



Wellington Regional Council  
18 AUG 2006

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Proposed Dangerous Dam Policy  
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Greater Wellington Regional Council  
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WELLINGTON

FILE REF:	
ENV/10/08/01	
Doc. No. 362315	
Referred to	Date/Ini
Nigel	X
S. Hornel	
	File: 301/60/011
	Ref: LW:kp
	16 August 2006

Dear Sir/Madam

**SUBMISSION ON PROPOSED DANGEROUS DAM POLICY**

I have reviewed the draft of your proposed dangerous dam's policy and make the following comments:

- As background to my comments, Upper Hutt City Council owns and operates 1 dam within the City. It is the Heretaunga Detention Dam, which only fills during a storm and the collected runoff is then released under controlled conditions once the storm has abated. The dam is monitored, controlled by telemetry, and visual inspection to documented criteria.
- Having read the Department of Building & Housing Proposed Provisions for Dams and your own Proposed Dangerous Dam Policy, both refer to a dam as retaining 3 or more metres of depth and holding 20,000 or more cubic metres of water. The Heretaunga Detention Dam can retain up to 350,000 cubic metres if completely full but only about 1% of its 870 metre length is greater than 3 metres. The question I therefore ask is whether or not it will come within your proposed policy.
- One of the criteria for defining a dangerous dam is a medium or high potential intake dam that may fail under a moderate earthquake. For a detention dam which is designed to retain runoff during a storm, it is highly unlikely that a moderate earthquake will occur at the same time.
- Section 2.7 - Identification of Dam Owners. I don't believe that you can make the statement that most dams will be the direct responsibility of the owner of the land on which they are located. In our situation we are not the landowner. The dam is constructed on the outlet of a public drain, with a flood ponding area over Crown land by agreement.

Thank you for the opportunity to make some comments. We do not wish to be heard at any hearings.

Lachlan Wallach  
DIRECTOR INFRASTRUCTURE SERVICES

# Proposed Recommendations of Greater Wellington Regional Council on Submissions on the Proposed Dangerous Dam Policy

## Submission 1: Upper Hutt City Council

### 1a. Decision Requested In Submissions

The policy should recognise that a dam owner may not necessarily be the landowner.

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### 1b. Recommend Policy Changes

In section 2.7, amend the first paragraph as follows:

Whilst most dams will be the direct responsibility of the owner of the land on which they are located, there will be cases where the dam owner is not the same as the land owner. Where the dam owner and landowner are different Greater Wellington will deal primarily with the dam owner and will make every effort to keep the landowner informed.

There may also be circumstances where a landowner will claim that they ‘inherited’ the dam, and were not responsible for either its construction or its maintenance. It is likely however, that there will be few cases where a landowner could claim that they purchased the land in circumstances where they could not reasonably have known there was a dam on the property.

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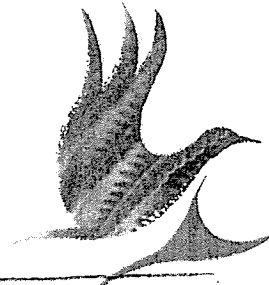
### 1c. Reasons for the Recommendations

Recognising that a dam owner may not necessarily be the land owner provides clarity for those dam owners who are in this situation.

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Karori Sanctuary  
21 August 2006

Wellington Regional Council  
22 AUG 2006



Nigel Corry,  
Divisional Manager, Environment Management  
Greater Wellington Regional Council  
PO Box 11-646  
WELLINGTON 6142

FILE REF	
ENV/10/08/01	
Doc. No. = 6562	
referred to	Date/Ini
S Hornal.	

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www.sanctuary.org.nz

Dear Nigel,

**Proposed Dangerous Dams Policy 2006**

Thank you for the opportunity to comment on the proposed Policy. The land over which Karori Wildlife Sanctuary has a lease from Wellington City Council includes the now decommissioned Karori Reservoir area and the two associated dams. While the Sanctuary does not own or have primary responsibility for the dams, we have a significant interest in the aesthetic, wildlife habitat and safety issues associated with the lakes and dams. Dam safety and contingencies form a part of our own building and safety planning.

The Sanctuary does maintain on going daily observation of the dams and lakes. Any problems are reported to Capacity as water supply agents for the City Council. DamWatch does scheduled surveys and assessments of both dams for Capacity. Water levels in the now dewatered upper lake are monitored by City Council staff via a telemetry system, and valve adjustments made during high inflow events when required. The Sanctuary has a small role in opening and closing spillway gates from the lower dam and bypass tunnel at the wetland at the head of this lake to manage high flows and summer algal blooms.

We offer the following comments on the proposed policy.

Firstly, there are implications from a visitor point of view of declaring dams, such as those at Karori, as 'dangerous'. We are uncertain whether the definition of 'dangerous dams' in the Building Act would include the Karori dams and make the following points for consideration in your policy:

**Section 1.4 – Definition of dangerous dams**

All dams are inherently dangerous. The particular definitions the Building Act seeks to address raises a number of issues:

1. "...likely to collapse... in the ordinary course of events... moderate earthquake... moderate flood". It is not clear how this assessment is made. It could be quite arbitrary. You have noted (Section 2.4) that these terms have yet to be defined in regulations yet to be drafted.

The Karori dams have existed for over 100 years. They have experienced numbers of earthquakes and floods in that time.

Since decommissioning, the top dam has been dewatered by over 11m. Despite straddling the Wellington Fault, the remaining lake water now sits at the very base of the dam and exerts minimal pressure on the dam. Any catastrophic failure of the dam and flood of water seems unlikely.

2. "... leaky dam." All dams leak, even new ones. Capacity and DamWatch are aware of leaks in the lower dam that they have investigated, some repaired, others are monitored and other remedial actions taken, like lowering lake water levels.

The Karori dams are regularly maintained and surveyed through Capacity. One dam is dewatered. Water levels are continuously monitored in the same dam and additional valves opened to release flood waters when necessary. Both dams are observed daily by Sanctuary field staff and ensure reporting directly to Capacity officers if concerns arise.

These might be considered mitigating factors in whether a dam is likely to be dangerous or not. However, the definition of dangerous dam and the Policy does not recognise such mitigation in deciding whether a dam is dangerous.

### **Section 2.2 – Identification process**

The Policy states that GWRC will compile a list of "potentially dangerous dams". We suggest such compilation needs to be carefully done to avoid unnecessary alarm, while clearly needing to identify dams at risk. Karori dams may potentially be part of that list, but that does not mean they are dangerous until confirmed either way by Council investigation. This may be a nuance lost on the public.

In summary the Sanctuary Trust, City Council, DamWatch and Capacity are all involved in one way or another in identifying, monitoring and managing any risks associated with these two structures. The Sanctuary is committed to facilitating staff and visitor safety – the two dams in the Sanctuary are a prominent part of safety considerations. We will continue to liaise closely with Wellington City Council and Capacity officials in adhering to agreed lake and dam management regimes and ensuring the ongoing integrity of both dams.

However, if either or both of the Karori Dams are declared "dangerous" we will be faced with public and media concern over the "risk" to public safety that the word implies. They will obviously want to know what is being done to remove any danger. We would like to suggest that if "dangerous" is to be used in this document it either be graded, or provided with appropriate qualifiers which recognise management regimes and mitigation activities currently being undertaken, or required of, those responsible for their management.

Yours sincerely

Nancy McIntosh-Ward  
Chief Executive



Pp Keith Calder  
Valley Manager

# Proposed Recommendations of Greater Wellington Regional Council on Submissions on the Proposed Dangerous Dam Policy

## Submission 2: Karori Wildlife Sanctuary

### 1a. Decision Requested In Submissions

It is not clear how the assessment of a dangerous dam is made.

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### 1b. Recommend Policy Changes

In Section 2.4 amend the second paragraph as follows

Once regulations that prescribe the standards and criteria used in section 153 are Gazetted, Greater Wellington will use those definitions to determine if dam is dangerous. Greater Wellington officers and technical specialists will use “The New Zealand Dam Safety Guidelines (2000)”, or any subsequent update or recognised replacement for that guideline, for guidance in determining if a dam is dangerous.

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### 1c. Reasons for the Recommendations

Clarification of second paragraph makes it clear that Greater Wellington officers and technical specialists will determine whether a dam meets the dangerous dam criteria.

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## **2a. Decision Requested In Submissions**

The compilation of a list of “potentially dangerous dams” needs to be done carefully to avoid unnecessary alarm, while clearly needing to identify dams at risk.

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## **2b. Recommend Policy Changes**

In Section 2.2, amend first and second paragraph as follows:

There is a continuum of approaches that regional authorities can adopt for the identification of dangerous dams. These range from a totally passive approach where the regional authority acts only when a ~~potentially dangerous~~ dam has been brought to its attention, to the proactive comprehensive inspection of all ~~potentially dangerous~~ dams in its region.

Greater Wellington will compile a list of ~~potentially dangerous~~ dams requiring safety assessment over time in response to owners providing information/dam classifications and complying with the dam safety assurance process and in response to complaints or relevant information. Those dams requiring safety assessment will be followed up with an investigation by Council officers assisted, as considered appropriate, by technical specialists to establish the nature of the danger or the state of the dam.

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## **2c. Reasons for the Recommendations**

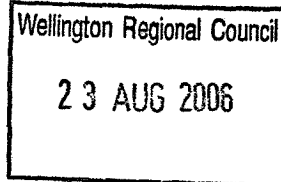
Use of the term ‘*potentially dangerous dams*’ implies another category of dam that was not envisaged by the Act. Replacing the term with ‘*dams requiring safety assessment*’ avoids the implication that a dam has been judged to be dangerous while it is undergoing an assessment to determine whether in fact it meets the dangerous dam criteria set by the Act and regulations.

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File: D2426

21 August 2006

Nigel Corry  
Greater Wellington  
PO Box 11 646  
Wellington



FILE REF	ENV/10/08/01
Doc No	3620
Requested by	S. Hornal
Date in	

capacity

Dear Nigel,

**Submission on Greater Wellington's Proposed Dangerous Dams Policy 2006**

Thank you for your letter of 21 July 2006 regarding the new Building Act provisions affecting dams and Greater Wellington's Proposed Dangerous Dams Policy 2006.

Capacity's comments are.

**Section 1.4 - Definition of dangerous dams**

The definition is that a dangerous dam is a medium or high Potential Impact Classification dam that leaks.

Capacity's opinion is that a medium or high Potential Impact Classification dam that leaks, does not necessarily mean that the dam is dangerous. **In our opinion the leakage would need to have the potential to cause the dam to collapse. It requires an opinion from a dam engineering specialist to determine whether this is the case."**

It is our opinion that the definition requires review.

Yours sincerely

Handwritten signature of Tony Jaegers.

**Tony Jaegers**  
Investigations & Design Engineer

Ph 910 3846

# Proposed Recommendations of Greater Wellington Regional Council on Submissions on the Proposed Dangerous Dam Policy

## Submission 3: Capacity

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### 1a. Decision Requested In Submissions

Capacity requested the definition of dangerous dam be reviewed as a dam that leaks, does not necessarily mean the dam is dangerous. The leakage would need to have the potential to cause the dam to collapse. It requires an opinion from a dam engineering specialist to determine whether this is the case.

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### 1b. Recommend Policy Changes

Section 1.4, Definition of dangerous dams

No policy change.

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### 1c. Reasons for the Recommendations

The definition of a dangerous dam is defined by the Act. Greater Wellington's proposed policy must reflect the definitions in the Act.

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Engineers New Zealand

Wellington Regional Council  
30 AUG 2006

The New Zealand Society on Large Dams

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FILE REF	
ENV/10/08/01	
28 <sup>th</sup> August 2006	
Doc. No. 365235	
Referred to	Date/In
S Hornal	

Sharon Hornal  
Greater Wellington Regional Council  
P.O Box 11646  
Wellington 6142

Dear Sharon,

Greater Wellington Regional Council - draft Policy on Dangerous Dams 2006  
Submission on behalf of the New Zealand Society on Large Dams (NZSOLD)

In reference to the draft Policy on Dangerous Dams 2006, the New Zealand Society of Large Dams (NZSOLD) would like to thank the Greater Wellington Regional Council for the opportunity to make a submission on the draft policy.

We note that the date for submissions on the draft policy has closed and due to an oversight NZSOLD only recently became aware of this. We have received advice from Paula Hammond that our submission can still be considered.

**Introduction**

NZSOLD is a technical group of the Institution of Professional Engineers New Zealand (IPENZ). NZSOLD is made up of Corporate Members including the owners of large, medium and small dams, Regional, District and City Councils, consultants and contractors providing services to the dam industry, and a number of individual members and stakeholders.

The objectives of NZSOLD are as follows:

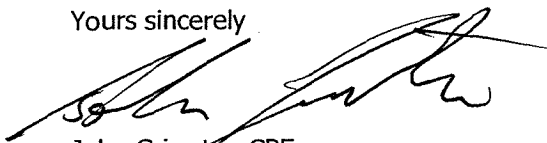
- To promote best practice in the development, operation, maintenance and refurbishment of dams and their associated impoundments throughout New Zealand.
- To integrate industry best practice into the regulatory processes associated with the dam and impoundment management industry in New Zealand.
- To be recognised as a credible and respected professional body, and the national focus for all matters relating to dams and their associated impoundments in New Zealand.

NZSOLD has provided advice to the DBH in the preparation of the Building Act 2004 and the proposed regulations governing dam safety, it has been consulted by the group representing the Regional Authorities concerning dangerous dams policies.

The following submission represents the views held by NZSOLD in its capacity as a representative of the wider dam industry. However, we understand that many of our members will be making individual submissions to your proposals from their own perspective, and we respect their views. This submission does not represent the position of our Regional Council members as they consulting directly with a Regional Council representative group on dangerous dams policies.

We confirm that we do not wish to be heard in support of our submission, but would be happy to discuss our submission with you if specific input is required.

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Grimston', written over a horizontal line.

John Grimston CPE

On Behalf of the  
Management Committee of NZSOLD

P:\22366\Dangerous Dams\2006\_08\_28 NZSOLD submission GWRC.doc

<b>General Submission comments.</b>	
<i>Comment –</i> NZSOLD are generally in support of the aims of the Building Act 2004 part concerned with the safety of dams, and with the provision of powers to the Regional Authorities to act to ensure public safety in the event that the safety of a dam falls below tolerable safety criteria	<i>Recommendation –</i> N/A
<b>Format and Content of draft Dangerous Dams Policy 2006.</b>	
<i>Comment –</i> We are aware that the Regional Authorities have worked collaboratively to develop a template dangerous dams policy, which has been adopted by the majority of the R.C's as the basis of their regional Dangerous Dams policy. Consultation on the template policy by the group representing the R.C's has allowed refinements to this template policy. The RC's whose draft policies have been notified most recently include these refinements. NZSOLD has reviewed a number of these draft policies and believes that the template policy, and refinements reflected in the most recently notified draft policies provide a sound basis for a consistent policy on Dangerous Dams applicable throughout New Zealand. It is our view that a consistent policy for all Regional Authorities will benefit owners with dams in more than one region, and dam safety engineers who will be required to work across multiple regions. It will also mean that any future court outcomes in relation to the Dangerous Dams policies will apply, without confusion, to all regions.	<i>Recommendation –</i> In the revision of its draft policy, GWRC continues its efforts to achieve consistency across the dangerous dams policies of all the Regional Councils.
<i>Provision – General Comment</i>	
<i>Comment –</i> The terminology concerning the potential impact classification of a dam is not applied consistently throughout the draft policy. In some sections there is reference to 'potential impact' others to 'Medium or High Impact Dams' The Building Act refers to 'Potential Impact Classification', this term or the abbreviation PIC, should be used consistently.	<i>Recommendation –</i> Amend the text throughout the policy to ensure consistent use of terminology in relation to the Potential Impact Classification of Dams.

<b>Provision – Section 1.1 - Purpose of the Building Act</b>	
<b>Comment –</b> While the text in this section comes directly from the Act, it is difficult to see how points (a) – (d) relate to dams.	<b>Recommendation –</b> Seek to modify the text of Section 1.1 so it better illustrates the relationship the Building Act has with the construction, and safe operation of dams.
<b>Provision – Section 1.4 - definition of dangerous dams.</b>	
<b>Comment –</b> The definition of a ‘dangerous dam’ is given, using text directly from the Building Act. The definition in the Building Act establishes a ‘two–step’ test for a dam to be considered dangerous. The way this is worded in the Act is open to interpretation. Additional text is necessary to provide clarity in the application of the definition.	<b>Recommendation –</b> To avoid uncertainty, provide additional text that clarifies the definition of a ‘dangerous dam’, and that acknowledges for a dam to be dangerous it must first have a High or Medium Potential Impact Classification.
<b>Provision –Section 1.5 - Policy Development Process</b>	
<b>Comment –</b> States policy will be reviewed every five years, and may be reviewed when regulations are gazetted.	<b>Recommendation –</b> Also include text to state the policy will be reviewed in the event of a change to the relevant sections of the Building Act, and on changes to regulation being gazetted.

**Provision – 2.0 Policy Approach – Background – Paragraph 1**

*Comment –*

The purpose of dangerous dams provisions of the Building Act 2004, are to give the Regional Councils powers to act to in the interests of public safety in the event that a dam has been found to fall below *minimum safety criteria*, and the owner has not taken appropriate action.

The dams referred to in paragraph 1 are well designed and built, and their safety is managed by a responsible owner, under a Dam Safety Assurance Programme (DSAP).

It concerns NZSOLD that members of the public who are unaware of these facts may on reading the draft policy erroneously associate these dams with dangerous dams.

*Recommendation –*

Remove first paragraph.

**Provision – 2.0 Policy Approach - Background**

*Comment –*

In giving the general overview of dams and potential hazards to dams the policy approach –background does not specifically address the intent of the dangerous dams policy.

The intent of the part of the Building Act concerned with Dams is to ensure that

- all dams are classified to identify those with a High or Medium Potential Impact
- the safety of all High and Medium potential impact classification dams is managed by their owners, within an approved Dam Safety Assurance Programme (DSAP).
- a dams DSAP meets at least the minimum requirements established by the NZSOLD dam safety guidelines.
- public assurance of the safety of these dams is achieved by a process of reporting to the appropriate Regional Authority.

The dangerous dams provisions of the Building Act 2004, are to give the Regional Authorities powers to act to in the interests of public safety in the event that a dam has been found to fall below minimum safety criteria, and the owner has not taken appropriate action.

*We note that at this time, these minimum safety criteria are yet to be*

*Recommendation –*

Include text in the policy approach to state the scope of the Building Act sections concerned with Dam Safety, and specifically state the purpose of the dangerous dams policy within that framework.

<i>established regulation.</i>	
<b>Provision – Section 2.2 Identification Process</b>	
<p><i>Comment –</i> Section Refers to '<i>potentially dangerous dams</i>'.</p> <p>We consider this terminology is inappropriate for a number of reasons;-</p> <ul style="list-style-type: none"> <li>○ The term '<i>potentially dangerous dam</i>' implies a category of dam that is not envisaged in the Act.</li> <li>○ The term is inconsistent with terms used in the dams industry</li> <li>○ Such as list is open to misinterpretation and misuse.</li> <li>○ The Dangerous Dams Provisions of the Act apply only to dams which fail to meet defined minimum criteria, and are classified as '<i>dangerous dams</i>'. The Act intends that the safety of all other dams is managed through the implementation of an approved DSAP.</li> <li>○ It is important to avoid the implication that the dam has been judged to be dangerous while it is undergoing interim processes by which such a classification may be reached.</li> </ul> <p>From the process described in paragraph 2, we assume this intended classification refers to dams that require further investigation to determine whether they are dangerous.</p> <p>We consider that a more appropriate term would '<i>dams requiring safety assessment</i>'</p> <p>We believe that the list of '<i>dams requiring safety assessment</i>', and '<i>dangerous dams</i>' should be separate, to avoid the adverse implication a common list gives.</p>	<p><i>Recommendation –</i> Replace the term '<i>potentially dangerous dams</i>', with '<i>dams requiring safety assessment</i>'.</p> <p>Adopt separate lists for '<i>dams requiring safety assessment</i>' and '<i>dangerous dams</i>'.</p>
<p><i>Comment – Paragraph 2</i> Text should be added to the paragraph to clarify that the purpose of this action is to determine whether a dam meets the specific criteria for a dangerous dam.</p>	<p><i>Recommendation –</i> Add the following sentence to the end of the final paragraph: "The purpose of this action is to determine whether a dam meets the specific criteria for a dangerous dam."</p>
<p><i>Comment –</i> The policy does not include a step in which the Council makes a determination that a dam is classified as dangerous. This is necessary in order for the provisions of the Act to be applied.</p>	<p><i>Recommendation –</i> Include text to clarify how this determination will be made.</p>
<p><i>Comment –</i></p>	<p><i>Recommendation –</i></p>

<p>The policy does not include a step in which the Council makes a determination that a dam is no longer classified as dangerous once actions have been taken to reduce or remove the danger. This is necessary to ensure the public are informed that the danger has been reduced or removed.</p>	<p>Include text to clarify how this determination will be made.</p>
<p><i>Comment –</i> We consider that the criteria proposed to define dams which would 'fail in the normal course of events', and those which would fail in a specific periodic event such as a 'moderate flood or earthquake' differ significantly in risk management terms. The attached letter from NZSOLD to the DBH clarifies this issue. We believe that it would be helpful in the administration of 'dangerous dams' if dams which would 'fail in the normal course of events', are categorised separately from those which would fail in a specific periodic event such as a 'moderate flood or earthquake'.</p>	<p><i>Recommendation –</i> Revise categorisation to differentiate between those dangerous dams that may fail in the normal course of events and those that may fail in a moderate flood or earthquake event. We suggest;- <b>Category 1</b> – Medium and High PIC Dams which are likely to collapse during the ordinary course of events; <b>Category 2</b> – Medium and High PIC Dams which are likely to collapse in a moderate flood; <b>Category 3</b> – Medium and High PIC Dams which are likely to collapse in a moderate earthquake. A sub-classification of each category would be to specify if the dam has a heritage classification.</p>
<p><i>Provision –2.4 Assessment Criteria</i></p>	
<p><i>Comment –</i> We support the intent to use the NZSOLD dam safety guidelines in the evaluation of 'dams requiring safety assessment'</p>	<p><i>Recommendation –</i> N/A</p>
<p><i>Provision – 2.5 Taking action on dangerous dams</i></p>	
<p><i>Comment –</i> It is difficult to envisage a situation where it would be possible for the Regional Council to reach a conclusion that a dam was dangerous without already having the involvement of the dam owner. For the situation where there are real concerns about the safety of a dam and an owner was not co-operative it would be appropriate to set out the means available to Regional Councils to compel an owner to provide access to the dam, dam safety records etc.</p>	<p><i>Recommendation –</i> Add text to Section 2.5 that identifies what powers Regional Councils have to compel parties to provide site access and documentation etc.</p>
<p><i>Comment –</i> Section's 2.5.3 and 2.5.4 do not provide any direction in relation to informing people that the dam owner has completed actions to reduce or remove the danger, and the dam is no longer considered 'dangerous'. If GWRC has;-</p>	<p><i>Recommendation –</i> Provide additional text in Sections 2.5.3, and 2.5.4 outlining that GWRC will advise informed or notified parties when the danger has been removed.</p>

<p>'provided information to those likely to be immediately affected in the event of a dam failure' – Section 2.5.3, or 'notified potentially affected communities downstream' and 'sent copies to interested parties' – Section 2.5.4 Then it also has an obligation to advise those parties when the danger has been removed.</p>	
<p><b>Provision – 2.5 Taking action on dangerous dams – Section 2.5.4</b></p>	
<p><i>Comment –</i> In order to provide dam owners with certainty it is appropriate that the text of Section 2.5.4 be amended to acknowledge GWRC will be confirming the status of the dam against the specific criteria of the Building Act, and Dam safety regulations.</p>	<p><i>Recommendation –</i> Amend the first sentence of Section 2.5.4 as follows: "Where the Council has confirmed that a dam is dangerous in accordance with the specified criteria..."</p>
<p><i>Comment –</i> Paragraph 4 of Section 2.5.4 notes that a copy of any Notices will be sent to any party with an interest in the land on which the dam sits. No information is provided in the policy as to examples of parties that may have an 'interest' in the land on which the dam sits.</p>	<p><i>Recommendation –</i> Amend the fourth paragraph of Section 2.5.4 to clarify what parties would be an example of someone having an interest in the land on which the dam sits.</p>
<p><b>Provision – 2.5.5 Dam Break analysis.</b></p>	
<p><i>Comment –</i> States 'a dam break analysis may be required.' The Act all dams requires all dams be classified, and all High and Medium PIC dams have an approved DSAP. NZSOLD Dam safety guidelines require that the DSAP for High and Medium PIC dams includes an Emergency Management Plan. This requires a Dam Break study to be carried out, the results of the Dam Break Study should be provided to the RC and the Regional Civil Defence.</p>	<p><i>Recommendation –</i> Replace text - 'a dam break analysis may be required.' With 'if a dam break study is not available as part of an owners DSAP, it will be necessary to provide one.'</p>
<p><b>Provision – 2.5.9 Dispute by owner of classification</b></p>	
<p><i>Comment –</i> NZSOLD supports the use of an independent party to determine any appeals over the classification of a dam as a 'dangerous dam'.</p>	<p><i>Recommendation –</i> N/A</p>
<p><b>Provision – Section 2.5 Guiding principles for dealing with dam owners</b></p>	
<p><i>Comment –</i> The section setting out the guiding principles for dealing with dams owners is located towards the rear of the policy.</p>	<p><i>Recommendation –</i> Bring this section forward in the policy, so that it immediately follows the section dealing with identification of dangerous dams.</p>



<p>Most readers will find this section only after reading the actions the Regional Council can take in exercising sections 154 to 159 of the Building Act.</p> <p>Bringing this section more towards the front of the policy would help establish more clearly the consultative approach the Regional Council will initially take when dealing with dam owners.</p>	
<p><b>Provision –Section 2.9 Recording a Dam’s Status</b></p>	
<p><i>Comment –</i></p> <p>We note in the text that ‘ the status of requirements for improvement or the results of improvement’ will be noted in the register of all dangerous dams.</p> <p>The bulleted list of information to be kept on file does not include reference to this tracking of reduction of danger or any steps to verify that the dam is no longer dangerous.</p>	<p><i>Recommendation –</i></p> <p>The bulleted information to be kept on file should include;-</p> <ul style="list-style-type: none"> <li>○ Status of actions set out in risk reduction plan</li> <li>○ Status and verification that the danger has been reduced or removed to the satisfaction of the R.C</li> <li>○ A statement to confirm that the dam is no longer considered dangerous</li> </ul>

# **Proposed Recommendations of Greater Wellington Regional Council on Submissions on the Proposed Dangerous Dam Policy**

## **Submission 4: New Zealand Society on Large Dams**

### **1a. Decision Requested In Submissions**

Amend the text throughout the policy to ensure consistent use of terminology in relation to the Potential Impact Classification of Dams.

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### **1b. Recommend Policy Changes**

No changes required.

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### **1c. Reasons for the Recommendations**

Policy has been checked to ensure consistency of Potential Impact Classification terminology and no changes are required.

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**2a. Decision Requested In Submissions**

Seek to modify the text of Section 1.1 so it better illustrates the relationship the Building Act has with the construction, and safe operation of dams.

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**2b. Recommend Policy Changes**

No changes required.

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**2c. Reasons for the Recommendations**

Section 1.1 comes directly from the Building Act.

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### **3a. Decision Requested In Submissions**

To avoid uncertainty, provide additional text that clarifies the definition of a 'dangerous dam', and that acknowledges for a dam to be dangerous it must first have a High or Medium Potential Impact Classification.

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### **3b. Recommend Policy Changes**

Section 1.4

No change required.

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### **3c. Reasons for the Recommendations**

The way the definition of dangerous dam is written in the policy already reflects that a dam must first have a high or medium impact classification before it is considered to be dangerous or not.

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#### **4a. Decision Requested In Submissions**

Include text to state the policy will be reviewed in the event of a change to the relevant sections of the Building Act, and on changes to regulation being gazetted.

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#### **4b. Recommend Policy Changes**

In Section 1.5 amend the first paragraph as follows

Greater Wellington will follow the special consultative procedure set out in section 83 of the Local Government Act 2002 when developing and adopting this policy, and will have regard to any relevant principles in the Building Act 2004. This policy will be reviewed every five years and in the event of any significant changes to relevant sections of the Act.

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#### **4c. Reasons for the Recommendations**

Future changes to the Act may mean the policy becomes inconsistent. It will, therefore, be necessary to review the policy. The second paragraph of Section 1.5 already states the policy will be reviewed if necessary once the regulations are gazetted.

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### **5a. Decision Requested In Submissions**

Remove the first paragraph of section 2.1. The dams referred to in paragraph one are well designed and built, and their safety is managed by a responsible owner, under a Dam Safety Assurance Programme.

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### **5b. Recommend Policy Changes**

In Section 2.1 amend the first paragraph as follows

In the Wellington Region there are likely to be approximately 34 dams that ~~are captured by~~ may meet the Building Act 2004 definition of dam. In the main, these dams are earth dams and are used for a variety of purposes including water supply, flood control, hydro electric generation, irrigation, farm stock supply and recreation. Only those dams that have a medium or high potential impact will be assessed as to whether they meet the criteria for a dangerous dam.

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### **5c. Reasons for the Recommendations**

Section 2.1 provides background information on the dams and the hydrological/geological setting of the Wellington Region. The recommended changes clarify that not all dams in the region are dangerous.

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## **6a. Decision Requested In Submissions**

Include text in the policy approach to state the scope of the Building Act sections concerned with Dam Safety, and specifically state the purpose of the dangerous dams policy within that framework.

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## **6b. Recommend Policy Changes**

In Section 2.1 amend the fourth paragraph as follows

The dangerous dam provisions of the Act are part of a wider section dealing with dam safety. The dangerous dams provisions give Greater Wellington powers to act in the interests of public safety in the event a dam has been found to meet the dangerous dams criteria. This policy reflects the Council's determination to reduce the risk of dam failure over time in a way that is acceptable in social and economic terms to its ratepayers.

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## **6c. Reasons for the Recommendations**

The addition to section 2.1 clarifies that the dangerous dam policy is only part of a section concerning dam safety within the Building Act and states the scope of the dangerous dam provisions.

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## **7a. Decision Requested In Submissions**

Replace the term 'potentially dangerous dams' with 'dams requiring safety assessment'.

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## **7b. Recommend Policy Changes**

In Section 2.2 amend first and second paragraphs as follows (same as for Submission 2: Karori Wildlife Sanctuary)

There is a continuum of approaches that regional authorities can adopt for the identification of dangerous dams. These range from a totally passive approach where the regional authority acts only when a ~~potentially dangerous~~ dam has been brought to its attention, to the proactive comprehensive inspection of all ~~potentially dangerous~~ dams in its region.

Greater Wellington will compile a list of ~~potentially dangerous~~ dams requiring safety assessment over time in response to owners providing information / dam classifications and complying with the dam safety assurance process, and in response to complaints or relevant information. Those dams ~~assessed as potentially dangerous~~ requiring safety assessments will be followed up with an investigation by Council Officers assisted, as considered appropriate, by technical specialists to establish the nature of the danger or the state of the dam.

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## **7c. Reasons for the Recommendations**

Use of the term '*potentially dangerous dams*' implies another category of dam that was not envisaged by the Act. Replacing the term with '*dams requiring safety assessment*' avoids the implication that a dam has been judged to be dangerous while it is undergoing an assessment to determine whether in fact it meets the dangerous dam criteria set by the Act and regulations.

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### **8a. Decision Requested In Submissions**

Adopt separate lists for ‘dams requiring safety assessment’ and dangerous dams.

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### **8b. Recommend Policy Changes**

In Section 2.2 amend the third paragraph as follows

~~A list of certified dangerous dams will be collated according to the results of the assessments.~~ Once the safety assessments/investigations have been undertaken, those dams that meeting the definition of a dangerous dam as defined by the Act and Regulations will be entered into the dangerous dam register. This list register will categorise the identified dangerous dams according to the following:

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### **8c. Reasons for the Recommendations**

The changes recommended above and in Recommendation 7 clarify that a list of dams requiring safety assessment will be compiled and a register of dangerous dams will be kept.;

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**9a. Decision Requested In Submissions**

Add the following sentence to the end of paragraph two, section 2.2  
‘The purpose of this action is to determine whether a dam meets the specific criteria for a dangerous dam’.

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**9b. Recommend Policy Changes**

In Section 2.2 amend the second paragraph as follows

No change required.

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**9c. Reasons for the Recommendations**

The changes in Recommendations 7b and 8b above negate the need to add the requested sentence.

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### **10a. Decision Requested In Submissions**

Include text to clarify how the Council will make the determination that a dam is dangerous.

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### **10b. Recommend Policy Changes**

In Section 2.4 amend the second paragraph as follows (same as for Submission 2: Karori Wildlife Sanctuary)

Once regulations that prescribe the standards and criteria used in section 153 are Gazetted, Greater Wellington will use those definitions to determine if dam is dangerous. Greater Wellington officers and technical specialists will use “The New Zealand Dam Safety Guidelines (2000)”, or any subsequent update or recognised replacement for that guideline, for guidance in determining if a dam is dangerous.

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### **10c. Reasons for the Recommendations**

Clarification of the second paragraph makes it clear that Greater Wellington officers and technical specialists will determine whether a dam meets the dangerous dam criteria.

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## **11a. Decision Requested In Submissions**

The policy does not include a step in which the Council makes a determination that a dam is no longer classified as dangerous once actions have been undertaken to reduce or remove the danger. Include text to clarify how this determination will be made.

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## **11b. Recommend Policy Changes**

Add new section 2.5.10

### **2.5.10 Removal of a dam from Dangerous Dam Register**

Once a dam owner has undertaken and completed work, to reduce or remove the danger, in accordance with sections 2.5.4 or 2.6, Greater Wellington officers and technical specialists will reassess the dam according to the dangerous dam criteria defined in the Act and Regulations. If the work undertaken by the dam has reduced or removed the danger to such an extent that the dam no longer meets the criteria of a dangerous dam, the dam will be removed from the dangerous dam register. Greater Wellington officers and technical specialists will use “The New Zealand Dam Safety Guidelines (2000)”, or any subsequent update or recognised replacement for that guideline, for guidance in determining if a dam is dangerous.

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## **11c. Reasons for the Recommendations**

The addition of a new section provides for dams being removed from the Dangerous Dam Register once they have been assessed as no longer meeting the dangerous dam criteria. This step was missing from the proposed policy.

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## 12a. Decision Requested In Submissions

Revise categorisation to differentiate between those dangerous dams that may fail in the normal course of events and those that may fail in a moderate flood or earthquake.

We suggest:-

**Category 1** – Medium and High PIC Dams which are likely to collapse during the ordinary course of events

**Category 2** - Medium and High PIC Dams which are likely to collapse in a moderate flood.

**Category 3** - Medium and High PIC Dams which are likely to collapse in a moderate earthquake.

A sub-classification of each category would be to specify if the dam has a heritage classification.

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## 12b. Recommend Policy Changes

In Section 2.2.1 amend category list as follows

### Proposed Categorisation

**Category 1** – ~~high potential impact dams~~ Medium and High potential impact category dams which are likely to collapse during the ordinary course of events

**Category 2** - ~~medium potential impact dams~~ High potential impact category dams which are likely to collapse in a moderate flood or moderate earthquake.

**Category 3** - ~~high or medium impact dams with a heritage classification under the local territorial authority's District Plan or Historic Places Trust register.~~ Medium potential impact category dams which are likely to collapse in a moderate earthquake.

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## 12c. Reasons for the Recommendations

Those dams which would *fail in the normal course of events*, and those which would fail in a specific periodic event such as *moderate flood or earthquake* differ significantly in risk. Categorising the dams according to risk will allow Council to concentrate on those dams that pose the greatest risk first.

A special category for heritage dams has been removed from the recommended categorisation. Section 2.12 of the policy outlines how heritage dams will be dealt with. Heritage dams will fall in the one of the three categories proposed.

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### **13a. Decision Requested In Submissions**

Add text to Section 2.5 that identifies what powers Regional Councils have to compel parties to provide site access and documentation etc.

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### **13b. Recommend Policy Changes**

Add new section 2.5.11

#### **Site Access**

Where a dam owner will not allow a council officer to enter a dam for the purpose of determining whether the dam is dangerous, the council officer may enter under the provisions of section 222 of the Building Act 2004 and section 5 of the Building Amendment Act 2005.

Add Sections 222 – 238 of the Building Act 2004 to Appendix 1 – Relevant Legislation

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### **13c. Reasons for the Recommendations**

The policy did not identify how council officers would gain access to a dam, if the owner prevented access. The Building Act 2004 does not provide powers for the council to compel dam owners to supply documentation in respect of dangerous dams. However, a dam owner must submit a Dam Safety Assurance Programme and it is an offence under section 140 of the Building Act 2004 not to do so. Information in the Dam Safety Assurance Programme is likely to be of use when assessing whether a dam meets the dangerous dam criteria.

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#### **14a. Decision Requested In Submissions**

Provide additional text in sections 2.5.3 and 2.5.4 outlining that Greater Wellington will advise informed or notified parties when the danger has been removed.

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#### **14b. Recommend Policy Changes**

Add further content to new Section 2.5.10 (see recommendation 11b)

Once a dam has been removed from the Dangerous Dam Register notices will be sent to those parties initially contacted under sections 2.5.3 and 2.5.4, informing them that the dam is no longer on the Dangerous Dam Register.

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#### **14c. Reasons for the Recommendations**

The addition of a new section provides for information to be disseminated to all parties once a dam has been removed from the Dangerous Dam Register. This step was missing from the proposed policy.

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### **15a. Decision Requested In Submissions**

Amend the first sentence of Section 2.5.4 as follows: “Where the Council has confirmed that a dam is dangerous in accordance with the specified criteria...”

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### **15b. Recommend Policy Changes**

Section 2.5.4

No change required.

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### **15c. Reasons for the Recommendations**

The beginning of Section 2.5 states “On being satisfied that a dam is dangerous, Greater Wellington will:....” Allowing the submission would create unnecessary repetition.

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### **16a. Decision Requested In Submissions**

Amend the fourth paragraph of Section 2.5.4 to clarify what parties would be an example of someone having an interest in the land on which the dam sits.

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### **16b. Recommend Policy Changes**

In Section 2.5.4 amend the fourth paragraph as follows

Greater Wellington will ensure that copies of notices are sent to the owner of the dam, any occupier and any party with an interest in the land on which the dam sits (as defined by section 155 (2) of the Act) and the relevant Territorial Authority. If appropriate, Greater Wellington will notify potentially affected communities downstream of the dam.

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### **16c. Reasons for the Recommendations**

The recommendation provides further clarification as to who copies of the notice will be sent to.

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### **17a. Decision Requested In Submissions**

Replace text in Section 2.5.5 – “a dam break analysis may be required”. With “if a dam break study is not available as part of an owners Dam Safety Assurance Programme, it will be necessary to provide one.”

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### **17b. Recommend Policy Changes**

In Section 2.5.5 amend the text as follows

A dam break analysis may be required. If a dam break study is not available as part of an owners Dam Safety Assurance Programme, (or if the Dam Safety Assurance programme is not yet complete) it may be necessary to provide one. If requested by Greater Wellington this will be provided by the owner at the owner’s expense within the time frame defined by Greater Wellington in the request.

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### **17c. Reasons for the Recommendations**

Owners of dams that are classified as high or medium potential impact are required to have to have an approved Dam Safety Assurance Programme (DSAP) and submit it to the Regional Council. Part of the DSAP would contain the results of a dam break study that will assist Regional Councils in determining whether a dam meets the dangerous dam criteria.

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### **18a. Decision Requested In Submissions**

Bring Section 2.6 forward in the policy, so that it immediately follows the section dealing with identification of dangerous dams.

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### **18b. Recommend Policy Changes**

Renumber Section 2.6 to Section 2.2A

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### **18c. Reasons for the Recommendations**

Bringing Section 2.6 forward in the policy document will help establish, early on in the policy, the consultative approach greater Wellington will initially take when dealing with dam owners.

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### 19a. Decision Requested In Submissions

The bulleted information in Section 2.9 to be kept on file should include:

- Status of actions set out in risk reduction plan
  - Status and verification that the danger has been reduced or removed to the satisfaction of Greater Wellington
  - A statement to confirm that the dam is no longer considered dangerous.
- 

### 19b. Recommend Policy Changes

In Section 2.9 amend the text as follows

~~Greater Wellington will keep a register of all dangerous dams, noting the status of requirements for improvement or the results of improvement, as applicable. In addition, the following information will be placed~~ The following information will be kept on file for each dangerous dam:

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- The address, map reference and legal description of the dam and the land which supports it;
  - Whether the dam has a heritage listing;
  - A statement that the dam is considered to be dangerous; ~~and~~
  - A copy of all Notices issued under section 2.5 (if applicable);
  - A copy the formal proposal agreed under section 2.2A (if applicable)
  - The date by which ~~strengthening or demolition is required~~ actions to reduce or remove the danger are to be carried out(if known);
  - The status of actions set out in the Notice or formal proposal list above;
  - The status and verification that the danger has been reduced or removed to the satisfaction of Greater Wellington (if applicable); and
  - A statement to confirm that the dam is no longer considered dangerous(if applicable)
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This information will be kept on file indefinitely.

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### 19c. Reasons for the Recommendations

The bulleted list of information to be kept on file did not include any tracking of the reduction or removal of dangers. It is essential to store this information and record updates.

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