availability
- acts of God
- how it will affect ensuring full compliance with the annual Dam Compliance Certificate.

The Dam Safety Assurance Programme form is in Appendix B or on the Department's website: [www.dbh.govt.nz/bofficials-dam-safety](http://www.dbh.govt.nz/bofficials-dam-safety)

Once the Dam Safety Assurance Programme form has been prepared and audited by a Category A Recognised Engineer, it must be sent to the regional authority. The regional authority must approve the form, unless it considers on reasonable grounds that the engineer who audited and signed off on the Dam Safety Assurance Programme is not a Category A Recognised Engineer.

<sup>2</sup> A deficiency is where a dam failure scenario is possible under certain circumstances, such that the assumed safety condition or criteria of one aspect of the dam may not be met (a potential deficiency), or, is not met (a confirmed deficiency). See the glossary for a definition of some of these terms.

The timeframe for submitting a Dam Safety Assurance Programme and form is one year after the regional authority approved the classification for a high PIC dam and two years for a medium PIC dam.

A medium or high PIC large dam owner who fails to submit a Dam Safety Assurance Programme by the statutory date required is liable for a fine not exceeding \$20,000 or an infringement fee of \$500.

If a regional authority refuses to approve the Dam Safety Assurance Programme, it must direct the dam owner to have the Dam Safety Assurance Programme audited by a Recognised Engineer.

The dam owner will then have 15 working days, unless a later date is agreed on by the regional authority, to have their Dam Safety Assurance Programme re-audited and submitted with the Dam Safety Assurance Programme form. Failure to do so may result in a fine of up to \$10,000 or an infringement fee of \$250.

Once the Dam Safety Assurance Programme has been approved by the regional authority, the dam owner must keep the Dam Safety Assurance Programme document either:

- on the dam, or
- in another building in the region of the regional authority, or
- in some other place agreed on by the owner of the large dam and the regional authority.

The Dam Safety Assurance Programme document must be available for inspection by the regional authority and any person or organisation that has a right to inspect the dam under any Act.

#### 4.8 Review of a Dam Safety Assurance Programme

Section 146 of the Act states that the owner of a **high** PIC dam must review their Dam Safety Assurance Programme:

- within five years of it being approved by the regional authority
- after the first review, at intervals of no more than five years.

The owner of a **medium** PIC dam must review their Dam Safety Assurance Programme:

- within 10 years of it being approved by the regional authority
- after the first review, at intervals of no more than five years.

Owners of large dams must, at all times, review their Dam Safety Assurance Programme whenever building work is done on the dam that requires a building consent and that could result in a change to the PIC. Owners of large dams that are earthquake-prone or flood-prone must also review their Dam Safety Assurance Programme upon the request of the relevant regional authority.

#### 4.9 Annual Dam Compliance Certificate

Section 150 of the Act states that every owner of a dam for which a Dam Safety Assurance Programme has been approved must provide the regional authority with an annual Dam Compliance Certificate on each anniversary of their Dam Safety Assurance Programme having been approved. The certificate must include confirmation from a Category A Recognised Engineer that all procedures in the Dam Safety Assurance Programme have been complied with during the previous twelve months.

By submitting the annual Dam Compliance Certificate to the regional authority, the owner provides ongoing evidence of doing surveillance and maintenance in line with the approved Dam Safety Assurance Programme.

An owner may face an infringement fee of \$250 if they fail to display an annual Dam Compliance Certificate, under section 150 of the Act. An owner of a large dam may also face an infringement fee of \$1000 if they knowingly:

- display a false or misleading annual Dam Compliance Certificate
- fail to display an annual Dam Compliance Certificate that is required to be displayed under section 150 of the Act

- displays an annual Dam Compliance Certificate otherwise than in accordance with section 150 of the Act.

The offences listed above also carry a fine of up to \$5,000.

#### 4.10 Category A and B Recognised Engineers

Compliance with the Dam Safety Scheme requires the exercise of professional knowledge and judgement. Under the Scheme, the classification of dams and Dam Safety Assurance Programmes must be certified by a Recognised Engineer, a term specific to the Act. These requirements aim to ensure that a large dam is correctly classified and that a Dam Safety Assurance Programme is appropriate to the dam and meets the prescribed criteria and standards for dam safety.

A Recognised Engineer is someone who has no financial interest in the dam, is registered under the Chartered Professional Engineers of New Zealand Act 2002, and meets the competencies listed in the Regulations.

There are two categories of Recognised Engineers, Categories A and B.

**Category A** Recognised Engineers have specific dam engineering and safety assurance competencies.

Category A Recognised Engineers may:

- certify dam classifications
- certify Dam Safety Assurance Programmes
- certify annual Dam Compliance Certificates for dams.

The Institution of Professional Engineers New Zealand (IPENZ) oversees the assessment process. IPENZ uses a pool of assessors to assess engineers on the requirements of a Category A Recognised Engineer. Engineers may be assessed against some or all of the following competencies:

- geotechnical principles
- design principles including structural geotechnical seismic hydrologic and hydraulic principles

- dam construction techniques
- operation and maintenance of dams
- surveillance processes
- response to dam safety issues
- emergency planning
- emergency response
- resolution of potential dam safety deficiencies
- dam safety critical plant systems.

A Category A Recognised Engineer 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 standard of a reasonable professional engineer practising in the area.

**Category B** Recognised Engineers have general civil engineering ability and experience and may only certify the classification of low PIC dams. Unlike Category A Recognised Engineers, Category B Recognised Engineers are not required to be formally assessed.

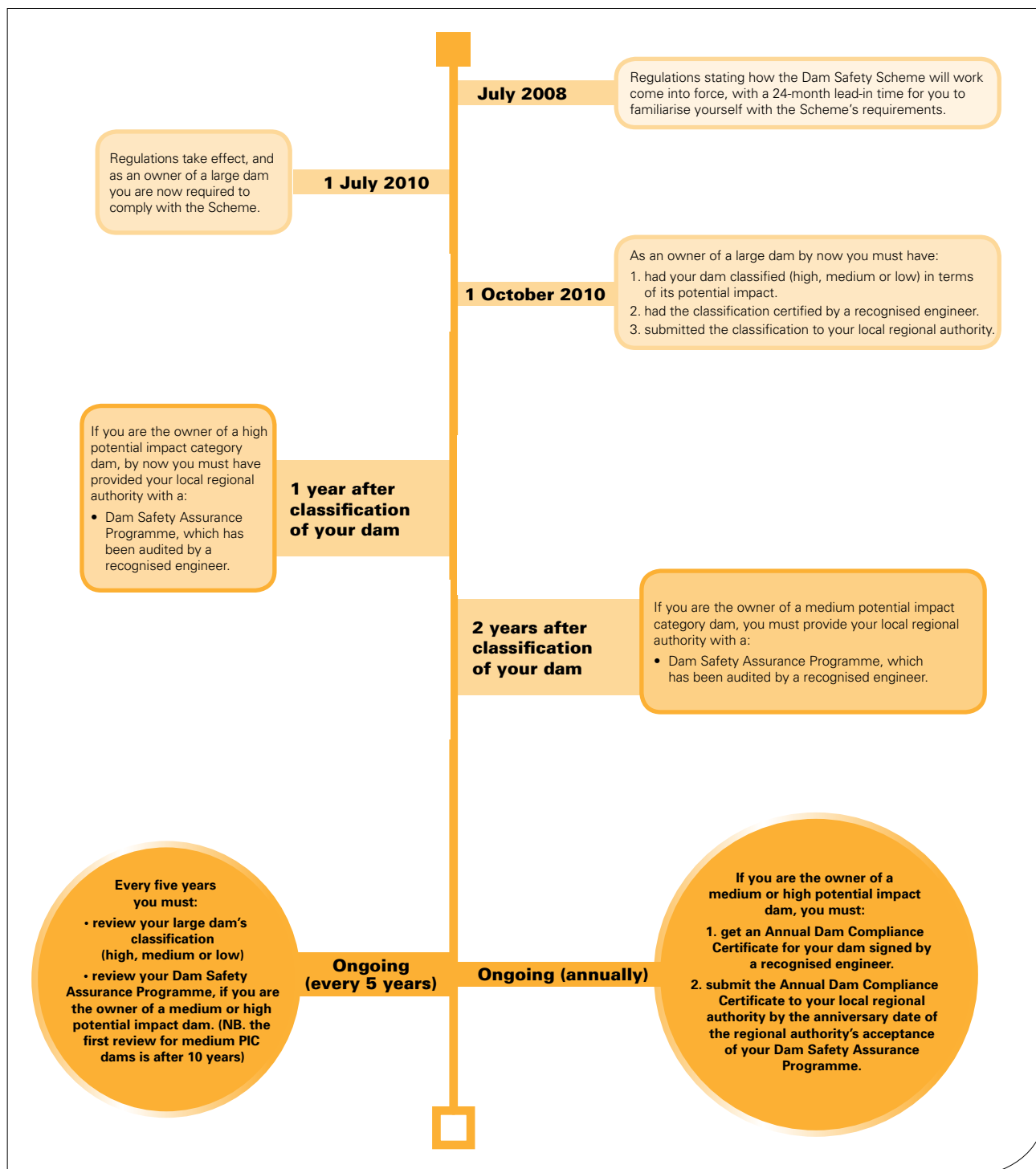
A Recognised Engineer must comply with the Chartered Professional Engineers of New Zealand Code of Ethical Behaviour. A Recognised Engineer must also comply with Chartered Professional Engineers of New Zealand Rules (No. 2) 2002. These state that a chartered professional engineer must not misrepresent his or her competence and only do engineering activities within his or her competence.

IPENZ will manage an online list of Recognised Engineers. The list will have contact details for Recognised Engineers who have agreed to make their details available. The list of Recognised Engineers will be updated as the Scheme progresses. This list can be found at:

[www.ipenz.org.nz/IPENZ/finding/recognised-engineer/](http://www.ipenz.org.nz/IPENZ/finding/recognised-engineer/)

For more information on who is a Recognised Engineer, refer to section 149 of the Act.

#### 4.11 Timeline for implementation of the Dam Safety Scheme



#### 4.12 Register of large dams

Section 151 of the Act requires each regional authority to establish and maintain a register of all large dams in its region.

# 5.0 Dangerous dams, earthquake-prone dams, flood-prone dams and dams posing immediate danger

## 5.1 Overview of dangerous dams, earthquake-prone dams and flood-prone dams

The Act requires regional authorities to develop a dangerous dams, earthquake-prone dams, and flood-prone dams policy within their region. The purpose of this policy is to help prevent the catastrophic failure of a potentially dangerous dam, and to ensure deficiencies in an earthquake-prone or flood-prone dam are addressed.

Each policy must state the regional authority's approach for fulfilling and prioritising its functions around these types of dams. The policy must also state how it will be applied to heritage dams.

Section 153 of the Act states that a large dam is 'dangerous' for the purposes of the Act if it:

- (a) is a high PIC dam or a medium PIC 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).

Section 153A of the Act states that a large dam is an earthquake-prone dam if the dam:

- (a) is a high PIC dam or medium PIC dam; and
- (b) is likely to fail in an earthquake threshold event (as defined in the regulations).

Section 153A of the Act states that a large dam is a flood-prone dam if the dam:

- (a) is a high PIC dam or medium PIC dam; and
- (b) is likely to fail in a flood threshold event (as defined in the regulations).

Each regional authority is required to have a dangerous dams, earthquake-prone dams and flood-prone dams policy. However, the Department recognises that regional authorities will be unable to finalise their policies until regulations are passed that define what is meant by 'moderate earthquake', 'moderate flood', 'earthquake threshold event' and 'flood threshold event'.

## 5.2 Functions of a regional authority regarding dangerous dams

Sections 154 to 156 of the Act outline the functions of a regional authority in relation to dangerous dams.

These functions and powers include:

- putting up a hoarding or fence to prevent people from getting too close to the dam
- attaching a notice on or near the dam that warns people not to approach the dam
- requiring work to be carried out on the dam by the owner within a specified period (which must not be less than 10 days), to reduce or remove the danger.

If an owner of a large dam fails to carry out the required work they are liable to a fine of up to \$200,000 or an infringement fee of \$2000. In addition, the regional authority may apply to a District Court for an order authorising the regional authority to carry out the required building work. The regional authority may then recover the costs of the work from the owner.

If a dam, small or large, is likely to pose immediate danger to the safety of people, property or the environment, the chief executive of a regional



authority can issue a warrant under his/her own hand to take action to mitigate the immediate danger posed by the dam and the dam owner will be liable for the costs of the action.

### 5.3 Functions of a regional authority around earthquake-prone dams and flood-prone dams

Under section 146 (2)(b) of the Act the regional authority may request a large dam owner to review their Dam Safety Assurance Programme if the dam is an earthquake-prone dam or a flood-prone dam.

### 5.4 Dams posing an immediate danger

Section 157 of the Act outlines what a regional authority can do to remove the danger if it considers a small or large dam poses an immediate danger to the safety of people, property, or the environment.

The chief executive of a regional authority may take any action necessary to remove the immediate danger and later apply to the District Court for a confirmation of warrant for undertaking the appropriate actions. The regional authority may recover the costs for these actions from the dam owner.



# 6.0 Appendices

## APPENDIX A

### FORM 1: DAM CLASSIFICATION CERTIFICATE

#### Sections 135 & 139, Building Act 2004

Dam	
Dam name	
Date of construction	
Resource consent number or identification (if applicable)	
Location of dam	
Purpose of dam	
Type of dam	
Height of dam (in metres)	
Reservoir maximum capacity (in cubic metres)	
Description of spillway or flood control facility	
Flood capacity (in cubic metres per second)	
Changes in design or operation since construction	
Potential impact classification	
Relevant regional authority	
Owner	
Name of owner	
Name of operator (if different from owner)	
Contact person	
Postal address	
Residential address	
Certificate of recognised engineer	
<p>I certify that the classification of the above dam as a [specify low/medium/high] potential impact dam accords with the methodology for classifying a dam set out in regulation 4 of the Building (Dam Safety) Regulations 2008.</p> <p>I am a [specify whether category A/category B] recognised engineer in accordance with section 149 of the Building Act 2004.</p> <p>I have attached evidence that I am a [specify whether category A/category B] engineer.</p>	
Date	
Signature of recognised engineer	
Full name of recognised engineer	
CPEng registration number	

## APPENDIX B

### FORM 2: DAM SAFETY ASSURANCE PROGRAMME

#### Sections 141 & 142, Building Act 2004

The Dam Safety Assurance Programme consists of this form, the attached documents, and any other referenced documents.

Dam	
Dam name	
Date of construction	
Resource consent number or identification (if applicable)	
Location of dam	
Purpose of dam	
Type of dam	
Height of dam (in metres)	
Reservoir maximum capacity (in cubic metres)	
Description of spillway or flood control facility	
Flood capacity (in cubic metres per second)	
Changes in design or operation since construction	
Potential impact classification	
Relevant regional authority	
Owner	
Name of owner	
Name of operator (if different from owner)	
Contact person	
Postal address	
Residential address	

#### Summary of compliance with criteria and standards

Please attach a brief summary of how each of the criteria and standards set out in regulation 8 of the Building (Dam Safety) Regulations 2008 have been addressed and indicate where these are addressed in the Dam Safety Assurance Programme:

1. Describe briefly and/or reference how each of the following have been adequately addressed for the dam:
  - (i) surveillance requirements, including accurate records detailing the safety performance of the dam and that appropriate actions are taken when potential deficiencies or adverse data trends are identified:
  - (ii) the frequency for routine visual inspections:
  - (iii) instrument monitoring and data evaluation:
  - (iv) reporting to the dam owner.
2. Describe and/or reference the requirements for annual dam safety reviews of the dam.
3. Describe and/or reference the requirements and frequency for comprehensive dam safety reviews of the dam.
4. Summarise and/or reference your emergency action plan including –
  - (i) responsibilities:
  - (ii) emergency identification procedures:
  - (iii) notification procedures and contact lists:
  - (iv) dam breach inundation maps.
5. Describe and/or reference the requirements to inspect appurtenant structures, including testing of gates and valves that contribute to reservoir safety.
6. Describe and/or reference the procedures for the investigation, assessment, and resolution of dam safety deficiencies.

## FORM 2. CONTINUED

### Documentation of Dam Safety Assurance Programme

List the location of all documentation, manuals, publications referred to in the Dam Safety Assurance Programme (if applicable):	
State the location(s) of the Dam Safety Assurance Programme	
State the appropriate contact person with respect to the Dam Safety Assurance Programme and supporting referenced material	
Name	
Contact details	
The documents that form the Dam Safety Assurance Programme are attached as follows:	

<b>Certificate of recognised engineer</b>	
I certify that the Dam Safety Assurance Programme prepared for the above dam meets the methodology for classifying a dam set out in regulation 8 of the Building (Dam Safety) Regulations 2008.	
I am a category A recognised engineer in accordance with section 149 of the Building Act 2004.	
I have attached evidence that I am a category A recognised engineer.	
Date	
Signature of recognised engineer	
Full name of recognised engineer	
CPEng registration number	

**Note:** all forms in this Appendix are available from <http://www.dbh.govt.nz/bofficials-dam-safety> or free phone 0800 242 243 for a hard copy.

## APPENDIX C

### FORM 3: ANNUAL DAM COMPLIANCE CERTIFICATE

#### Section 150, Building Act 2004

Dam	
Dam name	
Date of construction	
Resource consent number or identification (if applicable)	
Location of dam	
Purpose of dam	
Type of dam	
Height of dam (in metres)	
Reservoir maximum capacity (in cubic metres)	
Description of spillway or flood control facility	
Flood capacity (in cubic metres per second)	
Changes in design or operation since construction	
Potential impact classification	
Date of approval of the Dam Safety Assurance Programme	
Date that approval of the Dam Safety Assurance Programme expires	
Relevant regional authority	
Owner	
Name of owner	
Name of operator (if different from owner)	
Contact person	
Postal address	
Residential address	

**FORM 3. CONTINUED**

<b>Compliance</b>	
All procedures in the Dam Safety Assurance Programme have been complied with during the previous 12 months.	
Date	
Signature of dam owner	
Full name of dam owner	
<b>Certificate of recognised engineer</b>	
I have reviewed the owner's reports and other documents relating to the procedures in the safety assurance programme that the owner has followed in the previous 12 months. All procedures in the Dam Safety Assurance Programme have been complied with during the previous 12 months.	
I am a category A recognised engineer in accordance with section 149 of the Building Act 2004.	
I have attached evidence that I am a category A recognised engineer.	
Date	
Signature of recognised engineer	
Full name of recognised engineer	
CPEng registration number	



## Appendix D: Glossary of terms

The **Act** refers to the Building Act 2004.

**Artificial barrier** is a human-made or modified structure causing the retention of liquid.

**Appurtenant structure(s)** means a structure that is integral to the proper functioning of the dam. This might include, but is not limited to, such facilities as intake towers, powerhouse structures, tunnels, canals, penstocks, low-level outlets, surge tanks and towers, gate hoist mechanisms and their supporting structures, and all critical water control and release facilities. Appurtenant structure(s) also include mechanical and electrical control and standby power supplying equipment located in powerhouses or in remote control centres.

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

**Confirmed dam safety deficiency** exists when situations or conditions are identified which indicate that dam failure scenarios are possible such that dam safety acceptance criteria are not met.

**Critical and major infrastructure** includes power supply, water supply, gas supply, transportation systems, wastewater treatment, network telecommunications systems, emergency facilities, and large industrial, commercial, or community facilities, the loss of which would have a significant impact on a community. It also includes the dam, if the service the dam provides is critical to the community and that service cannot be provided by alternative means.

**Dam Compliance Certificate** is a dam compliance certificate as referred to in section 150 of the Act, and discussed in section 4.9 above.

A **Dam Safety Assurance Programme** is the requirement for medium or high potential impact dams to have a programme in place to maintain their integrity, ongoing monitoring, maintenance and repair. The Dam Safety Assurance Programme must be submitted to the local regional authority.

**Department** refers to the Department of Building and Housing.

**Depth** refers to the height of the reservoir at the base of the upstream dam wall or artificial barrier.

**Emergency** (in terms of dam operation) is any condition that develops naturally or unexpectedly, endangers the integrity of the dam and downstream property or life, and requires immediate action.

**Emergency action plan** is a document which contains procedures for dealing with various emergencies, as well as communication directories and inundation (flood) maps showing upstream and downstream water levels and times of arrival of floods that would result from the failure of the dam or its appurtenances.

**Holding capacity** refers to volume or peak flow of the flood that would cause the reservoir level to reach the crest of the dam with full use of the spillway(s) of the dam.

**Liquid** includes sediment and tailings that would be mobilised in the event of a dam failure.

**PAR (population at risk)** population at risk means the number of people likely to be affected by inundation greater than 0.5 metres.

**PIC (potential impact category)** as defined in Building (Dam Safety) Regulations 2008. Further information can be found in section 4.4 of this guide.

**PIM** (Project Information Memorandum), when referring to dams, is a document issued by both the regional and territorial authorities that includes information relevant to proposed building work.

**Potential dam safety deficiency** exists when situations or conditions are identified which indicate that dam failure scenarios are possible such that dam safety acceptance criteria may not be met.

**Retain** means to keep or hold in a particular place, condition or position.

**Recognised Engineer** means an engineer described in section 149 of the Act and section 4.10 above.

**Regional authority** means –

- (a) regional council; or
- (b) a unitary authority

**Regional council** has the meaning given to it by section 5 (1) of the Local Government Act 2002.

**Sediment** is any particulate matter that can be transported by fluid flow.

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

## Appendix E: Useful contacts

\*These contacts include the names of all the regional authorities in New Zealand.

Organisation **Auckland Regional Council**  
Phone 0800 80 60 40  
Facsimile 09 366 2155  
Postal Private Bag 92-012  
Auckland 1142  
Web [www.arc.govt.nz](http://www.arc.govt.nz)

Organisation **Department of Building and Housing**  
Phone 0800 242 243  
Facsimile 04 494 0290  
Postal PO Box 10-729  
Wellington  
Email [info@dbh.govt.nz](mailto:info@dbh.govt.nz)  
Web [www.dbh.govt.nz](http://www.dbh.govt.nz)

Organisation **Environment Canterbury**  
Phone 0800 324 636  
Facsimile 03 365 3194  
Postal PO Box 345  
Christchurch  
Email [ecinfo@ecan.govt.nz](mailto:ecinfo@ecan.govt.nz)  
Web [www.ecan.govt.nz](http://www.ecan.govt.nz)

Organisation **Environment Southland**  
Phone 03 211 5115 or  
0800 76 88 45 (Southland only)  
Facsimile 03 211 5252  
Postal Private Bag 90116  
Invercargill  
Web [www.es.govt.nz](http://www.es.govt.nz)

Organisation **Environment Waikato**  
Phone 0800 800 401  
Facsimile 07 859 0998  
Postal PO Box 4010  
Hamilton East 3247  
Web [www.ew.govt.nz](http://www.ew.govt.nz)

Organisation **Gisborne District Council**  
Phone 0800 653 800  
Facsimile 06 867 8076  
Postal Gisborne District Council  
PO Box 747  
Gisborne  
Web [www.gdc.govt.nz](http://www.gdc.govt.nz)

Organisation **Greater Wellington Regional Council**  
Phone 0800 496 734  
Facsimile 04 385 6960  
Postal PO Box 11646  
Wellington 6142  
Web [www.gw.govt.nz](http://www.gw.govt.nz)

Organisation **Hawkes Bay Regional Council**  
Phone 0800 108 838  
Postal Private Bag 6006  
Napier 4142  
Email [info@hbrc.govt.nz](mailto:info@hbrc.govt.nz)  
Web [www.hbrc.govt.nz](http://www.hbrc.govt.nz)

Organisation **Horizons Regional Council**  
Phone 0508 800 800  
Facsimile 06 952 2929  
Postal Private Bag 11025  
Palmerston North 4442  
Web [www.horizons.govt.nz](http://www.horizons.govt.nz)

Organisation **IPENZ Institution of Professional Engineers New Zealand**  
Phone 04 473 9444  
Facsimile 04 474 8933  
Postal PO Box 12241  
Wellington  
Email [ipenz@ipenz.org.nz](mailto:ipenz@ipenz.org.nz)  
Web [www.ipenz.org.nz](http://www.ipenz.org.nz)

Organisation **Marlborough District Council**  
Phone 03 520 7400  
Facsimile 03 520 7496  
Postal PO Box 443  
Blenheim 7240  
Email mdc@marlborough.govt.nz  
Web www.marlborough.govt.nz

Organisation **Nelson City Council**  
Phone 03 546 0200  
Facsimile 03 546 0239  
Postal PO Box 645  
Nelson  
Email enquiry@ncc.govt.nz  
Web www.nelsoncitycouncil.co.nz

Organisation **New Zealand Gazette<sup>3</sup> C/-  
Department of Internal Affairs**  
Phone (04) 470 2930  
Facsimile (04) 470 2932  
Postal PO Box 805  
Wellington  
Email gazette@parliament.govt.nz  
Web www.dia.govt.nz

Organisation **New Zealand Society On Large  
Dams (NZSOLD)**  
Phone 04 473 9444  
Facsimile 04 474 8933  
Postal PO Box 12-241  
Email nzsold@ipenz.org.nz  
Web www.ipenz.org.nz/nzsold

Organisation **Northland Regional Council**  
Phone 0800 002 004  
Facsimile (09) 438 0012  
Postal Private Bag 9021  
Whangarei 0140  
Email mailroom@nrc.govt.nz  
Web www.nrc.govt.nz

Organisation **Otago Regional Council**  
Phone 0800 474 082  
Facsimile 03 479 0015  
Postal Private Bag 1954  
Dunedin  
Web www.orc.govt.nz

Organisation **Taranaki Regional Council**  
Phone 06 765 7127  
Facsimile 06 765 5097  
Postal Private Bag 713  
Stratford 4352  
Email info@trc.govt.nz  
Web www.trc.govt.nz

Organisation **Tasman District Council**  
Phone 03 543 8400  
Facsimile 03 543 9524  
Email info@tdc.govt.nz  
Postal Private Bag 4  
Richmond 7050  
Web www.tdc.govt.nz

Organisation **West Coast Regional Council**  
Phone 03 768 0466  
Facsimile 03 768 7133  
Email info@wrc.govt.nz  
Postal PO Box 66  
Greymouth  
Web www.wrc.govt.nz

<sup>3</sup> The New Zealand Gazette is the official newspaper of the government of New Zealand and includes notifications about the Building (Dam Safety) Regulations 2008 and documents incorporated in the Regulations (such as the NZSOLD Dam Safety Guidelines).

## Documents

The following documents are available from [www.dbh.govt.nz/bofficials-dam-safety](http://www.dbh.govt.nz/bofficials-dam-safety) or the dam owner may contact the Department to order (or find out where to order) a free copy of these on free phone 0800 242 243.

- **Building Act 2004 and the Building (Dam Safety) Regulations 2008**
- *Guide to the Dam Safety Scheme*
- **Building Infringement (Offences, Fees, and Forms) Regulations 2007**
- The Dam Safety Scheme forms
- **A Guide to Building Act Determinations.**

For further information on BCA accreditation please see [www.dbh.govt.nz/bofficials-bca](http://www.dbh.govt.nz/bofficials-bca).

The Department's publication Codewords No.8, Oct/Nov 2005 discusses the regional authorities' new role: [www.dbh.govt.nz/codewords-8-article-5](http://www.dbh.govt.nz/codewords-8-article-5)

NZSOLD *Dam Safety Guidelines* (2000)  
[www.ipenz.org.nz/nzsold/publications.htm](http://www.ipenz.org.nz/nzsold/publications.htm)

The Department wishes to thank the following organisations and companies for their assistance with the development of this booklet:

NSW Department of Energy and Water  
Meridian Energy Ltd  
Contact Energy Ltd  
The Regional Authority Working Group

New Zealand Government

Published in September 2008  
by the Department of Building and Housing

This document is also available on the  
Department's website: [www.dbh.govt.nz](http://www.dbh.govt.nz)

ISBN: 978-0-478-32733-5 (Print)  
ISBN: 978-0-478-32734-2 (Web)

