



## AUCKLAND REGIONAL POLICY STATEMENT: PLAN CHANGE NO. 10 NATURAL HAZARDS

### DECISION NOTICE OF REGIONAL POLICY STATEMENT: PLAN CHANGE NO. 10 HEARINGS COMMITTEE

File Reference :Decision Notice Hearings Committee RPS10

Date :September 2006

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#### **1. OUTLINE**

As a result of information presented both in submissions, further submissions and at hearings, the RSP Plan Chan No. 10 Hearings Committee has made the following decisions under delegated authority, in relation to Plan Change No. 10 Natural Hazards.

The Committee heard oral submissions and received written evidence on matters relating to Plan Change No.10 to the RPS, from the following submitters and further submitters:

Auckland City Council  
Metrowater Ltd  
North Shore City Council  
Waitakere City Council  
Papakura District Council

Appendix 1 of this Decision Notice lists all the amendments to this section of the RPS that are discussed throughout this report.

#### **2. BACKGROUND**

Auckland Regional Policy Statement Proposed Change 10 was notified on 26 September 2005 to provide clarity regarding the roles and responsibilities with respect to natural hazards. The proposed change also covers a more comprehensive range of natural hazards and hazard management responses. This is to reflect the changes introduced in a number of new pieces of legislation that have been introduced since the ARPS was written; namely the Civil Defence Emergency Management Act 2002, the Building Act 2004 and the Resource Management (Energy and Climate Change) Amendment Act 2004.

Where relevant information has been updated through research, it is reflected in the Proposed Change. This includes further information regarding the region's coastline susceptible to coastal hazard.

Consultation prior to the release of the Proposed Change was held with all TAs in the region. Amendments were made on the proposed changes to chapter 11 as a result of this consultation.

Proposed Change 10 amends the text of Chapter 11 Natural Hazards and Appendices A and C.

### **3. STATUTORY FRAMEWORK**

#### **3.1 The Resource Management Act 1991 (RMA)**

Sections 30, 31 and 35 of the RMA give functions to regional councils and territorial authorities to deal with the risks posed by natural hazards. The RMA, however, does not clearly separate the roles of TAs and regional councils with respect to natural hazard management and in places gives overlapping responsibilities. The Resource Management Amendment Act 1993 specified that the Regional Policy Statement is to define these roles for its region. This requires the Regional Policy Statement to state which local authorities has responsibility for developing objectives, policies and rules relating to the control of the use of land for the avoidance or mitigation of natural hazards. In some cases, however, the responsibilities stated in the operative ARPS do not reflect actual practice.

Proposed Change 10 amends Chapter 11 to clearly state who is responsible for all aspects of natural hazards management in the Auckland Region.

#### **3.2 The Civil Defence Emergency Management Act 2002 (CDEMA)**

The Civil Defence Emergency Management Act 2002 sets out how the region will jointly manage natural and technological hazards, thus it introduces a more co-operative approach to Civil Defence and Emergency Management which is reflected in the Proposed Changes. This includes joint planning and implementation of public education as well as Civil Defence Planning.

The CDEM Act also changes the way in which hazards are managed, from risk reduction activities (including land use planning) through to readiness, response and recovery. This offers a way of addressing hazards that may occur infrequently or in unpredictable/widespread locations.

The CDEM Act also defines “hazard” much more broadly than it is defined in the RMA, that is, it includes technological hazards. As this is an RMA document the ARC wants it to be clear that the objective and policies only refer to natural hazards. Therefore the word “natural” is added before hazard to clarify this in the Proposed Change.

#### **3.3 The Building Act 2004**

The Building Act 2004 establishes a regulatory framework for the control, construction and maintenance of buildings to safeguard public health, safety and amenity. This Act introduces a greater range of hazards than is currently considered in the Operative ARPS. The Operative ARPS only requires flooding hazard plans to be prepared prior to new areas being developed. Amendments in Proposed Change 10 better address flooding hazard issues to ensure that erosion, instability and flooding hazards are all considered and planned for.

#### 4. DISCUSSION OF SUBMISSIONS & EVIDENCE

At the hearing held on the 31<sup>st</sup> August, 2006, verbal evidence was presented by four (4) of the submitters to the Plan Change:

1. Auckland City Council (submitter no. 48) and Metrowater Ltd (submitter no. 71). Evidence was presented by Greg Paterson with legal submission presented by Gerald Lanning from Simpson Grierson
2. North Shore City Council (submitter no. 4). Evidence was presented by Celia Davidson and Chris Stumbles (read on his behalf by Ian Watkins)
3. Waitakere City Council (submitter no. 37), with evidence presented by Jenny Fuller

Evidence was also tabled at the hearing from Papakura District Council (submitter no. 5).

The verbal submissions generally supported the proposed plan change and sought a number of minor amendments around clarity and wording issues. Substantive evidence/legal submission was however presented by Auckland City Council/Metrowater Ltd regarding matters of legislative jurisdiction and the appropriateness of the 1% AEP level already included in the RPS. A number of other concerns were raised in respect to positive effects and advantages around infrastructure provision and works.

##### 4.1 Whole Plan Change 10 Withdraw Change

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
35/2	Structure Plan Advocate Network (SPAN)	Withdraw Plan Change 10, re-advertise the plan change and include a statement that the s32 analysis is available for inspection with the plan change.	
34/2	WH and CP Horring	Withdraw Plan Change 10, re-advertise the plan change and include a statement that the s32 analysis is available for inspection with the plan change.	
68/7	Paul and Karyn Mitchell	Seeks withdrawal of the Whole RPS Change 10 on the basis of a section 32 analysis that the costs outweigh the benefits and are an unfair burden on the landowner. The proposed benefits are for the region with the main proportion of the costs falling on the landowner.	

##### Decision:

Submissions 35/2, 34/2 and 68/7 are rejected.

##### Reason:

The Section 32 report was made available at the ARC at the time of notification. Hence submitters 35/2 and 34/2 were not unduly prejudiced.

And on balanced consideration of all costs and benefits considered within the Section 32 Report, the adverse effects of not preparing this Plan Change to the RPS were considered to be far greater than otherwise, given that people may unknowingly buy land that is hazard prone and subsequent lack of knowledge of the limited development potential of that land. This Plan Change enables that knowledge to

be collected and made available, while withdrawing the Plan Change would mean the public will not be sufficiently prepared to respond to the occurrence of natural hazards.

#### 4.2 Whole Plan Change 10 Consultation Process

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
35/4	Structure Plan Advocate Network (SPAN)	Withdraw Plan Change 10 and consult with the general public, ratepayer groups and landowners, take into account their views and incorporate their views before re-advertising the plan change.	
34/4	WH and CP Horring	Withdraw Plan Change 10 and consult with the general public, ratepayer groups and landowners, take into account their views and incorporate their views before re-advertising the plan change.	
68/9	Paul and Karyn Mitchell	Seeks withdrawal of the whole RPS change 10 until proper consultation with the public, ratepayer groups or landowners has taken place and their views taken into account. Incorporate their views before re-advertising the plan change.	

#### Decision:

Submissions 35/4, 34/4 and 68/9 are rejected

#### Reason:

Consultation was held with the Territorial Authorities in the Auckland Region prior to the notification of the Plan Change. The proposed Plan Change 10 was subsequently notified on 26 September 2005, in accordance with the procedures outlined in the First Schedule of the RMA, requiring the proposed change to be advertised and made available in public libraries and allowing the opportunity for the public to make submissions. The ARC has followed the correct procedure for consultation and believes that adequate provision for consultation has been made.

#### 4.3 Alternative to Submission 48/119

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
48/120	Auckland City Council	Amend RPS Change 10 by: <ul style="list-style-type: none"> <li>When objectives, policies or methods refer to habitable floor levels, that the 2% AEP standard is applied, so as to be consistent with the Building Act/Code; and</li> <li>The term "<i>shall not be permitted</i>" is expressly defined to mean that the relevant activity should be subject to a resource consent process and does not mean that the relevant activity is prohibited for the purposes of the RMA; and</li> <li>Text is included to make it clear that the public stormwater system and works needed to operate that system create positive effects on the wider environment; and</li> <li>The methods section of the Proposed Change is clarified so that it does not alter or expand the role of a local authority beyond that specified in statutes.</li> </ul>	<b>Opposed By:</b> 4 North Shore City Council

		See also submissions 48/119 and 48/121 - 48/141.	
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**Decision:**

Submission 48/120 is accepted in part in relation to the term “shall not be permitted”, to the extent of the recommended amendments set out in Appendix 1.

**Reasons:**

Further to legal submissions on jurisdictional issues from submitters at the hearing and further to legal clarification from Council’s own legal advisors, the Committee accept there to be no legal impediment to setting a higher standard within the RPS than the Building Act does. The RMA takes a long-term (intergenerational) view and is concerned with adverse effects including cumulative effects on the environment generally and not just the building. Hence the RPS policies which are formulated under the RMA framework, can be more restrictive than those imposed under the Building Act. It is therefore appropriate that the RPS standard is based on 1:100 year events (1% AEP), rather than 1:50 year events (2% AEP) under the Building Act.

The term “shall not be permitted” is not ambiguous but rather provides clear direction to the TAs that a particular activity will need to be controlled in their district plans. However, it is appropriate that the term “permitted” be changed to “allowed” to clarify that it is not relating to a “permitted activity” in the RMA sense.

Catchment-wide benefits which outweigh local adverse effects is appropriately decided on a case by case basis. This is already reflected in the last sentence of the 9<sup>th</sup> paragraph in *Section 11.4.3 Reasons* which clearly states the need to assess the benefits against any potential adverse effects on the environment.

Section 62(1)(i)(i) of the RMA requires the RPS to state which local authority has responsibility for specifying objectives, policies and methods for the control of the use of land to avoid or mitigate natural hazards or any group of hazards. The RPS seeks to fulfil this responsibility by specifying relevant methods within each chapter while giving appropriate direction to TAs as to their role in the management of natural hazards for the Auckland Region.

**4.4 Consistency with Auckland Regional Civil Defence Emergency Management Plan**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
59/7	Franklin District Council	Retain whole RPS Change 10 provided that changes made to the notified version of Change 10 resulting from consultation are not contrary to the Auckland Regional Civil Defence Emergency Management Plan and additional and/ or unnecessary responsibilities are not passed into Franklin District Council.	

**Decision**

Submission 59/7 is accepted with no amendments recommended to the RPS.

**Reason:**

The purpose of Plan Change No. 10 satisfies the submission and does ensure that the ARPS is not inconsistent with the new legislation. Consequently, the decisions of the Panel are not considered to be contrary to the Auckland Regional Civil Defence Emergency Management Plan, and are satisfied that no additional responsibilities have been given to the territorial authorities.

#### 4.5 Whole RPS Change Proposed Regional Plan

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
48/119	Auckland City Council	Seeks the withdrawal of Proposed Change 10 and re-notify a proposed change addressing natural hazards once the relevant provisions of the Proposed Regional Plan: Air, Land and Water have been made operative. See also submission 48/120.	

#### Decision:

Submission 48/119 is rejected.

#### Reason:

Section 59 of the RMA clearly states that the purpose of an RPS is to provide an overview of the resource management issues and policies and methods to achieve integrated management of the natural and physical resources for the region. Section 62(1)(i)(i) also requires the RPS to clearly state which local authority is responsible for developing objectives, policies and methods in relation to natural hazards. As the higher strategic document and given the current proposed status of the ALW Plan, it is appropriate for the RPS to guide and set the development of regional plans, including the *Proposed Auckland Regional Plan: Air, Land & Water*.

#### 4.6 Section 11.1 Introduction

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
4/1	North Shore City Council	Amend the introduction section (11.1) to indicate how requirements for building on land subject to natural hazards has been addressed through the Building Act 2004 and to what extent proposed change 10 addresses these issues.	<b>Supported By:</b> 37 Waitakere City Council 48 Auckland City Council 71 Metro Water Limited
37/38	Waitakere City Council	Amend Introduction 11.1 to include a more full explanation of the statutory context for natural hazard management, including some discussion of the range of measures that have already been developed nationally and regionally.	
4/2	North Shore City Council	Seeks to clarify whether or not the reference to flooding in the Proposed Change includes inundation of coastal areas.	<b>Supported By:</b> 37 Waitakere City Council 48 Auckland City Council 71 Metro Water Limited
4/3	North Shore City Council	Amend introduction (11.1) to include comments on the possible risks posed to public health and safety through the occurrence of natural hazard events.	<b>Supported By:</b> 37 Waitakere City Council 48 Auckland City Council 71 Metro Water Limited
11/26	Manukau City Council	Amend introduction 11.1 paragraph 11 to include reference to "Reduction" which is implemented through the Resource Management Act 1991.	
11/25	Manukau City Council	Amend Introduction 11.1 paragraph 8 by replacing reference to technological hazards with the term "man made hazards".	
11/24	Manukau City Council	Amend introduction 11.1 paragraph 5 reference to the Building Act 2004 and include reference to the Resource Management Act 1991.	<b>Supported By:</b> 37 Waitakere City Council

**Decision:**

Submissions 4/1, 37/38 are rejected.

Submissions 4/2 and 11/24 are accepted and 11/25, 4/3 are accepted in part and as amended in Appendix 1 (Section 11.1 - Introduction)

Submission 11/26 is accepted in part with no amendments recommended to the RPS.

**Reason:**

The *Introduction* currently acknowledges the role of the Building Act in how TAs' manage natural hazards. As a strategic overview document, this is considered to be a more appropriate level of detail to be included in a RPS, contrary to the detail requested by submissions **4/1** and **37/38**. *Section 11.4.3 Reasons* references the Hazard Guideline (ARC Technical Publication No. 106) where more information can be found on risk assessment and natural hazard management measures. It is unnecessary to repeat this information within the *Introduction*.

It is recognised that TA's operate under both the Building Act and the RMA in relation to the controls in their district plans. It is appropriate to amend paragraph 5 as requested by Submission **11/24**. The third paragraph in the *Introduction* also acknowledges that each natural hazard poses a different risk to human safety and well being. Public health, although embodied in the terms human safety and well-being, can be identified separately here to highlight its importance. This will partly meet the concerns of Submission **4/3**. The addition of further comments on possible risks is unnecessary detail that is inappropriate in an RPS.

In terms of key definitions in this section of the Plan:

- a. "Flooding" refers to both rainfall/river channel overflow as well as inundation as a result of coastal processes.
- b. "Reduction" is already identified in the last paragraph of the *Introduction* as a key technique for TAs to use in planning for natural hazards. This meets the concerns of submission **11/26**.
- c. 'Man-made hazards'. The CDEM Act does not use the term, with a preference instead for 'non-natural hazards' instead within its *Guide to the National Plan*. It is appropriate to amend the term 'technological' in the *Introduction* to refer to 'non-natural hazards' not 'man-made', contrary to the request in Submission **11/25**.

**4.7 Section 11.2 Issues**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
4/4	North Shore City Council	Amend Clause 11.2 to include a reference to stormwater infrastructure.	<b>Supported By:</b> 37 Waitakere City Council 48 Auckland City Council 71 Metro Water Limited
4/5	North Shore City Council	Amend section 11.2 to clarify what is meant by the range of coastal erosion figures quoted in the section and to explain what the significance of these rates are to areas in the Auckland area.	
37/39	Waitakere City Council	Amend Issue 11.2 to acknowledge that the acquisition of the range and detail of information required to fully assess the risks associated with natural hazards represents a degree of costs and resource not currently assigned to this task.	
5/23	Papakura District Council	Retain Issue 11.2, page 11-2, paragraph 2 with regard to discussion on the need for site specific analysis to determine the actual area susceptible to coastal erosion at any particular site.	
37/76	Waitakere City	Also acknowledge (here or elsewhere as	

	Council	appropriate) that a lack of information on natural hazards does not justify a lack of action, and that a precautionary approach is generally appropriate.	
11/28	Manukau City Council	Seeks justification of the figures used in 11.2.1 paragraph 2.	
71/11	Metro Water Limited	Amend Issue 11.2.1 to clarify the intent of the statement " <i>The adverse impact of natural hazards on infrastructure can exacerbate the original hazard and result in much wider disruption than caused by the event itself</i> " to more accurately address the intent. The consequences of infrastructure failure as a result of a natural hazard often pose a greater risk to the affected community than the hazard event itself. At present the statement ties the infrastructure to the natural hazard in a manner that does not make the distinction between the hazard event and the effects on infrastructure.	<b>Supported and Opposed By:</b> 37 Waitakere City Council
71/1	Metro Water Limited	Amend Issue 11.2.1, first paragraph of the explanation by deleting the words " <i>and infrastructure</i> " or otherwise the provision of a more balanced statement that recognises that infrastructure must be located in flood areas in some instances to provide essential services to the community.	
11/31	Manukau City Council	Amend Issue 11.2.1 paragraph 5 to insert a table showing likely height of tsunami waves together with location and likely probability of such events occurring.	
11/29	Manukau City Council	Amend to define "severe cyclones" (and see submission 11/30) as the meaning of the terminology is unclear.	
11/27	Manukau City Council	Amend 11.2.1 to clarify the meaning of "the variability in wave climate" and Competency of the underlying material" and "wave climate".	
11/30	Manukau City Council	Delete sentence referring to "severe cyclones" (see also submission 11/29).	

**Decision:**

Submission 5/23 is accepted with no amendments recommended to the RPS.

Submissions 4/4, 37/39, 37/76, 71/11, 11/29 are accepted and as amended in Appendix 1 (Section 11.2 Issue)

Submission 4/5 is accepted in part and as amended in Appendix 1 (Section 11.2 Issue)

Submissions 11/28, 11/30, 11/31, 11/27 and 71/1 are rejected.

**Reason:**

Submission 4/4 requested that 'storm-water infrastructure' be included in the list of types of infrastructure as this is an essential part of the overall infrastructure in an urban area. It is appropriate for this amendment to be made to the RPS.

The basis of the coastal erosion rates included in this section, is 'area susceptible to hazard', which is not necessarily the same as a hazard zone. It is not appropriate to include any greater detail than this within the ARPS. However, the text has been amended to give further clarification on the difference

between 'erosion rates' and the 'area susceptible to coastal erosion hazard'. In addition, a technical report on a broad scale assessment of these rates is currently being peer reviewed.

Submissions **37/39** and **37/76** requests that this section acknowledges that often the level of information required to assess the degree of risk posed by a natural hazard requires a greater degree of expenditure than is currently undertaken and in these cases a precautionary approach is required. It is appropriate to acknowledge this issue.

Submission **71/11** is accepted, to provide clearer intent conveying that if a hazard event destroys or damages a lifeline utility (infrastructure), the consequential impacts can be more widespread and severe.

The main types of infrastructure located in flood prone areas are wastewater and storm-water. Even though these types of infrastructure are important and likely to be serving the whole catchment, it is still important that the location of the infrastructure is assessed to ensure that there is no potential for the increase of flooding, hence the decision to reject submission **71/1**.

It is appropriate to clarify the term "severe cyclones" in the text in relation to causing effects that are beyond those planned for in District Plans. Tsunami inundation modelling is currently being developed, but because these events occur infrequently, modelling is scenario based only. Location, magnitude, source will all influence inundation. The information gained from this modelling will be used for evacuation planning only. Further detailed information showing likely height of tsunami waves, together with location and likely probability of such events occurring, is currently unavailable thereby not allowing the Panel to satisfy submission **11/31**.

Terminology of concern to the submitter **11/27**, is considered to be reasonably self explanatory so that further explanation is unnecessary.

#### 4.8 Section 11.3 Objective

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/40	Waitakere City Council	Retain Objective 11.3.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited
11/32	Manukau City Council	Retain Objective 11.3 reference to infrastructure.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited

#### Decision:

Submissions 37/40 and 11/32 are accepted with no amendments recommended to the RPS

#### Reason:

The relief sought by this submitter is in keeping with the intent of the Plan Change to provide clarity regarding the roles and responsibilities with respect to natural hazards.

#### 4.9 Section 11.4.1 Policies - General

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
5/25	Papakura District Council	Amend policies 11.4.1, page 11-2 to recognise that a distinction needs to be made between flood plains and flow paths. Activities may need to be prohibited in flow paths but measures can be taken within flood plains to control activities rather than prohibit.	<b>Supported and Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
4/14	North Shore City Council	Amend policy section to include additional policies or statements to control development within the 10% (or above) AEP flood plain areas.	<b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited <b>Supported and Opposed By:</b> 37 Waitakere City Council
4/26	North Shore City	Amend the policy section to provide a policy	

	Council	to support method 11.4.2.14.	
5/24	Papakura District Council	Supports the suggested changes that look to prohibit rather than discourage development within the 1% AEP flood plains, or development that would exacerbate runoff quantities in events with AEPs of 1% or more which can be translated into District Plan rules with stronger policy support from a Regional level. However a distinction needs to be made between flood plains and flowpaths, refer submission 5/25.	<b>Supported By:</b> 4 North Shore City Council <b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
4/15	North Shore City Council	Amend the RPS to provide guidance on development that obstructs overland flowpaths and secondary flowpaths.	<b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
48/121	Auckland City Council	Amend RPS Change 10 to include the following text: <i>"For the avoidance of doubt, the term "shall not be permitted" means that the relevant activity will be subject to a resource consent process and does not mean that the relevant activity will be prohibited for the purposes of the Resource Management Act 1991"</i> as the term "shall not be permitted" is ambiguous and could be interpreted as being a prohibited activity.	<b>Supported By:</b> 71 Metro Water Limited

#### Decision:

Submission 4/14 is rejected.

Submissions 5/24, 5/25 are accepted in part with no amendments recommended to the RPS.

Submission 48/121 is accepted in part and as amended in Appendix 1 (Policies 11.4.1.3, 11.4.1.4, 11.4.1.5 and 11.4.1.7).

Submissions 4/26, 4/15 are accepted and as amended in Appendix 1 (Section 11.4.1.3)

#### Reason:

Submissions **5/24** and **5/25** request that the policies provide a distinction between flood plains and flow paths. Submission **4/15** requests that more guidance is provided on development that obstructs flowpaths. There is already technical distinction between 'overland flow paths' and 'flood plain' – any additional rigorous definition will be difficult. However, the recommended amendments to Policy 11.4.1.3 to meet the concerns of submission **4/15** will have the required effect, given that any obstruction of an overland flow path will *"divert overland flows onto neighbouring properties, worsen or accelerate the hazard"*.

Submission **4/14** seeks that an additional policy be provided to control development within the 10% (or above) AEP flood plain areas. However, it is not obvious just what further restrictions would be appropriate and the policies could get unnecessarily complex.

Method 11.4.2.14 enables TAs to control infilling (reclamation) and storage of materials within the 1% AEP flood plain. It is appropriate that there is a policy to support this method as requested by Submission **4/26**. It is recommended that Policy 11.4.1.3 is amended to accommodate the necessary changes to meet the concerns of the submitter.

The use of the term "permitted" within the policies of the RPS is appropriate to be amended to "allowed", in order to provide clarity that it is not relating to a "permitted activity" in the RMA sense. This satisfies submission **48/121**.

#### 4.10 Section 11.4.1.1 Policy 1

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/41	Waitakere City Council	Amend Policy 11.4.1.1 to expand the policy to explain the respective roles of the ARC and TAs, including a discussion of which hazards will be considered the responsibility of the ARC, and which the TAs.	

#### Decision:

Submission 37/41 is rejected.

#### Reasons:

Splitting of roles and responsibilities occurs in the individual methods of the RPS and it is not necessary to be repeated in policy 11.4.1.1.

#### 4.11 Section 11.4.1.2 Policy 2

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/42	Waitakere City Council	Amend Policy 11.4.1.2 to reflect that predicting potential future natural hazards is difficult, and justifies a precautionary approach.	
37/45	Waitakere City Council	Amend policy 11.4.1.2 to identify that coastal and riparian margins/setbacks are an appropriate response to natural hazard management.	
4/6	North Shore City Council	Seeks reassessment of the use of the word ' <i>significant</i> ' in policy 11.4.1.2.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited
37/44	Waitakere City Council	Amend Policy 11.4.1.2 to identify that the ARC has the most significant role to play in the identification of coastal hazards, particularly as these might be influenced by climate change.	
37/43	Waitakere City Council	Seeks clarification in Policy 11.4.1.2 of the potential liability issues for local authorities associated with this (and other) provisions.	

#### Decision:

Submissions 37/42, 37/44, 37/45 are accepted in part with no amendments recommended to the RPS. Submission 4/6 is accepted and as amended in Appendix 1 (Policy 11.4.1.2) Submission 37/43 is rejected.

#### Reason:

Climate change does make it difficult for predicting with certainty the degree of change and potential future natural hazards. However, the precautionary approach that submitters **37/42** and **37/43** advocate, shall be used in avoiding or mitigating the adverse effects of sea level rise and global climate change. Policy 11.4.1.2 merely requires that development not precede the assessment, rather than specifying detail about who or how that assessment will be done.

It is not the purpose of this policy to identify coastal and riparian margins/setbacks as an appropriate response to Submission **37/45**, as to identify one particular method over the others would give an unbalanced approach to hazard management. Method 11.4.2.9 in any case, does meet the concerns of the submitter with its reference to the use of esplanade reserves and strips for the purpose of avoiding, or mitigating natural hazards.

Submission 4/6 questions whether the term “significant” is necessary, given that measures to avoid or mitigate the adverse effects of natural hazards should apply to any development/re-development of land. The submitter is correct in suggesting it is the level of adverse effect generated by development/redevelopment that is of concern here, not the level of development. As such, it is appropriate to delete the term from this policy to meet the submission.

Method 11.4.2.1 already requires the ARC to gather information on coastal hazards, including the effects of sea level rise and climate change, at a regional level. Consequent Method 11.4.2.2 requires the TAs to gather information on coastal hazards at a district/city scale. Submission 37/44 is therefore satisfied.

#### 4.12 Section 11.4.1.3 Policy 3

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
71/2	Metro Water Limited	Amend Policy 11.4.1.3 so that the policy does not read as a rule.	
71/3	Metro Water Limited	Amend Policy 11.4.1.3 by replacing the references to the 1% AEP with the 2% AEP, indicating that a higher standard may be imposed through a district plan (if policy 11.4.1.3 is to remain largely intact).	<b>Opposed By:</b> 4 North Shore City Council
37/46	Waitakere City Council	Seeks clarification of the relationship of proposed Policy 11.4.1.3 with the requirements of the Building Act 2004 and the Building Code.	<b>Supported and Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
4/7	North Shore City Council	Amend the policy 11.4.1.3 to specify a minimum freeboard level for all floor levels permitted in the 1% AEP flood plain and/or indicate how all floor levels can be adequately protected from the 1% AEP flood level.	<b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
11/33	Manukau City Council	Retain 11.4.1 policy 3 reference to 1% AEP flood plain and restrictions on development.	<b>Supported By:</b> 4 North Shore City Council <b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
48/122	Auckland City Council	Amend 11.4.1.3 (a) by replacing 1% AEP with "2% AEP" for reasons set out in the submission including; the Building Act and the Building Code apply a 2% AEP flood standard and Policy 11.4.1.3 may discourage further residential development including development in growth nodes by raising the cost of installing public and private stormwater infrastructure or restricting development further.	<b>Supported By:</b> 71 Metro Water Limited <b>Opposed By:</b> 4 North Shore City Council 79 Rodney District Council
48/123	Auckland City Council	Delete 11.4.1.3 (b), as access to buildings during a flood event whilst desirable is not essential to ensure the safety of human life or to protect property from damage.	<b>Supported By:</b> 71 Metro Water Limited <b>Opposed By:</b> 37 Waitakere City Council
48/124	Auckland City Council	Amend 11.4.1.3 (c) to read: <i>"structures within the 2% AEP flood plain do not divert or otherwise alter "surface water" so as to have significant adverse effect on other properties (as those two terms are defined in the Building Act 2004)".</i> The amendments to (c) are necessary to make the policy consistent with Clause E1.3.2 of the Building Code and sections 68(2A) and 76(2A) of the RMA.	<b>Supported By:</b> 71 Metro Water Limited <b>Opposed By:</b> 4 North Shore City Council
71/4	Metro Water Limited	Amend policy 11.4.1.3(a) to read (additions underlined): <i>'The development's habitable floor</i>	

		<i>levels are protected...'</i> (if policy 11.4.1.3 is to remain largely intact) as the current wording suggests all flooding within a catchment must be resolved prior to any new development within the catchment. This will not allow Auckland City to accommodate any further growth in many areas of the city. The suggested amendment would allow new development that does not worsen or accelerate the flooding hazard.	
71/5	Metro Water Limited	Delete policy 11.4.1.3(b): "Access to buildings in maintained" (if policy 11.4.1.3 is to remain largely intact) as the intent of the policy is not clear.	<b>Opposed By:</b> 37 Waitakere City Council
71/6	Metro Water Limited	Amend policy 11.4.1.3(c) as follows or similar (if policy 11.4.1.3 is to remain largely intact): " <i>New structures within the 2% AEP flood plain do not divert overland flows onto neighbouring properties in a manner that worsens or accelerates the hazard</i> ".	<b>Opposed By:</b> 4 North Shore City Council
4/9	North Shore City Council	Amend Policy 11.4.1.3a to give consideration to protection of commercial floor levels and non-habitable rooms in the 1% AEP.	<b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
4/8	North Shore City Council	Amend the policy 11.4.1.3a to clarify what type of habitable rooms should be protected from the 1% AEP flood plain.	<b>Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited
4/10	North Shore City Council	Delete the word ' <i>level</i> ' from policy 11.4.1.3a to indicate that the level of flood water is not the only concern in a flood hazard zone.	
4/11	North Shore City Council	Amend Policy 11.4.1.3b (Access to buildings in maintained) to state " <i>access to buildings is maintained</i> ".	
4/12	North Shore City Council	Amend policy 11.4.1.3b to clarify that ' <i>access</i> ' refers to maintaining an escape/evacuation route from buildings that are built in the 1% AEP flood plain rather than general ' <i>access</i> ' to buildings that must be maintained.	<b>Supported By:</b> 37 Waitakere City Council 48 Auckland City Council 71 Metro Water Limited
4/13	North Shore City Council	Amend policy 11.4.1.3c to recognise that development may be permitted on a property within the 1% AEP where the overland flow-paths can be diverted safely within a property so that neighbouring properties are not affected for a 1% AEP storm event with all pipes 100% blocked.	<b>Supported and Opposed By:</b> 48 Auckland City Council 71 Metro Water Limited

**Decision:**

Submissions 71/6, 48/123, 71/5 are accepted in part and as amended in Appendix 1 (Section 11.4.1.3)  
Submissions 37/46, 71/4, 4/10, 4/11, 4/12 are accepted and as amended in Appendix 1 (Policy 11.4.1.3 and Reasons 11.4.3)

Submissions 11/33 and 4/13 are accepted with no amendments required.

Submissions 71/2, 71/3, 48/122, 48/124, 4/7, 4/8, 4/9 are rejected

**Reason:**

Policy 11.4.1.3 provides guidance to the TAs regarding development in flood plain areas where certain conditions can be met.

Concern was raised that the policy reads like a rule. All three parts of this Policy are expressed in general terms except for restricted consideration to events no bigger than the 1% event. It is therefore considered that the policy is not as restrictive as a rule.

The Panel considers the 1% AEP standard to be appropriate, given the regional and wider environmental effects of buildings and structures within floodplains that the RPS necessarily overviews. This standard has also already been litigated through the notification process of the RPS, and generally accepted by other TA's within the region as appropriate with respect to flood plain management. In addition, under this legal review, the Panel considers there to be no legal impediments to setting a higher standard through this policy, than the Building Act or the Building Code does. This satisfies submissions **71/3, 71/6, 48/122 and 48/124**.

Submission **71/6** regarding (c) existing structures within the AEP flood plain is valid and the policy needs to be changed to ensure that it is in relation to "new structures" only. This satisfies in part the concerns of Submission **4/13** where it is implicit in Policy 11.4.1.3c that any new structures should be considered along with any on-site mitigation rather than in isolation. Pipe blockage is a valid concern but a question of design detail rather than policy.

Submission **48/124** also requests that the wording of (c) is made consistent with the Building Code and the RMA. However, the role of the RPS is to provide further guidance on the relevant legislation not simply repeat it.

Concerns raised in submission **71/4** with the current wording of (a) suggests that all flooding problems within a catchment must be resolved prior to any new development within the catchment. This is not the intent of the policy hence the submission is accepted as necessary to ensure that further growth can be accommodated.

Submission **4/10** correctly notes that it is not only the flood level of concern in (a) but also the velocity of water and associated erosion that is the hazard.

Submission **4/7** requests that the policy specifies a minimum freeboard level for all floor levels. This level of information is inappropriate in a policy and also too prescriptive. In addition, a suitable freeboard may vary between locations.

Submission **4/8** is concerned that (a) refers to "all habitable floor levels" implying only floors in residential developments are protected, while submission **4/9** seeks to give consideration to the protection of commercial floor levels and non-habitable rooms and not just residential floor levels. The flooding of habitable floors is a greater hazard than the flooding of commercial or non-habitable floors simply because people's lives and loss of personal property are at greater risk. In the situation of the flooding of commercial /industrial floors there is an economic loss (workers can evacuate). However, there is difficulty in assessing the economic use of a floor and taking into account the changes of that use. Hence it is appropriate that policy 11.4.1.3(a) refers to only to habitable floors.

Submissions **48/123** and **71/5** request the deletion of (b) as access to buildings during a flood event is not essential and the intent is unclear. Submission **4/11** highlights the typographical error and submission **4/12** request clarification. This clause of the policy applies to emergency access/egress rather than general access to buildings, and while this is clarified within the relevant Reasons section of the (Section 11.4.3), it is important that it is corrected and made much clearer within policy 11.4.1.3 3.

**4.13 Section 11.4.1.4 Policy 4**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
48/125	Auckland City Council	Amend Policy 11.4.1.4 to read: <i>"Development shall not be permitted if the development results in changes in stormwater runoff quantities in events with AEP's of 10% AEP or less, that are likely to create a nuisance to other property unless it can be demonstrated that the adverse effects</i>	<b>Supported By:</b> 71 Metro Water Limited

		<i>can be avoided or mitigated".</i> The Building Code (Clause E1.3.1) specifies that buildings or site works must be able to adequately dispose of water from a 10% AEP event and urban territorial authorities in the Auckland region have primary stormwater piped public network design standards of either 10% or 20% AEP.	
71/9	Metro Water Limited	Amend policy 11.4.1.4 (if policy 11.4.1.4 is to remain largely intact) to clarify what is meant by the words "or more" when referring to AEPs - is this more frequent or more severe?	
71/8	Metro Water Limited	Amend policy 11.4.1.4 (if policy 11.4.1.4 is to remain largely intact) by replacing the references to the 1% AEP with the 2% AEP, indicating that a higher standard may be imposed through a District Plan.	<b>Opposed By:</b> 4 North Shore City Council
71/7	Metro Water Limited	Amend policy 11.4.1.4 so that it does not read as a rule. An example is as follows: <i>"Where further development is programmed to occur in catchments with existing flooding problems, the development should be undertaken in a manner that does not increase the flood risk in that catchment or there should be an identified programme of works or commitment to resolve the flooding problems within a reasonable period of time."</i>	
4/16	North Shore City Council	Amend policy 11.4.1.4 as the current wording of this policy is not practical as any development will result in some effects and the wording effectively prevents all further development.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited

**Decision:**

Submissions 71/9 are accepted and as amended in Appendix 1 (Policy 11.4.1.4)  
Submissions 4/16, 48/125, 71/8, 71/7 are rejected.

**Reason:**

Evidence and legal submission was presented on Auckland City Council and Metrowater's behalf at the hearings, in support of their submissions on this policy.

Key concerns raised in the evidence/submission referred to the increased level of culpability or risk management of hazards that the Plan Change imposes on TA's. More fundamentally, concern was raised with the 1% AEP level of this and associated policies affected by the Plan Change – that this figure is imposed at a regional level without discretion to take particular circumstances into account.

These concerns were framed in the context of the Building Act and Building Code, both which apply a less stringent 2% AEP level for managing flood risks in flood plains. The submitter sought alignment with these documents in the interests of consistency. The Committee considered the legal submission and evidence, seeking further legal review on jurisdictional issues raised by the submitter.

The Committee considers the 1% AEP standard to be appropriate, given the regional and wider environmental effects of buildings and structures within floodplains that the RPS necessarily overviews. The 1% AEP standard has also already been litigated through the notification process of the RPS and therefore has generally been accepted by other TA's as appropriate with respect to flood plain management.

The RMA takes a long-term (intergenerational) view and is concerned with avoiding, remedying or mitigating social, economic, environmental effects (and other effects including cumulative and future effects) in a more holistic manner than the Building Act permits, which primarily seeks to ensure the structural integrity and safety of buildings and infrastructure. Hence the RPS policies which are formulated under the RMA framework, can be more restrictive than those imposed under the Building Act. It is therefore appropriate that the RPS standard is based on 1:100 year events (1% AEP), rather than 1:50 year events (2% AEP) under the Building Act.

In addition, under this legal review, the Committee considers there to be no legal impediments to setting a higher standard through this policy, than the Building Act or the Building Code does.

#### 4.14 Section 11.4.1.4 and 11.4.1.5 Policies 4 and 5

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/47	Waitakere City Council	Retain Policies 11.4.1.4 and 11.4.1.5.	

##### Decision:

Submission 37/47 is accepted with no amendments required.

##### Reason:

The submission is supportive of the Council's intent with these policies

#### 4.15 Section 11.4.1.5 Policy 5

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
48/126	Auckland City Council	Delete Policy 11.4.1.5 as this clause is superfluous, as any construction of mitigation works can only be undertaken if the relevant consents (e.g. resource management, building and landowner) are obtained. Resource consents in particular address best practical options, adverse effects, risk, etc. that this clause endeavours to specify.	<b>Opposed By:</b> 4 North Shore City Council
4/18	North Shore City Council	Amend Policy 11.4.1.5 to clarify who will be responsible for possible compensation payable in the event that those uses with existing rights are affected by a requirement for mitigation works to avoid, remedy or mitigate adverse effects in areas susceptible to natural hazards.	
4/17	North Shore City Council	Amend policy 11.4.1.5 to clarify the intent of the words " <i>unacceptable risk</i> " and who determines this and also clarify the use of the word "permitted" in the policy.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited

##### Decision:

Submission 4/17 is partially accepted and as amended in Appendix 1 (Policy 11.4.1.5)

Submissions 48/126, 4/18 are rejected.

##### Reason:

Policy 11.4.1.5 applies to construction of mitigation works in areas already developed. The policy as drafted is not ambiguous and is appropriate for inclusion in the RPS as a high level advocacy/education document, contrary to submission **48/126**.

Detail assigning responsibility for compensation as contemplated by submission **4/18**, is not appropriate in the RPS – a high level strategic document. Such detail is in any case, dealt with under legislation other than the RMA and LGAAA through civil action/common law practise – it is not necessary to complicate those processes by including detail in the RPS.

Submission **4/17** is correct, as the terminology doesn't necessarily relate to the intent of the policy, hence the decision that "unacceptable" is removed. The term "permitted" is also appropriate to change to "allowed" as this reflects the meaning intended.

#### 4.16 Section 11.4.1.6 Policy 6

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
4/19	North Shore City Council	Amend policy 11.4.1.6 to define the meaning of the word 'more'.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited
48/127	Auckland City Council	Amend Policy 11.4.1.6 to read: <i>Any works within a watercourse shall be carried out in a way that does not permanently create or exacerbate an unacceptable or unjustifiable flooding hazard, either at the site or at any location upstream or downstream of the works. Works within a watercourse include (but are not limited to) riparian planting, piping of streams, and the construction of culverts, bridges, retaining walls and other structures"</i>  And add the following words to Policy 11.4.1.6: <i>This policy does not apply to works undertaken by Stormwater or Wastewater Network Utility Operators (as defined by the Proposed Regional Plan: Air Land and Water, as amended by Decisions October 2004) as part of the management and operation of the stormwater network."</i>	<b>Supported By:</b> 71 Metro Water Limited
37/48	Waitakere City Council	Specify the method(s), which will be used by the ARC to give effect to this policy.	
4/20	North Shore City Council	Amend policy 11.4.1.6 to more clearly state what is intended by the policy and to define what is meant by watercourse.	<b>Supported By:</b> 48 Auckland City Council 71 Metro Water Limited
71/10	Metro Water Limited	Delete policy 11.4.1.6 as it is an item of detail that is more appropriately regulated through the Proposed regional Plan: Air, Land and Water.	

#### Decision:

Submissions 4/19, 37/48 are accepted and as amended in Appendix 1 (Policy 11.4.1.6 and Method 11.4.2.14 )

Submission 4/20 is accepted in part and as amended in Appendix 1 (Policy 11.4.1.6)

Submissions 48/127, 71/10 are rejected.

#### Reason:

With regard to submissions **4/19** and **4/20** which sought clarification of the "or more" in relation to the 1% AEP, it is appropriate to amend the policy clarifying that primary reference here, is to events not larger than the 1% AEP event. It is also appropriate to amend the policy to clarify this policy applies not to watercourses and riparian planting, but rather to the 1% AEP floodplain and overland flow-paths (as raised by submission **4/20**).

Submission **48/127** is rejected on the basis that the policy seeks to prevent all those undertaking works in a watercourse from creating or exacerbating a flooding hazard – this necessarily includes stormwater operators. For the purposes of clarity, the definition of a natural hazard (in this case, flooding) is in relation to the adverse effects it has created. Flooding, that has not resulted in any adverse effects on human life, property or other aspects of the environment, is not a hazard. Nor does the present wording of the policy restrict the actions of beneficial works carried out in watercourses, provided that necessary steps are taken to avoid any flooding resulting in becoming a hazard.

Submission **37/48** submits that there is no method for the ARC to implement this policy. This has been clarified as a result of other submissions, as well as with further wording amendments to Method 11.4.2.14 making it clear that ARC does have a role.

Submission **71/10** is rejected on the basis that Policy 11.4.1.6 is general rather than specific, and covers a matter not implied by other policies. It is also a signal that within watercourses not only building construction but other operations must be carried out without exacerbating a flooding hazard - this policy is therefore an important one for TAs and the ARC.

#### 4.17 Section 11.4.1.7 and 11.4.1.8: Policies 7 and 8

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
48/128	Auckland City Council	Delete Policy 11.4.1.7 as development of land subject to erosion/land instability is already controlled by statutory requirements, including the Building Act and the RMA.	
37/49	Waitakere City Council	Retain Policies 11.4.1.7 and 11.4.1.8.	
48/129	Auckland City Council	Delete Policy 11.4.1.8 as existing District Plans and statutory provisions adequately provide for development in the coastal environment.	<b>Opposed By:</b> 4 North Shore City Council

#### Decision:

Submission 37/49 is accepted with no amendments required.  
Submission 48/128 and 48/129 is rejected.

#### Reason:

These policies are operative and remain largely unchanged by the Plan Change (other than one grammatical change), as their intent is concise and is appropriate. It is therefore considered unnecessary to re-litigate them in the manner contemplated by submissions **48/128 and 129**.

#### 4.18 Section 11.4.1.9 Policy 9

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/50	Waitakere City Council	Amend Policy 11.4.1.9 to specify that a precautionary approach to the management of the hazards identified in the policy may need to be reflected in the development and implementation of district plans.	
11/34	Manukau City Council	Retain 11.4.1 policy 9 reference to tsunami.	

#### Decision:

Submission 37/50 is accepted and as amended in Appendix 1 (Policy 11.4.1.9)  
Submission 11/34 is accepted with no amendments required

**Reason:**

It is appropriate to amend Policy 11.4.1.9 as per submission **37/50** on the basis that a precautionary approach to assessment of adverse effects of hazards through plan development and implementation, is an appropriate one, and should be clearly stated as such within the policy.

**4.19 Section 11.4.2 Methods - General**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
48/130 – 48/140	Auckland City Council	Delete Methods sections 11.4.2.2, 11.4.2.5, 11.4.2.6, 11.4.2.7, 11.4.2.9, 11.4.2.10, 11.4.2.14, 11.4.2.15, 11.4.2.16 and 11.4.2.17, or clarify these clauses are consistent with and do not alter or expand the role of a local authority beyond that specified in legislation.	<i>48/130, 48/132, 48/133</i> <b>Opposed By:</b> 4 North Shore City Council

**Decision:**

Submissions 48/130, 48/131, 48/132, 48/133, 48/134, 48/135, 48/136, 48/137, 48/138, 48/139, 48/140 are rejected.

**Reason:**

The RPS predates the RMA Amendment Act, which states that a district plan must **give effect** to any regional policy statement. Prior to this, district plans were only required to **not be inconsistent with the RPS**.

Furthermore, Section 62(1)(h) of the RM Act, requires the RPS to state the processes to be used to deal with issues that cross local authority or TA boundaries. Natural hazards is one such issue that cross boundaries making it appropriate to include Methods 11.4.2.5, 11.4.2.15, 11.4.2.16 and 11.4.2.17 that provide for a joint role between ARC and the TAs in specific functions in the management of natural hazards.

Contrary to the above submissions, it **IS** therefore appropriate for the RPS to be amended to give clear direction and to specify objectives, policies and methods for controlling the use of land to avoid or mitigate natural hazards or any group of hazards, within the Auckland Region.

**4.20 Section 11.4.2 Method 1**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
11/35	Manukau City Council	Amend 11.4.2 method 1 by inserting the need for information on flooding and storm surges to be included in ARC database.	
11/37	Manukau City Council	Amend 11.4.2 method 1 to include information on active faults to be held as an ARC responsibility (see also submission 11/36).	<b>Supported By:</b> 37 Waitakere City Council
5/26	Papakura District Council	Retain 11.4.2 Method 1 as it is appropriate that the ARC gather information and undertake or commission research at a regional scale on natural hazards and their risks and impacts.	

**Decision:**

Submission 5/26 is accepted with no amendments required.  
Submissions 11/35 and 11/37 are rejected.

**Reason:**

Method 11.4.2.1 establishes the types of natural hazards that the ARC will gather information on and held on a natural hazards database, as supported by submission **5/26**.

Submission **11/35 and 37** additionally requested 'flooding', 'storm surges' and 'active faults' be included on the list. Flooding (or inundation) and storm surge are subsets of coastal hazards and therefore do not need to be specifically identified in the method. Also, the *Method* does include 'earthquake research' as an ARC responsibility, while information gathering on active faults (site-specific) is the responsibility of the TAs as stated in *Method 11.4.2.2*. For some types of hazards the scale and effects are best determined at a regional level with the relevant information passed on to TAs. However, there is still a need for the TAs to address site-specific issues relating to hazards for the purposes of development controls. It is noted that currently no faults in the Auckland region fit into this category, but some might be discovered in the future.

**4.21 Section 11.4.2.2 Method 2**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
11/36	Manukau City Council	Delete reference to active faults in 11.4.2 method 2 (see also submission 11/37)	
4/21	North Shore City Council	Seeks clarification (Method 11.4.2.2) of the scope of the information to be collected, the timeframes for this collection and the level of information to be provided to the public.	
5/27	Papakura District Council	Amend method 11.4.2.2 to identify that the ARC will assist TAs with information gathering and assessment regarding District/City scale natural hazards.	
5/28	Papakura District Council	Amend the methods to clarify the TA's monitoring requirements with respect to District/City scale hazards.	

**Decision:**

Submissions 11/36, 4/21, 5/27, 5/28 are rejected.

**Reason:**

Information gathering on active faults (site-specific) is the responsibility of the TAs as stated in this *Method*. For some types of hazards the scale and effects are best determined at a regional level with the relevant information passed on to TAs. However, there is still a need for the TAs to address site-specific issues relating to hazards for the purposes of development controls. It is noted that currently no faults in the Auckland region fit into this category, but some might be discovered in the future.

Submission **4/21** requested that more detail be put into the method as to scope of information, frequency and level of information to be provided to the public. This level of detail is too prescriptive for a RPS method. Also, Section 11.4.3 *Reasons* already provides some scope through emphasis on the importance of TAs prioritising assessments and controls, towards natural hazards that pose the greatest risk. It is the responsibility of the TA to inform the public of property specific hazards, which is not a new requirement on the TA's. And it is not the ARC's responsibility to prescribe the level of information required, but rather to specify the natural hazards that are required to be assessed in a wider, more strategic regional context.

Submission **5/27** requests that the ARC assists TAs in the district/city scale monitoring. The ARC already provides the TAs with information gathered at a regional level and cannot afford to duplicate this with site specific scale research. With respect to the monitoring requirements sought by submission **5/28**, the information gathering, research and recording of natural hazards at a district/city scale already does make up the monitoring requirements for local hazards.

#### 4.22 Section 11.4.2.1, 11.4.2.2 and 11.4.2.3: Methods 1, 2 and 3

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/52	Waitakere City Council	Amend Methods 11.4.2.1 and 11.4.2.2 to remove the requirement on TAs to undertake this role, and revert to the status quo whereby the ARC has the role of actively acquiring information and commissioning research, with TAs having the requirement to retain and make available any information known to them.	
37/51	Waitakere City Council	Amend Methods 11.4.2.1 and 11.4.2.2 so that the requirement to actively gather information on natural hazards becomes a guideline about what is best practice in this area.	
37/55	Waitakere City Council	Amend Methods 11.4.2.1 and 11.4.2.2 to clarify as to what degree TAs are expected to increase their information gathering programmes.	
37/53	Waitakere City Council	Amend Methods 11.4.2.1 and 11.4.2.2 to indicate how TAs are expected to undertake this task (information gathering), and over what timeframe.	
37/54	Waitakere City Council	Amend Methods 11.4.2.1, 11.4.2.2 and 11.4.2.3 to clarify what constitutes a regional scale versus a local/district natural hazard.	

#### Decision:

Submissions 37/52, 37/51, 37/55, 37/53, 37/54 are accepted in part and as amended in Appendix 1.

#### Reason:

Section 35 of the RMA requires every local authority to monitor (gather information and do research) the state of the environment of its region/district to the extent that is appropriate to enable the local authority to carry out its functions under the RMA. Controlling the use of land for the purpose of avoiding or mitigating the adverse effects of natural hazards is a function for local authorities. Methods 11.4.2.1 and 11.4.2.2 reflects section 35 as well as section 62(1)(i)(i) of the RMA in terms of being very clear about which hazards the ARC will collect information on at a regional level and the natural hazards TAs are responsible for.

Methods 11.4.2.1 and 11.4.2.2 clearly indicate that the ARC does not have responsibility for research/information gathering down to a city/district level or site specific level. It is not the intention of Method 11.4.2.2 to require TAs to undertake more work than is currently undertaken but to simply reflect the status quo. Hence submissions **37/52, 37/51, 37/55 and 37/53** are accepted in part.

The clarification requested by Submission **37/54** is considered to be reasonable clarification, with the relevant amendment made to the *Reasons*.

#### 4.23 Section 11.4.2.3 Method 3

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/56	Waitakere City Council	Amend Method 11.4.2.3 to clarify how ARC information gathering/monitoring programmes will integrate with those of TAs.	

#### Decision:

Submission 37/56 is accepted and as amended in Appendix 1 (Method 11.4.2.3)

**Reason:**

Method 11.4.2.1 already includes provisions that enables data collection over a period of time, so that Method 11.4.2.3 may be deleted as unnecessarily repetitive.

**4.24 Section 11.4.2.4 Method 4**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
37/57	Waitakere City Council	Retain Method 11.4.2.4.	

**Decision:**

Submission 37/57 is accepted with no amendments required.

**Reason:**

The submission is supportive of the *Method*, as appropriate.

**4.25 Section 11.4.2.5 Method 5**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
37/58	Waitakere City Council	Retain Method 11.4.2.5.	

**Decision:**

Submission 37/58 is accepted with no amendments required.

**Reason:**

The submission is supportive of the *Method*, as appropriate.

**4.26 Section 11.4.2.6 Method 6**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
5/29	Papakura District Council	Retain 11.4.2 method 6 as it is appropriate that the RPS changes identify the coordinating role of the ARC with respect to developing guidelines and strategies for the management of natural hazards.	
37/59	Waitakere City Council	Amend Method 11.4.2.6 to clarify what is meant in practice by this method particularly in light of the potentially significant increase in responsibility of TA's set out in other provisions.	

**Decision:**

Submission 5/29 is accepted with no amendments required  
Submission 37/59 is rejected

**Reason:**

Method 11.4.2.6 establishes that the ARC will provide a co-ordinating role of the management of natural hazards throughout the region. This is to ensure that adjacent TAs do not act at cross-purposes with regard to the management of a particular hazard. This applies, in particular, to widespread hazard (e.g. distant volcanism) and also flooding in catchments that straddle TA boundaries. It is therefore appropriate to accept submission **5/29** supporting this method.

The detail sought by submission **37/59** is deemed unnecessary, especially as there is adequate explanation given in Section 11.4.3 *Reasons*. The submission is also satisfied by changes to *Methods 1, 2 and 3* (see section 4.22 above).

#### 4.27 Section 11.4.2.7 Method 7

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/60	Waitakere City Council	Amend Method 11.4.2.7 (or another method) to indicate that TAs can appropriately adopt a precautionary approach to the management of natural hazards, and to indicate that riparian and coastal setbacks are an appropriate response to some natural hazards.	
11/38	Manukau City Council	Amend 11.4.2 method 7 to include a reference to rules as a means for TAs to give effect to policies in this chapter of the RPS.	<b>Supported By:</b> 37 Waitakere City Council

#### Decision:

Submission 11/38 is accepted and as amended in Appendix 1 (Method 11.4.2.7).  
Submission 37/60 is accepted in part and as amended in Appendix 1 (Method 11.4.2.9).

#### Reason:

Method 11.4.2.7 gives direction to TAs to give effect to the RPS policies through provisions in their district plans to control any actual or potential effects of the use of land to avoid or mitigate natural hazards.

Submission **37/60** requests that the method give greater guidance and a stronger mandate for a range of provisions, particularly using a precautionary approach and riparian/coastal setbacks. The recommended amendments to Policy 11.4.1.9 (refer to Section 4.18 of this report) will give the TAs clear guidance that a precautionary approach is to be used in (the development and implementation of plans) as well as avoiding or mitigating adverse effects of earthquake, volcanic activity, sea level rise, tsunami and global climate change. This is considered to be an appropriate level of guidance. Furthermore, changes to *Method 11.4.9* will occur which will satisfy the submitter.

The RMA uses the term “method” to encapsulate rules as well as other methods. However, to be consistent with wording in associated policies (such as *Method 11.4.2.8*), changes to this policy are considered to be appropriate.

#### 4.28 Section 11.4.2.8 Method 8

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/61	Waitakere City Council	Amend Method 11.4.2.8 to include “subdivision” in the list of activities, which should be located in appropriate locations.	

#### Decision:

Submission 37/61 is accepted with amendments as shown in Appendix 1

#### Reason:

Method 11.4.2.8 states that the Regional Plan – Coastal will be the management tool used by the ARC for implementing objectives, policies, rules and other methods to encourage use and development in the coastal environment to locate in appropriate areas.

As subdivision could occur within the coastal marine areas managed by the *Regional Plan – Coastal* it is appropriate that subdivision be retained in the method in order to satisfy submission **37/61**.

#### 4.29 Section 11.4.2.9 Method 9

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
4/23	North Shore City Council	Delete from method 11.4.2.9 any reference to the use of esplanade reserves and strips for the purpose of avoiding or mitigating natural hazards and delete the cross-reference to Chapter 18 - Esplanade Reserves and Strips.	<b>Opposed By:</b> 37 Waitakere City Council <b>Supported and Opposed By:</b> 48 Auckland City Council
37/62	Waitakere City Council	Amend Method 11.4.2.9 (or another method) to indicate that TAs can appropriately adopt a precautionary approach to the management of natural hazards, and to indicate that coastal setbacks are an appropriate response to some natural hazards.	
4/22	North Shore City Council	Amend Method 11.4.2.9 by replacing the use of the word 'rule' with 'method'.	

#### Decision:

Submission 4/22 is accepted with amendments as shown in Appendix 1 (Method 11.4.2.9)  
 Submission 37/62 is accepted in part with amendments as shown in Appendix 1 (Method 11.4.2.9)  
 Submission 4/23 is rejected.

#### Discussion:

It is appropriate that this *Method* gives guidance as to the types of management tools that can be used for managing coastal hazards – it is not mandatory to use these techniques. Furthermore, the tools available should be expanded to include coastal setbacks, satisfying submission **37/62**.

It would be inappropriate to delete the word “rule” as suggested in submission **4/22**, given that rules are only one of the methods used in district plans. However, clarity will be provided by changes to *Method 11.4.2.7*, listing tools and methods which would give effect to the associated policies.

#### 4.30 Section 11.4.2.10 Method 10

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
11/39	Manukau City Council	Amend 11.4.2 method 10 to clarify the term 'flooding instability'.	
37/63	Waitakere City Council	Retain Method 11.4.2.10.	

#### Decision:

Submission 37/63 is accepted with no amendments required.  
 Submission 11/39 is accepted with amendments as included in Appendix 1 (Method 11.4.2.10)

#### Reason:

Submission **37/63** supports *Method 11.4.2.10* that directs TAs to ensure that flooding instability and coastal hazards are assessed prior to any use.

Correction of a grammatical error will satisfy the concerns of Submission **11/39** regarding “flooding instability”. The correction consequently makes appropriate reference to separate hazards, flooding and instability.

#### 4.31 Section 11.4.2.11 Method 11

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/64	Waitakere City Council	Retain Method 11.4.2.11.	

**Decision:**

Submission 37/64 is accepted with amendments as shown in Appendix 1 (Method 11.4.2.11).

**Reason:**

The submission supports that *Method*, as appropriate.

However it notes that there is a grammatical error. It is assumed that the submitter is referring to the use of e.g. and this is also corrected.

**4.32 Section 11.4.2.12 Method 12**

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/65	Waitakere City Council	Retain Method 11.4.2.12.	

**Decision:**

Submission 37/65 is accepted with no amendments required.

**Reason:**

The submission is supportive of the *Method*, as appropriate

**4.33 Section 11.4.2.13 Method 13**

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
4/24	North Shore City Council	Seeks clarification of the role and function of TA's in relation to the flood warnings in method 11.4.2.13.	
37/66	Waitakere City Council	Amend Method 11.4.2.13 to clarify that the requirements of this method do not necessitate a significant increase in the Council's current resourcing and programmes.	

**Decision:**

Submissions 4/24, 37/66 are rejected.

**Reason:**

Submission **4/24** rejects that it is the TAs function to issue public warnings in the event of a flood, while submission **37/66** is concerned that TAs current resourcing and programmes will be significantly increased.

The day-to-day flood management activities are considered to be outside the role of the ARC, and the intent of the Plan Change is merely to reflect the type of flood management functions that TAs currently undertake. The policy lists a range of functions that could be included. It does not state that, for example, flood warnings must be done. The ARC acknowledges that it is difficult to predict flooding events in the Auckland Region, however it can be included as a flood management function if a TA has the capability in the future.

**4.34 Section 11.4.2.14 Method 14**

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
4/25	North Shore City Council	Amend method 11.4.2.14 to clearly indicate what is meant by infilling and also what is meant by the term 'limit'. It is considered that development that results in materials that	

		need to be stored or used for infilling should be restricted rather than limited in the floodplain.	
37/67	Waitakere City Council	Amend Method 11.4.2.14 to remove reference to the storage of material.	<b>Supported and Opposed By:</b> 48 Auckland City Council

**Decision:**

Submission 4/25 is accepted and amended as per Appendix 1 (Policy 11.4.1.3(c) and Method 11.4.2.14 )  
Submission 37/67 is rejected.

**Reason:**

The above submissions relate to wording of the operative method. Submission **4/25** seeks clarification of the terms “infilling” and “limit”. It is appropriate to amend the method to clarify “infilling” does mean raising the ground level of land within the floodplain by placing fill i.e. reclamation. Furthermore, in the interests of consistency, it is appropriate to amend Policy 11.4.1.3(c). With regard to “limit”, it is accepted that this term is too vague. The term is therefore deleted and replaced with words that provide more guidance as to how the adverse effects should be managed.

District plans already contain provisions to ensure that activities such as the storage of materials are managed. For example, the definition of residential activities, building and impermeable surfaces rules, industrial and business activities and possibly Bylaws on storage. The operative RPS policy has a similar intent and is included so that *Method 14* does not compromise the TA's ability to make provisions within district plans.

**4.35 Section 11.4.2.15 Method 15**

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
11/41	Manukau City Council	Amend 11.4.2 method 15 to reflect the need to ensure an adequate standard of construction is more likely to be a Building Act matter.	
4/28	North Shore City Council	Seeks reconsideration of the use of the word “ <i>lawfully</i> ” in method 11.4.2.15.	
4/27	North Shore City Council	Amend method 11.4.2.15 to include the words ‘ <i>monitoring and enforcement</i> ’ into the method to indicate that this is the method by which conditions on resource consents ensure adequate control over construction and maintenance of works.	
11/40	Manukau City Council	Delete word 'lawful' from 11.4.2 method 15 as if such works are unlawful they will be demolished, or a resource and/or building consent will need to be obtained.	
11/42	Manukau City Council	Amend 11.4.2 method 15 to reflect ongoing maintenance of hazard mitigation works should be clearly stated as the responsibility of the owner of the structure. The current wording places responsibility for ensuring ongoing compliance with the ARC and TAs. Clarify the requirements and responsibilities of the owner of hazard mitigation works.	
37/68	Waitakere City Council	Retain Method 11.4.2.15.	

**Decision:**

Submission 37/68 is accepted with no amendments required.

Submissions 11/41, 4/27, 11/42 are accepted as amended in Appendix 1 (Method 11.4.2.15)  
 Submissions 4/28, 11/40 are rejected.

**Reason:**

Submission **37/68** supports the *Method*, as appropriate.

As drafted, the *Method* acknowledged the resource consent process only. It is appropriate that reference be made to the Building Act, as requested by Submission **11/41** as permission for such structures are sought under both the resource consent process and through building permits.

The term “lawfully” is appropriately included in this *Method*, as it makes it clear that it refers only to structures considered by the TA’s and excludes those that have been erected illegally. Any illegal structures need to be removed. Lawfully does not mean “permitted” as indicated in Submission **4/28**. Submission **11/40** is also rejected on this basis.

It is accepted that control over construction and maintenance of hazard mitigation works is carried out through monitoring and enforcement of the consent conditions as indicated in Submission **4/27**. Although it may be possible to argue that a resource consent process does include the monitoring and enforcement of the conditions of its consent, it is important that the *Method* states accurately the methods the ARC and TAs will use.

Submission **11/42** argues that this method, as currently worded, puts the responsibility of ensuring ongoing compliance onto the ARC and TAs. It is agreed that construction and ongoing maintenance of hazard mitigation works is the responsibility of the owner of the structure and this is corrected in Section 11.4.3 *Reasons* paragraph 4 of the Proposed Change. It is also important that this is also made clear in the *Method*.

**4.36 Section 11.4.2.16 Method 16**

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/69	Waitakere City Council	Amend Method 11.4.2.16 to indicate that the educational strategies should be coordinated and integrated between the ARC and the TAs.	
11/43	Manukau City Council	Delete 11.4.2 method 16 reference to preparedness for an emergency as these are best addressed through CDEM processes (see also submission 11/44).	
11/44	Manukau City Council	Amend 11.4.2 method 16 to cross reference to Civil Defence Emergency Management legislation (see also submission 11/43).	

**Decision:**

Submission 37/69 is accepted as amended in Appendix 1 (Method 11.4.2.16).  
 Submissions 11/43 and 11/44 are rejected.

**Reason:**

*Method 11.4.2.16* provides the joint role that ARC and TAs have in carrying out “consistent” education strategies. These strategies will be coordinated, as requested by Submission **37/69**, consequently ensuring consistency.

The purpose of the Plan Change is to ensure that all the relevant legislation dealing with natural hazards is integrated and dealt with in a consistent manner. It is appropriate that the education strategies do cover information about the natural hazard itself as well as how to respond in an emergency. It is acknowledged that this covers both RMA and CDEM Act functions, contrary to the premise of submission **11/43**. This is made clear in the last paragraph of Section 11.4.3 *Reasons* and therefore it is not necessary to repeat this in the *Method* as requested by submission **11/44**.

#### 4.37 Section 11.4.2.17 Method 17

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/70	Waitakere City Council	Retain Method 11.4.2.17.	
5/30	Papakura District Council	Retain 11.4.2 method 17 as it is appropriate to identify the need for the ARC and TA's to coordinate activities and provide for planning related to civil defence emergency management across the areas of reduction, readiness, response and recovery to avoid or mitigate the effects of natural hazards.	

#### Decision:

Submissions 37/70 and 5/30 are accepted with no amendments required.

#### Reason:

The submissions support the *Method*, as appropriate

#### 4.38 Section 11.4.3 Reasons

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
4/32	North Shore City Council	Amend Reasons 11.4.3 page 11-5, paragraph 4, right-hand column, to use the word 'avoided' rather than the word 'discouraged' as this should be the intention in known hazard zones.	
4/33	North Shore City Council	Amend Reasons 11.4.3 page 11-5, right hand column paragraph 4 beginning " <i>The RPS requires that TA's will .....</i> ", to add the following " <u><i>Any development that is permitted should not accelerate or worsen the known hazard or divert flow onto other properties</i></u> "	
37/74	Waitakere City Council	Amend Reason 11.4.3 to give more detail on risk assessment.	
48/141	Auckland City Council	Amend 11.4.3 by adding the following text: <i>The stormwater drainage networks are an essential component of any urbanised area and are fundamental to the sustainable management of the Region's urbanised areas. At times the network and mitigation works associated with the network will have localised adverse effects. However, by their very nature, the networks provide beneficial long-term effects on the urban environment at a catchment level. These beneficial effects significantly outweigh any localised adverse effects.</i> The proposed change emphasises the adverse effects of mitigation works. The public stormwater system has, as its primary purpose, the avoidance or mitigation of adverse effects of stormwater on the environment. While mitigation works and the network infrastructure itself may, at times, have localised adverse effects, they are only undertaken to provide positive effects on the wider environment.	<b>Supported By:</b> 71 Metro Water Limited <b>Opposed By:</b> 37 Waitakere City Council
4/29	North Shore City Council	Seeks a rewrite of reason 11.4.3 so that it is less disjointed and repetitive.	
4/30	North Shore City Council	Amend Reasons 11.4.3 by replacing the words 'catchment management plans' with the words	

		‘integrated <i>catchment management plans</i> ’ as this is standard ARC terminology for these plans.	
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## Decision

Submissions 4/33, 37/74, 4/30 are accepted as amended in Appendix 1 (Section 11.4.3 Reasons)  
 Submissions 4/32, 48/141, 4/29 are rejected.

## Reason:

Submission **4/32** requested changes to reflect that development in hazards zones be ‘avoided’ rather than ‘discouraged’. Avoiding development is not always possible and can be acceptable where any adverse effects are appropriately mitigated – hence this submission is rejected.

Submission **4/33** is concerned that some of the consequences of development permitted in hazard zones will not be known. This concern is valid. Therefore the wording proposed by the submitter is accepted with subsequent amendments made to this paragraph to provide greater clarity around this issue.

This section refers to the TAs utilising CDEM assessment to determine which hazards pose greatest risk. Submission **37/74** requested more detail be included on the methodology behind such a risk assessment. This information is in the *Hazard Guideline No. 2 (ARC Technical Publication No. 106)*. Hence amendments are made to this section cross-referencing to this document.

Submission **48/141** is concerned that inadequate consideration has been given to the overall benefits and positive effects of a storm-water system. Catchment-wide benefits that outweigh local adverse effects will be decided on a case by case basis and options that avoid adverse effects should generally be preferred. The last sentence of the 9<sup>th</sup> paragraph starting “Mitigation works...” clearly states the need to assess the benefits against any potential adverse effects on the environment. Hence the change sought by the submitter is unnecessary.

Consistency of terminology as requested by Submission **4/30** assists in the clarity of the document. Thus, amendments are appropriate to make reference to “integrated catchment plans” rather than the term “catchment plans”.

Submission **4/29** sought a rewrite of this section to relate better to the policies and methods and avoid repetition of policies and statements that read like rules. The function of the *Reasons* is to provide an explanation of policies and methods and as drafted and amended by various submissions. Further, there have been a number of changes and amendments to wording and terms used, that will satisfy this submission.

### 4.39 Section 11.4.3 Reasons - Roles and Responsibilities

NO.	Submitter	Summary of Decision Sought	Further Submitter/s
37/75	Waitakere City Council	Amend Reason 11.4.3 to clarify the detail and timing of the requirement on TAs to develop and maintain databases on natural hazards.	
5/31	Papakura District Council	Amend reasons 11.4.3 to identify that TAs will be limited in their ability to meet the objectives and policy outcomes given resourcing and priority constraints, and will require significant guidance and assistance from the ARC.	<b>Supported By:</b> 37 Waitakere City Council
4/31	North Shore City Council	Amend Reasons 11.4.3 to acknowledge that TA's are often faced with change of ownership situations or situations where developers go out of business and are unable to carry out mitigation works required through their resource consents. This places an	

		unfair burden on TA's to carry out mitigation works in such instances.	
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**Decision:**

Submissions 37/75, 5/31 are accepted with no further amendments required.  
Submission 4/31 is accepted as amended in Appendix 1 (Section 11.4.3 Reasons)

**Reason:**

Submission **37/75** requested that this section provide clarity regarding the TAs' database, while submission **5/31** has additional concerns with limited resources that TA's have to manage natural hazards.

Section 35 of the RMA requires every local authority to monitor (gather information and do research) the state of the environment of its region/district to the extent that is appropriate to enable the local authority to carry out its functions under the RMA. Controlling the use of land for the purpose of avoiding or mitigating the adverse effects of natural hazards is a function for local authorities. *Methods 11.4.2.1 and 11.4.2.2* reflects section 35 as well as section 62(1)(i)(i) of the RMA in terms of being very clear about which hazards the ARC will collect information on at a regional level and the natural hazards TAs are responsible for. These methods also clearly indicate that the ARC does not have responsibility for research/information gathering down to a city/district level or site specific level. Having said that, it is not the intention of *Method 11.4.2.2* to require TAs to undertake more work than is currently undertaken but to simply reflect the status quo. Hence changes as a result of other submissions have been made, which satisfies these submissions.

Submission **4/31** is concerned that the proposed paragraph regarding responsibility for the construction and maintenance of mitigation works does not cover all situations. This is an ongoing concern for consenting authorities. Hence it is appropriate that this section is amended giving direction to ongoing responsibilities and expectations.

**4.40 Section 11.4.3 Reasons - Riparian and Coastal Areas**

<b>NO.</b>	<b>Submitter</b>	<b>Summary of Decision Sought</b>	<b>Further Submitter/s</b>
4/35	North Shore City Council	Amend Reasons 11.4.3 page 11-6, paragraph 6, left hand column, by wording the paragraph to provide a more holistic view of advantages and disadvantages of riparian planting near stream channels.	<b>Supported By:</b> 48 Auckland City Council
4/34	North Shore City Council	Amend Reasons 11.4.3 page 11-6, paragraph 5, left hand column by rewording the paragraph to provide a clear meaning of the purpose for piping streams and to clearly state that there are possible risks to flooding from the piping of streams.	
37/73	Waitakere City Council	Amend Reason 11.4.3 to include discussion of the appropriateness of coastal and riparian setbacks.	
37/71	Waitakere City Council	Amend Reason 11.4.3, page 11-6, paragraph 5 beginning "Piping of streams" to more fully discuss the consequences of piping streams, and the intersection of this issue with the sustainable management of aquatic habitats etc.	
37/72	Waitakere City Council	Amend Reason 11.4.3, page 11-6, paragraph 6 beginning " <i>Mitigating works such as riparian planting.....</i> " to include discussion of the positive effect that appropriate planting can have on flood mitigation and prevention.	<b>Supported By:</b> 4 North Shore City Council

**Decision:**

Submissions 4/35, 37/72, 4/34, 37/73 are accepted and as amended in Appendix 1 (Section 11.4.3 Reasons).

Submission 37/71 is rejected.

**Reason:**

Submissions **4/35** and **37/72** are concerned that the advantages of riparian planting are not acknowledged in relation to mitigation works. This concern is acknowledged and the section amended to reflect that riparian planting generally does have positive advantages including improvement of freshwater habitat and stabilisation of stream channels.

Submission **4/34** requests that the proposed paragraph on piping of streams is reworded to provide clearer meaning, while submission **37/71** requested further more fuller discussion around the consequences. The level of detail sought by submission **37/71** is inappropriate. However, changes in response to other submissions will satisfy submission **4/34**.

With regard to a discussion on the appropriateness of coastal riparian setbacks (submission **37/73**), it is considered appropriate to amend the first bullet point of the 21<sup>st</sup> paragraph of Section 11.4.3 *Reasons*, to satisfy this submission, as amended in Appendix 1.

## 5. DECISION

- 5.1 That the submissions and further submissions, evidence presented at hearings and subsequent legal review carried out by Council's legal counsel; be received
- 5.2 That further to the evidence produced in hearings and pursuant to Clause 10(1) of the First Schedule of the Resource Management Act 1991, the recommendations of the Hearings Report be accepted as follows:
- i. Submissions no. 59/7, 4/2, 11/24, 5/23, 4/4, 37/39, 37/76, 71/11, 11/29, 37/40, 11/32, 4/26, 4/15, 4/6, , 37/46, 71/4, 4/10, 4/11, 4/12, 11/33, 4/13, 71/9, 37/47, 4/19, 37/48, 37/49, 37/50, 11/34, 5/26, 37/56, 37/57, 37/58, 5/29, 11/38, 37/61, 4/22, 37/63, 11/39, 37/64, 37/65, 4/25, 37/68, 11/41, 4/27, 11/42, 37/69, 37/70, 5/30, 4/33, 37/74, 4/30, 37/75, 5/31, 4/31, 4/35, 37/72, 4/34, 37/73; are **accepted** for the reasons given in Section 4 of this Decision Notice above
  - ii. Submissions no. 48/120, 11/25, 4/3, 11/26, 4/5, 5/24, 5/25, 48/121, 37/42, 37/44, 37/45, 71/6, 48/123, 71/5, 4/17, 4/20, 37/52, 37/51, 37/55, 37/53, 37/54, 37/60, 37/62; are **accepted in part** for the reasons given in Section 4 of this Decision Notice above.
  - iii. Submissions no. 35/2, 34/2, 68/7, 35/4, 34/4, 68/9, 48/119, 4/1, 37/38, 11/28, 11/30, 11/31, 11/27, 71/1, 4/14, 37/41, 37/43, 71/2, 71/3, 48/122, 48/124, 4/7, 4/8, 4/9, 4/16, 48/125, 71/8, 71/7, 48/126, 4/18, 48/127, 71/10, 48/128, 48/129, 48/130, 48/131, 48/132, 48/133, 48/134, 48/135, 48/136, 48/137, 48/138, 48/139, 48/140, 11/35, 11/37, 11/36, 4/21, 5/27, 5/28, 37/59, 4/23, 4/24, 37/66, 37/67, 4/28, 11/40, 11/43, 11/44, 4/32, 48/141, 4/29, 37/71; are **rejected** for the reasons given in Section 4 of this Decision Notice above.
  - iv. That the further submissions made in support of or in opposition to the submissions noted in i., ii. and iii. above are **accepted or rejected** accordingly.
- 5.3 That the Auckland Regional Policy Statement is hereby amended in the manner indicated in Appendix 1 of this Decision Notice

Paul Walbran  
Chair  
Regional Policy Statement Plan Change No. 10 Hearings Committee

7 November 2006

**APPENDIX 1  
AMENDMENTS TO THE PLAN TEXT**

(Additions shown underlined and deletions in strikethrough. Items within [ ] do not form part of the text)

## Chapter 11 Natural Hazards

### 11.1 Introduction

The Auckland Region, like much of New Zealand, is at risk from a range of natural hazards. The irregular occurrences of natural hazard events means they are often poorly understood. Many of the land use management decisions made in the past have tended to exacerbate the risk<sup>1</sup>. With the continual growth of the Auckland Region, it is important that public authorities recognise the risk from natural hazards and undertake co-ordinated responses to ensure the long-term reduction in risk posed to the Region.

Natural hazards are defined within the RM Act as:-

*"Natural hazard means any atmospheric or earth or water related occurrence (including earthquake, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire or flooding) the action of which adversely affects or may adversely affect human life, property or other aspects of the environment."*

Throughout the Auckland Region natural hazards occur in varying severity, in location, and in time. Each natural hazard poses a different risk to human safety and wellbeing, (including public health), infrastructure, and the environment. To deal with the risks posed by natural hazards the RM Act (sections 30, 31 and 35) gives functions to the ARC and TAs aimed at the avoidance or mitigation of the resulting impacts. These functions include developing and placing controls, such as policies and rules, within planning documents or resource consents to ensure adequate measures are taken to protect human life, property and the environment from the impacts of natural hazards.

In developing policies and rules aimed at dealing with the risks and impacts of natural hazards, it is recognised that a 'partnership' between development and nature must be established. This partnership must aim at keeping people away from natural hazards, rather than natural hazards from people.

The most commonly occurring natural hazards in the Auckland Region are flooding (from both

overflow and inundation), both in rural and urban areas, and erosion/land instability. Impacts of erosion/land instability are generally limited to smaller areas and are not Regionally significant. TAs have a number of existing controls for these natural hazards, which are referenced in district plans, and exercised mainly under the Building Act 2004 and the Resource Management Act 1991. The ARC has traditionally worked with these councils towards compatible policy.

The coastal environment is particularly susceptible to natural hazards. Within the Auckland Region the primary natural hazards arising from coastal processes include erosion, inundation of low lying areas, land instability, rising mean sea level and tsunami. These natural hazards may occur individually, or combine to create a cumulatively more significant natural hazard.

The sustainable management of the coastal environment with respect to natural hazards should involve the consideration of the particular natural hazard in the wider context (both above and below MHWS, and over longer time periods), to ensure appropriate methods are used to avoid, remedy, or mitigate natural coastal hazards, while protecting the natural character and processes of the coastal environment.

The least frequently occurring natural hazards include earthquakes, volcanism, tsunami, various meteorological effects (cyclones, tornadoes, drought) and fire. While of low frequency, they are potentially of major Regional significance and not easily dealt with through land use control strategies. The risks of these natural hazards are poorly understood. The Civil Defence Emergency Management Act 2002 sets out how the region will jointly manage natural (and technological non-natural) hazards. This Act requires Local Authorities to plan for hazards across the key areas of reduction, readiness, response or recovery. This ensures that these infrequently occurring natural hazards Potential impacts are currently mainly are dealt with by contingency controls such as civil defence and insurance systems.

### 11.2 Issue

#### **11.2.1 Natural hazards pose a risk to people, property, infrastructure and the environment in the Auckland Region**

Much of the Region is at risk from one or more natural hazards. In particular, flood damage has

<sup>1</sup> Risk = Consequences x Likelihood

had significant impacts in catchments such as the Kaipara River, Hingaia stream, and Opanuku stream. There are innumerable smaller urban catchments in which the risks posed by flooding are serious. Often these risks are exacerbated by the inappropriate location of buildings and infrastructure in flood prone areas or by flood peaks heightened by an increase in impermeable surfaces in urban catchments. (Infrastructure includes essential lifelines such as transport, water, wastewater, stormwater, telecommunications, and power. The consequence of infrastructure failure as a result of a natural hazard often poses significant and widespread risk to the community in addition to the risk posed by the hazard event itself). ~~adverse impact of natural hazards on infrastructure can exacerbate the original hazard and result in wider disruption than caused by the event itself).~~

Serious coastal erosion is occurring around the Region, creating a risk to property and infrastructure. Destruction of property at Omaha in the late 1970s provided a graphic demonstration of the Region's vulnerability to coastal erosion hazards. Almost the entire length of the Auckland coastline is subject to a landwards regression. The area that is likely to be susceptible to the coastal erosion hazard along the Auckland coastline is highly variable due to a number of factors, such as the variability in wave climate and the competency of the underlying material. A broad scale assessment, or regional overview, of areas susceptible to coastal erosion in the Auckland Region over the next 100 years has indicated that for beach environments the areas 'likely' to be susceptible to erosion range from 6 metres landward of the vegetation line at stable beaches with low/limited sand dune systems, to 55 metres at more variable beaches with highly development dune systems. For cliff areas the assessment has indicated the 'possible' areas susceptible to erosion effects, extending landward from the toe of the cliff, range in width from about 5m in low, competent volcanic cliffs to 235m in high, weakly consolidated cliffs. ~~a range of 6 - 16m/100years at sheltered, stable beaches to 55 - 124m/100years at more exposed beaches. The area susceptible to the coastal erosion hazard along Auckland's cliffed coastline varies from approximately 5m/100years in low, competent volcanic cliffs to 235m/100years in high, weakly consolidated cliffs. Site specific analysis is required to determine the actual area susceptible to coastal erosion at any particular site. With continual pressure for development along the coastal~~

margins and with predicted sea level rises associated with global climate changes, the risk is likely to increase in the future. ~~The setting aside of esplanade reserves or strips is one means of addressing this issue (See Chapter 18).~~

Land instability occurs as a result of steepness, and because of the existence of a number of inherently unstable geological units, which are widely distributed in the Region.

Cyclones also affect the Auckland Region, bringing high wind speeds and heavy rainfall. These events can cause flooding, coastal erosion and instability all at the same time. In addition, they often cause damage to essential lifeline utilities such as power and telecommunications. Severe cyclones, causing effects such as flooding, winds, storm-surge and landsliding that are beyond those planned for in District Plans, affect the Auckland Region on average once every 100 years.

Although the frequency of occurrence is much less than the above natural hazards, the impacts of major natural hazard events, such as volcanic activity or earthquakes, would be extremely catastrophic for the Region. Historic volcanic eruptions in Auckland have occurred at different locations about once every 1000 years and tsunami waves of 1-3m may occur about once every 75 years.

Many natural hazards are not well understood in terms of location, frequency, magnitude and consequences. As a result risk avoidance or reduction mechanisms may be difficult to justify because of gaps in knowledge and understanding, giving rise to increased risk.

Often the level of information required to assess the degree of risk of natural hazards requires a greater level of expenditure than is currently undertaken by TAs. In these situations a precautionary approach is appropriate

In addition, many people have two common misconceptions of risk: many people do not understand that events occur randomly so that (for example) a recent major event is taken to indicate that the next one won't occur for some years; and many people do not appreciate that an extreme event (e.g. 1% AEP) has a significant chance of occurring in their lifetime. These misconceptions can also result in behaviours and decisions that increase risk.

Traditional approaches to natural hazard management have involved the protection of

people and the environment from natural hazards. Some of these measures, such as flood protection schemes and seawalls, may themselves have an adverse impact on the environment.

### 11.3 OBJECTIVE

To avoid, remedy, or mitigate the adverse effects of natural hazards on human life, property, infrastructure and the environment, while minimising the adverse effects of measures implemented to reduce the risks of natural hazards.

### 11.4 POLICIES, METHODS AND REASONS

#### 11.4.1 Policies

The following policies and methods give effect to Objective 11.3.

~~1. The responsibilities of the ARC and the TAs shall be as per the Methods in 11.4.2~~

1.2 Natural hazard management shall be integrated and co-ordinated between the ARC and TAs within the Auckland Region, and with adjoining regional councils.

2.3 Before provision is made enabling ~~significant~~ development or redevelopment of land, including intensification of land use, any natural flood hazards, particularly flooding, land instability and coastal hazards, and measures to avoid or mitigate their adverse effects shall be identified.

3.4 Development shall not be ~~allowed/discouraged in the 1% AEP flood plain flood hazard zones~~ unless it can be demonstrated that: all habitable floor levels are protected from the 1% AEP flood level, and that structures in the 1% AEP flood level do not divert overland flows onto neighbouring properties.

~~(See Appendix D for the definition of AEP)~~

a. The development's All habitable floor levels are protected from the 1% AEP flood level.

b. Access to buildings for emergency egress is ~~in~~ maintained, and

c. New Structures and reclamation within the 1% AEP flood plain level do not divert overland flows onto neighbouring properties, worsen or accelerate the hazard

d. Materials that would pose a hazard if carried away by floodwaters shall not be stored within the 1% AEP flood plain.  
(See Appendix D for the definition of AEP)

4.5 Development shall not be ~~allowed~~ permitted if changes in stormwater runoff quantities in events ~~with AEPs of 1% or more~~ are not larger than the 1% AEP event are likely to accelerate, worsen or result in flooding of other property, unless it can be demonstrated that the adverse effects can be avoided or mitigated

~~6. Where changes in the use of land allows for the construction of habitable buildings, such buildings shall not be permitted to be constructed in the 1% AEP flood hazard zone, unless the hazard can be avoided and access maintained~~

5.7. Where development or use exists within areas susceptible to natural hazards, ~~C~~construction of mitigation works shall be ~~permitted~~ allowed only where people, property, infrastructure and the environment are subject to ~~unacceptable~~ risk from hazards, the works are the best practicable option, and any adverse effects on the environment are avoided, remedied or mitigated. The abandonment or relocation of existing structures and the use of non-structural solutions shall also be considered among the options.

(See also Chapter 7 Coastal Environment)

~~8. When carrying out flood mitigation works, existing vegetations shall be retained, where appropriate, to aid stability and maintain environmental quality. However, the planting of vegetation, which may, because of growth habit etc., restrict water flow and exacerbate the flooding hazard, shall be avoided.~~

~~See also Chapter 12 Soil Conservation, Policy 42.4.4-4~~

6. Any works within the 1% AEP floodplain and within overland flowpaths a watercourse shall be carried out in a way that in events with AEPs of 1% or more not larger than the 1% AEP event does not create or exacerbate a flooding hazard, either at the site or at any location upstream or downstream of the works. Works within a watercourse include (but are not limited to) riparian planting, piping of streams, and the construction of culverts, bridges, retaining walls and other structures.

~~7.9.~~ Development shall not be ~~permitted~~ allowed in areas subject to erosion/land instability unless it can be demonstrated that the adverse effects can be avoided or mitigated.

~~8.10.~~ In the coastal environment, new subdivision, use or development should be located and designed, so that the need for hazard protection measures is avoided.

~~11.~~ Where existing subdivision, use or development is adversely affected by a coastal hazard, coastal protection works should be permitted only where they are the best practicable option for the future. The abandonment or relocation of existing structures and the use of non-structural solutions should be considered among the options. Where coastal protection works are the best practicable option, they should be located and designed in a manner consistent with Chapter 7 – Coastal Environment

~~9.12A~~ A precautionary approach shall be used (including in the development and implementation of plans) in avoiding, ~~remedying~~, or mitigating the adverse effects on ~~development~~ people, property, infrastructure and the environment of earthquake, volcanic activity, sea level rise, tsunami and ~~global climate~~ change.

#### 11.4.2 Methods

[The following Methods have been re-ordered from the Operative 1999 version and some Methods have been combined.]

~~1.15~~The ARC will gather information and undertake or commission research at a regional scale on natural hazards and their risks and impacts. Of natural hazards, particularly those that are Regionally significant, and make this information ~~This information shall be made available to TAs and the general public through a natural hazards database. This will include volcanic, tsunami, earthquake, cyclone, and coastal hazards including the effects of sea level rise and climate change.~~

~~2.~~ TAs will gather information and undertake or commission research on natural hazards, their risks and impacts at a district/city scale, and make this information available to all persons through a natural hazard database. This will include flooding, land instability, coastal hazards and active faults.

~~3.16~~The ARC, in consultation with relevant parties, will establish monitoring programmes for natural hazards of Regional significance, and make this information available to TAs and the general public.

~~4.17~~The ARC will investigate ~~undertake~~ ~~research~~ methods to avoid or mitigate or respond to natural hazards and make this information available to TAs and the general public.

~~5.3~~ The ARC and TAs will jointly advocate through the Auckland Civil Defence and Emergency Management Group methods to avoid, ~~remedy~~ or mitigate the adverse effects of natural hazards on the environment.

~~6.1.~~ The ARC will co-ordinate the management of natural hazards throughout the Region by ~~setting standards~~ developing guidelines and strategies, and ensuring consistency among TAs, by co-ordination of action in respect of natural hazards which extend across local boundaries, and by co-ordination of action with the appropriate regional council in respect of natural hazards which extend across regional boundaries.

~~7.6.~~ TAs will give effect to these policies by including objectives, policies, rules and other methods of implementation within district plans to control any actual or potential effects of the use, development or protection of land for the avoidance or mitigation of natural hazards.

~~8.10.~~The ARC will implement objectives, policies, rules and other methods with respect to any actual or potential coastal hazards arising from the use, development or protection of land in the coastal environment, marine area, through the provisions in the Regional Plan - Coastal, which will encourage subdivision, use and development in the coastal environment to locate in appropriate areas

See also Chapter 7 - Coastal Environment.

~~9.12.~~TAs will implement objectives, policies, and rules and other methods with respect to coastal hazards through provisions in district plans, including the use of esplanade reserves and strips and coastal setbacks for the purpose of avoiding, or mitigating natural hazards

See also Chapter 18 - Esplanade Reserves and Strips.

~~10.7. TAs will ensure that flooding, instability and coastal hazards are assessed management plans are prepared before any new areas are rezoned in ways that which enable intensification of use, or where development is likely to cause adverse effects. This should may be done as part of a wider planning process or structure planning process (as described in Appendix A).~~

~~11.4. The ARC will e.g. for example by advocacy and through Regional Plan provisions) promote a comprehensive catchment-wide approach to flood management.~~

~~12.2 The ARC will regulate diversions and discharges of stormwater in order to avoid or mitigate adverse effects of flooding and erosion, through the Regional Plan provisions and resource consent process.~~

~~13.5. The ARC will, where appropriate transfer TAs will undertake day to day flood management functions. These functions may include (but need not necessarily be limited to): monitoring of flows and water levels, issuing warnings to the public and alerting civil defence, operation of floodgates, and infrastructure maintenance such as clearing of debris from culvert inlets and other hydraulic structures. powers and duties to TAs.~~

~~14.9 Within the 1% AEP flood plain and overland flow-paths hazard zones TAs and ARC, will control infilling reclamation and storage of materials likely to be moved by flood events, and ensure that development within the area zone is located in such a manner as to avoid or mitigate adverse effects of flooding and erosion limit the restriction of flood flows~~

~~15.8 The ARC and TAs, through the resource consent process, building permits, and monitoring and enforcement procedures will ensure that any lawfully established hazard mitigation works are undertaken, and that they are is adequately constructed and maintained. Construction and ongoing maintenance of hazard mitigation works is the responsibility of the owner.~~

~~16.14 The ARC and TAs will develop and carry out coordinated consistent educational strategies aimed at providing the general public with a greater understanding of risk associated with natural hazards, their associated risks, how these risks are being addressed throughout the Region and how to be prepared for an emergency.~~

~~17.48. The ARC and TAs will co-ordinate activities and provide support for planning related to Civil Defence in planning and implementing measures to guard against, prevent, reduce or overcome emergency management across the areas of reduction, readiness, response and recovery to avoid or mitigate the effects of natural hazards.~~

#### 11.4.3 Reasons

Sections 30 and 31 of the RM Act give the ARC and TAs similar responsibilities functions in relation to the avoidance or mitigation of natural hazards. The RM Amendment Act 1993 enables the RPS to define the respective responsibilities of regional and territorial councils. It is important to clarify the respective roles of these agencies in order to avoid public confusion and to ensure that natural hazards management is undertaken at optimum efficiency and effectiveness.

While most natural processes which that cause coastal hazards originate in the CMA, their adverse effects are usually expressed on the land above Mean High Water Springs (MHWS) where regional councils and TAs both have respective responsibilities. In order to achieve integrated and co-ordinated management of coastal hazards in the Auckland Region, these responsibilities need to be clearly identified.

The ARC will ensure consistency of approach and maintenance of standards across the Region and the development of guidelines and strategies. By virtue of its responsibilities under sections 14 and 15 of the RM Act, the ARC regulates diversions and discharges of stormwater that which occur as a result of development. Because of the TAs' involvement in land use planning and the control of building development, it is more appropriate that they control stormwater discharges, subject to attaining standards adopted across the Region. The ARC intends to establish such standards while also continuing to allocate direct control to TAs via the comprehensive resource catchment-wide network discharge consents process or via granted under the proposed Auckland Regional Plans: Air, Land and Water. Any such allocations shall be based on the production of flood integrated catchment management plans produced on a catchment-by-catchment basis.

~~Due to the localised nature of flooding in the Region, responsibility for the construction and maintenance of flood protection works~~

~~should fall at the local level where the community of interest lies.~~

Responsibility for the construction and maintenance of mitigation works should be borne by the owner or their successors ~~person undertaking the works~~. The relevant consenting authority above MHWS (territorial local authorities) and below MHWS (regional council) should ensure this is undertaken to an adequate standard through resource consent conditions and that appropriate legal mechanisms (such as bonds or covenants) are in place to provide for on-going maintenance of works undertaken by private persons.

The RPS requires that TAs will take responsibility via their district plans for ensuring that redevelopment or intensification is discouraged in known hazard zones. For presently undeveloped areas (e.g., rural), where the land use may change (e.g., urbanised), no new development will be permitted in the 1% AEP flood plain, unless the hazard can be avoided by, for example, setting floor levels above the flood hazard level. Any development that is permitted should not accelerate or worsen the known hazard or divert flow onto other properties. Access to and from buildings should be maintained during flooding for purposes of evacuation.

The community has accepted a level of flood protection equivalent to a 1% AEP for a number of years, and it is considered appropriate to maintain this standard. The RPS policies and methods, formulated under the RMA, take a long term (intergenerational) view and consider a wide range of effects. Therefore it can be more restrictive than the standards imposed under the Building Act.

Traditionally, the management of risk from natural hazards in New Zealand has revolved around mitigation works, or the physical protection of people, property and the environment from the effects of hazards. A typical response to flood risk, for example, is to attempt to prevent flood events from inflicting damage on the environment. The erection of stopbanks is a classic example. Whilst protection works are generally of immediate success, they only afford protection up to their design capacity. Yet this is frequently ignored by public authorities who at times permit development in areas 'protected' by structural works. The resulting damage when the design capacity of the works is exceeded is often catastrophic.

In the future the approach in the Auckland Region to natural hazard management will be one of emphasising avoidance, or prevention, as opposed to protection. This chapter recognises that hazard events are natural occurrences and that the risk is created by locating activities in inappropriate places. However, where there are existing areas at risk from natural hazards, reduction or mitigation of the risk must be undertaken.

Mitigation works can have significant environmental effects and should be considered as the least desirable option for hazard control, except where there is an unacceptable risk to people and their property, infrastructure, and the environment. In assessing any mitigation works, it is necessary to assess the benefits afforded versus any potential adverse effects on the environment.

~~Mitigation works may involve the unnecessary removal of existing vegetation, when this may provide, in the case of stream banks, some natural stability. The unnecessary removal of vegetation may exacerbate erosion. The planning of inappropriate types of vegetation needs to be controlled so as to avoid any unnecessary restrictions to water flow which may exacerbate, or create a flood hazard.~~

Some structures, notably culverts and some bridges, occupy not only the 1% floodplain but parts of the stream channel proper. Depending on their design, they may obstruct flood flows, especially during larger events. The design of these structures needs to ensure that they do not exacerbate the flooding risk.

Piping of streams is generally done to prevent nuisance flooding and removes any flooding hazard up to the capacity of the pipe system. Overland flow paths are then needed for flows from yet larger events in excess of the pipe system capacity. The design of the overland flow paths needs to ensure that the flooding risk is not exacerbated for these events. Piping of streams removes any flooding hazard up to the capacity of the pipe system. The design of overland flow paths needs to ensure that the flooding risk is not exacerbated for flows in excess of the pipe system capacity.

Mitigation works such as riparian planting generally improve freshwater habitat and stabilise stream channels. However, they may also modify the stream channel's hydraulic performance in high flows. In particular, riparian planting of bare or grassed stream banks will

increase the channel's flow resistance. Planning of such mitigation works needs to ensure that they do not exacerbate the flooding risk. This may affect the choice of plant species.

Coastal protection measures have the potential to worsen the adverse effects of coastal hazards, and adversely affect many aspects of the coastal environment. Softer solutions (planting, beach nourishment, etc.) often prove to be more effective in mitigating or remedying the adverse effects of hazards and better preserve the natural character, landscape and amenity values of the coastal environment. Coastal protection measures should be avoided unless they are the best practicable option. Refer also to the NZCPS and the Auckland Regional Plan - Coastal.

To implement controls that which avoid, reduce, or mitigate the risk and/or effects of natural hazards, an assessment of these hazards must be undertaken. Hazards of a regional scale should be assessed by the regional council and information made available to all. Local hazards that require site specific investigation and that can be addressed through land use planning should be assessed by territorial authorities and information be available at a local or site-specific scale.

~~For coastal hazards, a regional coastal hazards database will be developed, which will define the extent of areas likely to be subject to coastal hazards in the Region, including the possible effects of sea level rise.~~

Generally, development of land, and the form in which it takes place, is allowed through the district plan and/or resource consents. The Building Act (2004) requires a building consent authority to refuse consent if land is subject to, or could worsen a natural hazard unless adequate provision has been made to protect the property or restore any damage. In order to effectively control the impact of natural hazards on the environment development, TAs must ~~therefore~~ ensure that risks, and likely effects of locally important natural hazards, are defined prior to development, and measures adopted to deal with these. A number of techniques have been developed for assessing and controlling these hazards including:

- Flood routing and flood plain delineation procedures. (Most consulting firms have standard or proprietary programmes for this.)

- Calculating runoff quantities and flow rates. (ARC has developed a methodology set out in Technical Publication 108: "Guidelines for Stormwater Runoff Modelling in the Auckland Region")
- Coastal erosion sensitivity indexes and hazard mapping techniques. (DoC has established methodologies and national databases in this area.)
- Geotechnical instability assessments including seismic response. (Standard, internationally used engineering and geological tests are available.)
- Sea level rise estimates. (Intergovernmental Panel on Climate Change (IPCC) provides estimates of the rise in global mean sea level. The ARC provides information on the best available local estimates.) ~~(DoC has established methodologies and national databases in this area).~~

Many of these techniques have been developed by central government organisations for national use, and these are recommended as initial starting points for analysis. Other methodologies are easily obtained through universities or consulting firms. (The ARC has in the past provided a lead in the preparation of flood management plans and intends to continue this approach for coastal, seismic and atmospheric hazards.)

It is important for TAs to prioritise assessments and controls towards natural hazards that pose the greatest risk most common and best able to be addressed through planning and engineering techniques. TAs should utilise local Civil Defence and Emergency Management assessments to determine which hazards pose greatest risk within their city or district. Information on risk assessment methodology can be found in the Hazard Guideline No. 2 (ARC Technical Publication No. 106). ~~Currently throughout the Auckland Region, flooding, erosion and instability (dominantly coastal) are the main hazards which directly affect or threaten the regional environment, and effort should be initially towards these.~~

Other hazards such as seismic events, volcanism, severe meteorological conditions, tsunami and sea level rise also pose threats to the Regional environment. The scale and locale of effects of these are comparatively difficult to determine and therefore should be considered on a regional scale. The ARC will provide

guidance on assessment and avoidance or mitigation techniques to the Region on these hazards, develop a regional natural hazards database, and establish risk assessment models for this purpose.

TAs will also develop local databases for the purpose of maintaining property specific hazards information in an accessible format for both staff and the general public, including the production of Land Information Memorandums and Project Information Memorandums. It is not the intention of these methods to require TAs to undertake more information gathering on natural hazards than what currently occurs.

The issue of climate change and its predicted impacts, including sea level rise, intensification and increasing regularity of extreme weather events, has national as well as Regional significance. The ARC will actively encourage national research in this area.

Generally it is considered that planning and engineering controls can be exercised through district plans and resource consents to ensure:

- Restriction of development from zones which have active hazards (e.g., coastal cliff tops and cliff bases or stream banks). In many locations this can be done through establishing coastal and riparian setbacks, to allow retirement of land to natural vegetation.
- Development is not adversely affected by hazards (e.g., requiring engineering stability reports and designs).
- Development does not increase the risk and adverse effects of hazards (e.g., enforcing strict vegetation clearance controls, ensuring floor heights of buildings are above flood levels of concern, controlling development in areas which have potential problems such as land instability).
- Use of vegetative techniques wherever possible to reduce hazard risks and/or effects of hazards (maintaining appropriate vegetation in catchments, planting of coastal cliffs or sand dunes).

In dealing with natural hazards where little information is available, it is considered prudent to use a precautionary approach, e.g., the NZCPS policies. This is particularly important when dealing with the effects of global climate change and subsequent sea level rise trends. Further, in light of MfE documents discussing

global climate issues, the most recent estimates from the Inter-governmental Panel on Climate Change, as well as national and regional estimates, will be used in determining the likely change in sea level.

Civil Defence Emergency Management plans and educational strategies are considered important components of dealing with the effects of natural hazards especially those that occur infrequently and in unpredictable or widespread locations. ~~It is recommended that both the regional and district territorial authorities will cooperate in preparation of Civil Defence plans and educational programmes and materials.~~ Emergency Management planning as stipulated in the CDEM Act (2002), across the 4Rs; Risk Reduction, Readiness, Response and Recovery.

### 11.5 Environmental Results Anticipated

- (a) The impacts of natural hazards on people, property, infrastructure and the environment development and the human population of the Auckland Region will be avoided or mitigated.
- (b) The costs to the community of dealing with the effects of natural hazards will be reduced.
- (c) Improved public awareness of the potential risks posed by natural hazards.
- (d) The adverse effects of natural hazard mitigation measures on the environment will be avoided or mitigated.

### 11.6 MONITORING

- (i) Regular monitoring of compliance with conditions on Regional resource consents, including comprehensive diversion and discharge consents, will be undertaken to ensure that flooding problems caused by new development are avoided.
- (ii) The establishment of monitoring procedures will provide warning of volcanism and a record of the Region's seismicity, so as to facilitate contingency procedures and minimise adverse effects.
- (iii) Coastal hazard assessment procedures will assist in the identification of coastal hazard zones and act as a base line for the avoidance of development in hazard areas.

## APPENDIX 1

Amendments to the Auckland Regional Policy Statement

Additions shown underlined and deletions in ~~striketrough~~.

### Appendix A

[Add the following bullet point in Appendix A Planning Process, Structure Planning]

#### Planning Process

Type of process	Responsibility	General scope and outputs
Structure planning	TAs	..... Structure planning will consider: ..... <ul style="list-style-type: none"><li>• <u>the existence of or potential for natural hazards including flooding, erosion, land slips/instability, coastal hazards, subsidence, sea-level rise, and active faults.</u></li></ul> The process will.....

## Appendix C

### LEGISLATION DEALING WITH RESOURCE MANAGEMENT

.....

#### **Civil Defence Emergency Management Act 2002**

Administered by the Ministry of Civil Defence and Emergency Management. Establishes a framework for national, and local functions and responsibilities in relation to civil defence emergencies including planning and preparation for emergencies and for response and recovery in the event of an emergency. The Civil Defence Emergency Management Act also requires local authorities to co-ordinate, through regional groups, planning, programmes, and activities related to civil defence emergency management across the areas of reduction, readiness, response and recovery.

See Chapter 11 - Natural Hazard

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