

# **HGI Plan Review: section 32 report for natural hazards**

## **1.0 Executive summary**

This report summarises the evaluation undertaken by the council of proposed district plan provisions relating to the avoidance and mitigation of natural hazards likely be found on the Hauraki Gulf islands, in terms of section 32 of the Resource Management Act.

The main conclusions are:

- There is a significant lack of certainty around the nature and timing of natural hazards. However, when they occur, natural hazard events have the potential to create significant adverse effects on the environment.
- Therefore the Council must take a precautionary approach to natural hazards because of the lack of accurate information on the likely effects of natural hazard events;
- The frequency and severity of natural hazard events will vary and their effect on people, the environment, property and infrastructure will vary as a result;
- Objectives, policies and rules are required to:
  - Prevent inappropriate development and activities that do not require a building consent from being placed or undertaken in natural hazard prone areas;
  - Avoid the creation or exacerbation of the risks of natural hazards by human activities;
  - Protect vegetation and natural features which may prevent or moderate the impact of natural hazard events; and
  - Minimise the use of hard engineering solutions to mitigate the effects of natural hazards.

## **2.0 Introduction**

### **2.1 Purpose of this report**

This report is to meet the section 32 requirements of the Resource Management Act.

### **2.2 Proposed plan provisions**

The plan provisions seek to avoid the effects of natural hazards (with a high return period of less than 100 years) on the environment, including life, property and infrastructure as far as practicable. It seeks to avoid the creation or exacerbation of the risks of natural hazards by human activities. The rules include set back distances from mean high water, rivers, streams, lakes and wetlands steep coastal cliffs and from steep slopes. It also requires a resource consent to build on land Council has identified as being affected by a natural hazard. The plan promotes the retention of natural defences (e.g. sand dunes) which provide protection from natural hazards and controls the use of hard engineering structures which may form a defence against flooding or erosion.

### **2.3 Consultation**

This section of the report briefly outlines the consultation that the council has undertaken to date and identifies any issues raised of particular relevance to the issue of natural hazards.

### **2.3.1 Consultation to date**

The council undertook consultation in 2005 in preparation for drafting the proposed Plan.

#### **Initial consultation**

The main consultation period was from April to July 2005. Consultation during that period consisted of:

- public meetings, workshops, nga hui, and one on one meetings
- a photographic exercise on Waiheke
- inviting written feedback on a consultation document which contained issues and options papers on a wide range of topics.

#### **Focus groups**

At the close of consultation, the council analysed the feedback forms received. From these, key issues were identified that subsequently became topics for focus groups on Waiheke. The four topics for the focus groups were:

- landscape
- transport
- sustainability
- future planning (including subdivision, growth, and providing for business activity).

An additional workshop was also held on Great Barrier to give a further opportunity to discuss issues raised through the feedback forms.

#### **Telephone survey**

The council commissioned an independent research company to undertake a phone survey in late 2005. The survey was of a randomly selected sample of 1002 on-island residents and off-island ratepayers of Waiheke, Great Barrier and Rakino. The questionnaire used for the survey was designed to get responses on the key issues that had emerged from the consultation process and stakeholder feedback.

The survey provided a means of canvassing the views of a wide range of people who may not have been previously involved in the consultation process.

#### **Consultation with other stakeholders**

During the preparation of a proposed plan, the council has also consulted with the following parties:

- the Auckland Regional Council ('ARC')
- the Department of Conservation ('DOC')
- tangata whenua
- network utility authorities
- Ministry for the Environment (MfE).

#### **Public notification**

Notification of the Plan provides an opportunity for further public participation through the formal submission and appeal process.

### **2.3.2 Issues raised during consultation**

Eleven people/groups gave feedback on the issues and options for natural hazards. The Department of Conservation and the Auckland Regional Council supported identification of natural hazards in the district plan with the ARC also supporting the assessment of what development is appropriate in those areas. Four others suggested that the plan provisions needed to address the subdivision or use of land if the subdivision, development or use of that land is likely to increase the natural hazards on that land or any other land. Several also wanted the plan to indicate that the Building Act and Building Regulations also deal with natural hazards.

## **3.0 Resource management issues and objectives**

### **3.1 Issues**

Section 31 of the Act specifically sets out as a council function the avoidance or mitigation of natural hazards. The purposes of the Civil Defence Emergency Management Act 2002 (CDEMA) also places a number of responsibilities on territorial local authorities that can be addressed through provisions in district plans:

- To improve and promote the sustainable management of hazards in a way that contributes to the social, economic, cultural and environmental well being and safety of the public and also to the protection of property;
- To encourage and enable communities to achieve acceptable levels of risk including identifying, assessing and managing risk and identifying and implementing cost effective risk reduction;
- To co-ordinate, through regional groups, planning, programmes, and activities related to civil defence emergency management across the area of reduction, readiness, response and recovery.

Section 7 of the CDEMA requires all persons exercising functions in relation to the development and implementation of civil defence emergency management plans may be cautious in managing risks even if there is scientific and technical uncertainty about those risks. Section 64 states that a local authority must plan and provide for civil defence emergency management within its district.

Natural hazard objectives, policies and rules within a district plan can lead to a reduction in the risk that natural hazard events may have on people and property.

In terms of natural hazards the Council has identified the following significant resource management issues which need to be addressed in the plan: how to manage the irregular/periodic exposure to naturally occurring events such as earthquakes, fires, drought, landslides, cyclones, floods, erosion, slope instability and subsidence, sea storm surge, tsunami, and volcanic and geothermic activity

The frequency and magnitude of these events will vary and their effects on the environment, people and property will vary as a result. Many natural hazards are not well understood, in terms of their possible location, frequency magnitude and consequences. However, natural hazards have the potential to have significant adverse effects on the environment.

Hazards such as coastal erosion are a natural process. These processes only become a hazard when it poses or is perceived to pose a threat to things that humans value.

The effects of some hazards (such as earthquakes and high winds) are adequately dealt with by the Building Act 2004, whilst other issues may be best dealt with by both the Resource Management Act 1991 and the Building Act.

### **3.2 Objectives**

- To avoid the effects of natural hazards on the environment, including life, property and infrastructure as far as is practicable.
- To avoid the creation or exacerbation of the risks of natural hazards by human activities as far as is practicable.
- To protect existing physical resources and natural defences which moderate the effects of natural hazards.

### **4.0 Statutory requirements under part II, sections 16, 31, 32, 72 and 76 of the Resource Management Act**

Section 31 sets out the council's functions for the purpose of giving effect to the Act. The council's functions include:

- (a) The establishment, implementation, and review of objectives, policies and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the district:
- (d) The control of the emissions of noise and the mitigation of the effects of the effects of noise:

Section 72 states as follows:

The purpose of the preparation, implementation, and administration of district plans is to assist territorial authorities to carry out their functions in order to achieve the purpose of this Act.

Section 74(1) of the RMA states as follows:

A territorial authority shall prepare and change its district plan in accordance with its functions under section 31, the provisions of Part II, its duty under section 32, and any regulations.

The following provisions of section 76 are also relevant:

- (1) A territorial authority may, for the purpose of –
  - (a) Carrying out its functions under this Act; and
  - (b) Achieving the objectives and policies of the plan, - include rules in a district plan.
- ...
- (3) In making a rule, the territorial authority shall have regard to the actual or potential effect on the environment of activities, including, in particular, any adverse effect.

In achieving the purpose of the Act, the council must carry out an evaluation under section 32 of the RMA before publicly notifying a district plan or a plan change. Section 32(3) and (4) state as follows:

- (3) An evaluation must examine –
  - (a) the extent to which each objective is the most appropriate way to achieve the purpose of the Act; and
  - (b) whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives
- (4) For the purposes of this examination, an evaluation must take into account –
  - (a) the benefits and costs of policies, rules, or other methods; and
  - (b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.

The statutory requirements, including section 32 matters, are assessed below under the following headings:

- The extent to which each objective is the most appropriate way to achieve the purpose of the Act
- Whether the policies, rules, or other methods are the most appropriate for achieving the objectives
  - Having regard to their efficiency and effectiveness
  - Taking into account the benefits and costs of policies, rules, or other methods
  - Taking into account the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.

## **4.1 The extent to which each objective is the most appropriate way to achieve the purpose of the Act**

### **4.1.1 The purpose of the Act**

Section 5 states that the purpose of the Act is ‘to promote the sustainable management of natural and physical resources’. Section 5(2) states:

- (2) In this Act, “sustainable management” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-
  - (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
  - (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
  - (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

Environment is defined in Section 2 of the RMA as including:

- (a) Ecosystems and their constituent parts, including people and communities; and
- (b) All natural and physical resources; and
- (c) Amenity values; and

- (d) The social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters:

Section 6 of the RMA identifies matters of national importance, which need to be recognised and provided for in achieving the purpose of the Act. The matters of particular relevance to the proposed objectives are identified below:

Clause		
(a)	The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development	✓
(b)	The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development	✓
(c)	The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna	✓
(d)	The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers	✓
(e)	The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga	
(f)	The protection of historic heritage from inappropriate subdivision, use, and development	

Section 7 deals with ‘other matters’ which, in achieving the purpose of this Act, persons exercising functions and powers under the Act shall have particular regard to. The matters of are of particular relevance to the proposed objectives are identified below:

Clause		
(a)	Kaitiakitanga	
(aa)	The ethic of stewardship	✓
(b)	The efficient use and development of natural and physical resources	✓
(ba)	The efficiency of the end use of energy	
(c)	The maintenance and enhancement of amenity values	✓
(d)	Intrinsic value of ecosystems	✓
(f)	Maintenance and enhancement of the quality of the environment	✓
(g)	Any finite characteristics of natural and physical resources	✓
(h)	The protection of the habitat of trout and salmon	
(i)	The effects of climate change	✓
(j)	The benefits to be derived from the use and development of renewable energy	

Section 8 provides that in achieving the purpose of the Act, all persons exercising functions and powers under it, in relation to managing the use, development and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti O Waitangi).

#### 4.1.2 Appropriateness in achieving the purpose of the Act

##### The objectives are:

- To avoid the effects of natural hazards on the environment, including life, property and infrastructure as far as is practicable.

- To avoid the creation or exacerbation of the risks of natural hazards by human activities as far as is practicable.
- To protect existing physical resources and natural defences with moderate the effects of natural hazards

The first objective is consistent with section 5(2) of the Act, because avoiding the effects of natural hazards on the environments will protect natural and physical resources. Because of their nature, many natural hazards cannot be completely avoided, but hazards such as coastal erosion, flooding and land instability can be minimised by preventing or limiting development in such areas. The effects of natural hazard events can be significant, including effects on property, health and safety. Avoiding the effects of natural hazards on life, property and infrastructure will allow people and communities to provide for their social and economic wellbeing and their health and safety.

Avoiding the creation or exacerbation of the risks of natural hazards (the second objective) is also consistent with the section 5(2) requirement to manage the use, development and protection of natural and physical resources to enable communities to provide for the wellbeing and safety. It is more efficient to design development so as not to exacerbate or create hazards, as opposed to paying for the costs of the effects of the hazard at a later date through engineered structures or by removing affected buildings from the area.

The third objective is consistent with Section 6 of the RMA because the preservation of the natural character of the coastal environment, wetlands, lakes and rivers and the protection of them from inappropriate subdivision, use and development will serve to protect natural defences, which will moderate the effects of natural hazards. For example, sand dunes can protect coastal land from storm tides and the effects of tsunamis. Mangroves can also prevent storm damage during sea surges arising from tsunamis.

It is more appropriate to encourage the retention of natural defences than to build new ones which may not be as effective or which may have adverse visual and environmental effects. The development of these objectives into policies and rules will ensure the efficient use and development of natural and physical resources, will protect the intrinsic values of ecosystems and ensure the maintenance and enhancement of the qualities of the environment and of amenity values. Such protection will also recognise the finite characteristics of natural and physical resources and the possible effects of climate change.

Whilst the Building Act will prevent building on land subject to natural hazards, the Building Act cannot protect natural features, which mitigate the effects of natural hazards. Objectives, policies and rules are therefore required to protect existing physical resources and natural defences which moderate the effects of natural hazards.

## **4.2 Whether the policies, rules, or other methods are the most appropriate for achieving the objectives**

Policies for the first objective are:

1. By adopting a precautionary approach when there is a lack of information about natural hazards with a high return period (such as a 1 in 10 year or 1 in 50 year flood);
2. By preventing new development and activities in high risk areas where the effects of the natural hazard cannot be adequately avoided or mitigated;

3. By taking into account the potential effects of tsunamis, coastal erosion and deposition processes and the possibility of sea level rise when planning for development near the coast.

Policies for the second objective are:

1. By controlling earthworks, and vegetation clearance (including riparian vegetation protection), to avoid or mitigate the effect of activities which may exacerbate the risk of natural hazards;
2. By protecting hazard prone areas from activities which will accelerate erosion, inundation, and other natural hazards;
3. By limiting the extent of impervious surfaces to decrease the peaks in stormwater flow occurring during high rainfall;
4. By requiring development and activities to adapt to or retreat from areas likely to be severely affected by natural hazards;

Policies for the third objective are:

1. By protecting natural defences (e.g. dunes) which provide protection from natural hazard events;
2. By avoiding the use of hard engineering structures (such as sea walls and groynes) as far as is practicable, especially those within the coastal environment (above mean high water springs) which adversely affect public access to coastal areas or landscape values;

The proposed policies are the most appropriate means of achieving the objectives because they emphasise a precautionary approach in the absence of accurate information, prevent development and activities in high risk natural hazard areas, where the effects of the hazard cannot be adequately avoided or mitigated, and protects hazard prone areas from activities which will accelerate erosion, inundation and other natural hazards. The policies promote the protection of vegetation in hazard prone areas and the protection of natural defences, which prevent or minimise natural hazard events. In coastal areas, the protection of natural defences such as dunes are promoted to avoid the use of hard engineering structures such as seawalls and groynes, which may adversely affect public access to coastal areas and landscape values. The policies recognise that development and activities could adapt to or retreat from areas likely to be severely affected by natural hazards in order to avoid the risks of natural hazards.

The planning maps will show:

- soil warning areas where the soil is suspected or known to be weak or unstable, because of its inherent nature or because it has been an area of fill or possibly a refuse tip;
- soil register areas on sites where soil reports have been provided to council as part of a building consent application because of concerns regarding the site e.g. slope instability, weak ground etc which may affect the construction of the building;
- erosion risk zones on Kennedy Point and Onetangi Beach where coastal erosion is likely to affect properties in these areas;
- flood prone areas (type A and type B). Type A areas are those areas predicted or expected by Council to flood in a 1% annual exceedance probability (AEP) storm (a 1 in 100 year storm). Type B areas are those areas that may be at risk of flooding in up to a 1% AEP storm. Type B areas are not as detailed or accurate as type A areas.



*The proposed rules will achieve the objectives by indicating the existence or potential existence of natural hazards and restricting development in those areas. Land owners can choose whether to avoid locating buildings or activities in those areas, undertake research to determine the risk of development in those areas identified by the rules and/or apply for a consent to undertake activities in those area identified by the rules.*

The proposed rules will restrict development (without a resource consent) in areas identified as a natural hazard area on the planning maps or in the absence of more accurate information on the planning maps will restrict development:

- at an elevation less than 3 metres above mean high water springs if within 20 metres of mean high water springs or at an elevation less than 2 metres above mean high water springs if more than 20 metres from mean high water springs (to guard against coastal erosion processes, storm surges, climate change and tsunamis etc);
- at an elevation of less than 1 metre above the edge of any adjacent permanent stream, river, wetland or lake (to guard against flooding);
- within a horizontal distance of 20 metres for the top of any coastal cliff with a slope angle steeper than 1 in 3 ( $18^{\circ}$ ) (to guard against coastal erosion processes which erode the cliff); and
- on slopes with an angle greater than or equal to 1 in 2 ( $26^{\circ}$ ).

A consent will not be required where a report from a suitably qualified engineer indicates that the land and the proposed activity on that land, will not make that land:

- subject to flooding in 1 in 100 year storm; or
- subject to coastal erosion over a 50 year time period; or
- unstable, weak or subject to erosion.

In the absence of accurate information on the effects of natural hazards on the Hauraki Gulf islands these proposed rules are consistent with the objectives to:

- avoid the effects of natural hazards on the environment, including life, property and infrastructure as far as is practicable;
- avoid the creation or exacerbation of the risks of natural hazards by human activities as far as is practicable;
- protect existing physical resources and natural defences with moderate the effects of natural hazards.

Rules that prevent the removal of vegetation on steep slopes; the modification, alteration or removal of sand dunes and vegetation on sand dunes; the removal of riparian vegetation next to rivers, streams and wetland all contribute to:

- the objective to avoid the creation or exacerbation of the risks of natural hazards by human activities as far as is practicable;
- the objective to protect existing natural resources and natural defences which moderate the effects of natural hazards.

Because of the lack of accurate information on many of the natural hazards likely to affect the Hauraki Gulf Islands, and the need to adopt a precautionary approach, thresholds between permitted activities and activities requiring a resource consent had to be chosen for high hazard areas i.e. areas likely to be at high risk from flooding, coastal erosion and slope instability. The resource consent process will allow site specific circumstances to be dealt with on the basis of more accurate site-specific information provided as part of the consent

application. When new hazard information is obtained by council amendments to the planning maps will be made to incorporate this information.

The following options are the main alternatives, which the council has considered as a means of achieving the objectives

#### 4.2.1 Option 1

Do nothing - have no provision in the district plan to address natural hazards - Rely only on:

- the provisions of sections 71-74 of the Building Act 2004;
- Land Information Memorandums issued under section 44A of the Local Government Official Information and Meetings Act 1987;
- Project Information Memorandums (PIMs) issued under section 34 of the Building Act 2004;
- Hazard information supplied by the Auckland Regional Council.

Benefits	Costs
<p>One set of rules (the requirements of the Building Act) for all developments.</p> <p>Building Act adequately addresses many natural hazards such as flooding, land subsidence, earthquake and wind resistance</p>	<p>The Building Act does not prevent land development where no building consent is required e.g. development of golf courses, access ways, fences, minor earthworks, capital improvements etc in hazard prone areas. Building Act does not prevent activities such as the storage of hazardous substances in hazard prone areas.</p> <p>Building Act cannot prevent removal of vegetation, modification of sand dunes or other activities which would remove natural defences to flooding, erosion, land slippage etc</p>
<p>Developers have greater flexibility for development</p> <p>Avoids the need to apply for and the costs of a resource consent</p>	<p>May allow inappropriate development in areas where there is insufficient information to identify the area as being subject to natural hazards.</p>
	<p>The precautionary principle standards imposed in the district plan are subject to public scrutiny and submission and developers can provide independent assessment of hazard as part of consent application.</p>
	<p>Structures erected on public land in response to Building Act requirements may become a liability to council.</p>
	<p>Reinforces view that hazards such as erosion are an anomaly that has to be corrected or a severe threat that has to be combated, rather</p>

	than a natural process.
LIMs and PIMs readily available as part of council processes.  Land Information Memorandums provide information <u>known</u> to Council on any special feature or characteristic of the land concerned including any natural hazards on that land, but which is not apparent from the district plan	PIMs are only required to identify potential natural hazards likely to be relevant to the design and construction or alteration of a building that are known to the territorial authority, and are not apparent from the district plan. PIMs are not required for activities that do not require a building consent.
Hazard information provided by the Auckland Regional Council (ARC) easy to access	ARC information at low resolution and at a scale that the applicability of the information to any particular site is questionable.

### **The risk of acting or not acting**

Whilst sections 71-74 of the Building Act deals with the construction or major alteration of buildings subject to or likely to be subject to natural hazards, and Project Information Memorandum issued under section 34 of the same Act adequately deal with natural hazards known to a territorial authority, they cannot prevent activities in natural hazard areas that do not require a building consent. The risk of acting on this option is the possibility of activities and structures not requiring a building consent being located in hazard prone areas or potentially hazard prone areas and being at risk of that hazard at a later time. Some such activities may increase the risk of a natural hazard occurring, or may if permitted expect at some time in the future protection from a natural hazard that existed at the time when the activity was established.

Whilst Land Information Memorandums (LIMs) also provide information known to Council on any special feature or characteristic of the land concerned, including any natural hazards on that land, but which is not apparent from the district plan, there is no compulsion for a property owner to obtain a LIM before undertaking an activity on that land.

The hazard information available from the Auckland Regional Council is of low resolution and at a scale that the risk of acting on this information and determining how this information applies to a particular site and how it is likely to affect an activity or development on that site is problematic.

Another risk of acting on this option is the uncontrolled modification or removal of natural defences to natural hazards, for example, the removal of vegetation on steep slopes may make the slope more prone to erosion and slippage, the removal or modification of sand dunes may increase the risk of flooding and erosion during storms.

The risk of not acting on this option is that there will be overlap between the requirements of the Building Act and the proposed district plan provisions.

#### **4.2.2 Option 2**

Education: This relates to the issuing of pamphlets, advocacy to developers of sites

<b>Benefits</b>	<b>Costs</b>
Lesser cost to Council, public and developers than developing district plan rules	Does not give certainty/security to the seller or buyer of any property, hence there could be liability issues for Council if a natural hazard event occurs on land that Council knew or expected to be vulnerable to natural hazards.
	Information may have to be complex if more than one hazard present which many people may find difficult to interpret especially the importance and/or relevance of the information available for their particular site – natural tendency to only take a short term view in relationship to risk.
	Does not exempt Council from the requirements of the Building Act, LIMs and PIMs.
	Unlikely to protect vegetation or sand dunes that may mitigate the effects of a natural hazard event.
	May be a lack of acceptance of the importance of the information if given in an informal manner. May raise more liability issues because of various interpretations of the information.

### **The risk of acting or not acting**

The risk of acting on this option is that property owners will either not read the information, will not refer to the information when it is needed, will ignore the information, will pass the risk on to future owners or deny the possible risk suggested by the information. Another risk of acting is how the information is delivered and the timing on when the information is delivered, e.g. will it be delivered too early and forgotten or delivered too late to avoid incorrect decisions being made.

The risk of not acting (not providing information) is the tendency for the public to believe that the environment is relatively stable and they are unlikely to be affected by a natural hazard event even if they are in such places as near a stream, by the coast or on steep hillside. Another risk of not acting is that communities are not given the necessary information they need to make informed choices as to where they live and the level of risk they are prepared to accept. Another risk of not acting and not providing information is that it would potentially fail to meet council's civil defence obligations to reduce the risk to communities of natural hazard events.

### **4.2.3 Option 3**

Option 3: Make all development in hazard prone areas a non-complying activity.

Benefits	Costs
Would allow Council to assess every development in a hazard prone area	High cost to land owners or property developers to get a consent for a non-complying activity.
Less potential liability to council than allowing some development in hazard prone activities as a permitted activity	In the absence of comprehensive information on hazards, it is difficult to accurately determine how extensive a hazard prone area is for many hazards – making all development in hazard prone areas a non-complying activity may place undue restrictions on activities that could avoid, remedy or mitigate the potential natural hazards present.

### **The risk of acting or not acting**

The risk of acting on this option is that the status of non-complying suggests that no activities can safely be undertaken in hazard prone areas. This would be a misleading suggestion. Activities or developments that can adapt to or retreat from natural hazards might be perfectly acceptable. This option also assumes that all hazard prone areas are accurately determined, unfortunately this is not the case.

The risk on not acting on this option is that the effects of some natural hazard events may be underestimated and inappropriate development occurs in hazard prone areas.

## **4.2.4 Option 4**

Option 4: Use of proposed objectives policies and rules.

Benefits	Costs
Provides certainty to users of the plan on what Council believes to be a natural hazard area	In the absence of accurate information on planning maps an applicant may have to provide proof of risk of natural hazard occurring if they wish to proceed with development within areas which rules have determined to be likely to be hazard prone –e.g. a proposed development within 20 metres of mean high water springs at an elevation less than 3 metres above mean high water springs.
Provides a more comprehensive or equitable control of activities that could occur in areas subject to natural hazards than other options.	
Protects vegetation and sand dunes that may prevent a natural hazard from occurring or mitigate the effects of a natural hazard if it does occur.	In the absence of accurate information it may protect vegetation or sand dunes in areas where a natural hazard event is not likely to occur.

Benefits	Costs
Promotes the protection of existing natural coastal defences so that hard engineering solutions are less likely to be used in coastal areas	Hard engineering solutions e.g. sea walls may be needed when existing natural coastal defences have been removed or severely modified, or when inappropriate development has been allowed near coastal hazard areas.

### **The risk of acting or not acting**

The Council is required to consider the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods. Apart from a few areas, at the present time, there is little accurate information on the possible extent or location of most natural hazards on the Hauraki Gulf Islands.

The Auckland Regional Council has information of a regional scale on natural hazards in the Hauraki Gulf Islands but this information has been prepared at a broad scale e.g. slope instability is at 1:250,000. Given this lack of accurate information, the risk of not acting is ignoring the potential adverse effects that natural hazards may have on people, property, infrastructure and the environment. The risk of not acting also potentially places greater demands on response agencies including civil defence if development is not limited in area likely to be affected by natural hazards.

The risk of acting given the limited information available on the likely effects of natural hazards may be either:

- the inclusion by the rules of areas that may not be prone to a natural hazard events and the possible consequential costs to the land owner or developer to prove that a building or an activity can be safely established in that area;
- or conversely an underestimate of the extent of the area affected by a natural hazard event and the possible consequences on a building or activity in that area if a natural hazard event occurs.

In this case the risks of not acting are significant and outweigh the risks of acting.

### **4.2.4 Conclusion**

Option 4 is considered to be the most appropriate to achieve the objectives as it can properly control developments and activities that do not require a building consent in areas where natural hazards are located or are likely to occur. Option 4 also prevents activities that may create hazards (e.g. the removal of vegetation on steep slopes) or the removal or modification of barriers such as sand dunes that may prevent or mitigate natural hazard events. Because option 4 makes activities in hazard prone area either a restricted discretionary or discretionary activity it recognises that there may be circumstances where buildings or activities might be able to be safely located in hazard prone areas.

#### **4.3 Whether the proposed rules assist the council to carry out its function of control of actual or potential effects of the use, development or protection of land**

The proposed rules will help to avoid or mitigate natural hazards and avoid, remedy or mitigate the adverse effect of activities on the environment by restricting activities in areas prone to natural hazard events. These rules will work in conjunction with section 71 of the Building Act which requires a building consent authority (such as Auckland City Council) to refuse (unless certain exemptions apply) to grant a building consent for construction of a building, or for major alterations to a building:

- if the land on which the building work is to be carried out is subject to or likely to be subject to 1 or more natural hazards; or
- if the building work is likely to accelerate, worsen or result in a natural hazard on that land or on any other property.

The rules also protect natural features so that they are able to prevent or lessen the impact of natural hazards events when they occur.

Preventing inappropriate subdivision, use and development in low lying coastal environments and at an elevation close to wetlands, lakes, rivers and wetlands will minimise the effects of natural hazards in these hazard prone areas as well as preserving their natural character. Because many outstanding natural features and landscapes have been formed or modified by natural hazard processes, such as erosion, volcanic and geothermal activity, the use of rules to minimise development in hazard prone areas will serve also to protect these outstanding natural features and landscapes.

The protection of vegetation on coastal cliffs, steep slopes and next to streams and wetlands to prevent erosion, slippage or flooding, may also serve to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Subdivision rules that require esplanade reserves or yard rules in part 10c, which require set back distances from the coastline, wetlands, lakes and rivers as buffer protection areas for natural hazards, will help to maintain and enhance public access, to and along the coastal marine area and water systems.

In a similar manner, the protection of coastal areas and areas of riparian vegetation, preventing the removal of vegetation from erosion prone areas and preventing development in hazard prone areas, will ensure the efficient use and development of natural and physical resources; will protect the intrinsic values of ecosystems and ensure the maintenance and enhancement of the qualities of the environment and of amenity values. Such protection will also recognise the finite characteristics of natural and physical resources and the possible effects of climate change.

## **5.0 National planning documents**

Section 75(3) of the RMA states:

- (3) A district plan must give effect to –
  - (a) any national policy statement; and
  - (b) and any New Zealand coastal policy statement; and

...

## 5.1 Coastal Policy Statement

The New Zealand Coastal Policy Statement 1994 states that regard should be had to general principles including:

- The coastal environment is particularly susceptible to the effects of natural hazards;
- It is important to maintain biological and physical processes in the coastal environment in as natural a condition as possible, and to recognise their dynamic, complex and interdependent nature.
- The ability to manage activities in the coastal environment sustainably is hindered by the lack of understanding about coastal processes and the effects of activities. Therefore, an approach, which is precautionary but responsive to increased knowledge, is required for coastal management.

Section 3.4 of the coastal policy statement outlines 6 policies under the heading of “recognition of natural hazards and provisions for avoiding or mitigating their effects” – these are attached as **appendix B**.

The proposed objectives, policies and rules for natural hazards give effect to the policies in the NZ Coastal Policy Statement attached as **appendix B**.

## 5.2 Hauraki Gulf Marine Park Act 2000

Section 9(3) of the Hauraki Gulf Marine Park Act 2000, requires the council to ensure that:

... any part of a district plan that applies to the Hauraki Gulf, its islands, and catchments, does not conflict with sections 7 and 8 of this Act.

Section 7 recognises the national significance of the Hauraki Gulf and Section 8 provides management direction for the Gulf. Section 10 of the Act requires that sections 7 and 8 be treated as a New Zealand coastal policy statement under the RMA. Sections 7 and 8 are attached as appendix A.

The proposed objectives, policies and rules for natural hazards give effect to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 by protecting economic well-being of people and communities, and by protecting and enhancing the natural and physical resources of the Hauraki Gulf, its islands and catchments.

## 6.0 Regional planning documents

Section 75(3) and (4) of the RMA state:

- (3) A district plan must give effect to –
  - ...
  - (c) any regional policy statement.
- (4) A district plan must not be inconsistent with –
  - ...
  - (c) a regional plan for any matter specified in section 30(1).

See **appendix C** for the relevant provisions from regional planning documents. The proposed objectives, policies and rules for natural hazards are not inconsistent with the issues



and policies in Chapter 7 (Coastal Environment) and Chapter 11 (Natural Hazards) of Regional Policy Statement as outlined in **appendix C**. The proposed objectives, policies and rules are not inconsistent with sections 10, 12 and 21 of the Auckland Regional Plan: Coastal also in **appendix C**.

## **7.0 Other documents**

The Auckland Local Authority Hazard Liaison Group representing the regional, district and city councils of the Auckland region has produced Hazard Guidelines. The first guideline “Hazard Information Management” identifies sources of hazard information and looks at how this information is collected, sorted, recorded and stored within the Auckland setting. The second guideline “Hazard Identification and Risk Assessment” provides guidance on establishing the context of risk analysis, identifying hazards and risks, and carrying out risk analysis and risk reduction. The third guideline “Risk Treatment and Monitoring for Hazards” looks at selecting appropriate risk treatment options that will minimise the risk to the community from hazards.

## **8.0 Procedures for monitoring**

The council will monitor the effectiveness of the proposed provisions as a means of achieving the objectives and policies by:

- monitoring resource consents including the number of applications granted consent, compliance with consent conditions, and the effectiveness of those conditions;
- monitoring complaints about natural hazards and the remediation work undertaken;
- undertaking surveys to establish the extent of areas likely to be affected by natural hazard events;
- updating the planning maps when more information on natural hazards is obtained.

## **9.0 Conclusions**

The plan provisions seek to avoid or mitigate natural hazards and avoid the effects of natural hazards on the environment, including life, property and infrastructure as far as practicable. It also seeks to avoid the creation or exacerbation of the risks of natural hazards by human activities. The plan promotes the retention of natural defences (e.g. sand dunes) which provide protection from natural hazards and controls the use of hard engineering structures which may form a defence against flooding or erosion. There are significant information gaps for most natural hazards in the islands and as a consequence the proposed rules take a precautionary approach to the location of buildings or activities in areas that may be prone to natural hazards. The use of district plan objectives, policies and rules has been determined to be the most effective way of controlling development in areas likely to be affected by natural hazards.

## Appendix A

### Hauraki Gulf Marine Park Act 2000

Section 7 states as follows:

#### **Recognition of national significance of Hauraki Gulf**

- (1) The interrelationship between the Hauraki Gulf, its islands, and catchments and the ability of that interrelationship to sustain the life-supporting capacity of the environment of the Hauraki Gulf and its islands are matters of national significance.
- (2) The life-supporting capacity of the environment of the Gulf and its islands includes the capacity—
  - (a) to provide for—
    - (i) the historic, traditional, cultural, and spiritual relationship of the tangata whenua of the Gulf with the Gulf and its islands; and
    - (ii) the social, economic, recreational, and cultural well-being of people and communities:
  - (b) to use the resources of the Gulf by the people and communities of the Gulf and New Zealand for economic activities and recreation:
  - (c) to maintain the soil, air, water, and ecosystems of the Gulf

Section 8 states as follows:

#### **Management of Hauraki Gulf**

To recognise the national significance of the Hauraki Gulf, its islands, and catchments, the objectives of the management of the Hauraki Gulf, its islands, and catchments are—

- (a) the protection and, where appropriate, the enhancement of the life-supporting capacity of the environment of the Hauraki Gulf, its islands, and catchments:
- (b) the protection and, where appropriate, the enhancement of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments:
- (c) the protection and, where appropriate, the enhancement of those natural, historic, and physical resources (including kaimoana) of the Hauraki Gulf, its islands, and catchments with which tangata whenua have an historic, traditional, cultural, and spiritual relationship:
- (d) the protection of the cultural and historic associations of people and communities in and around the Hauraki Gulf with its natural, historic, and physical resources:
- (e) the maintenance and, where appropriate, the enhancement of the contribution of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments to the social and economic well-being of the people and communities of the Hauraki Gulf and New Zealand:
- (f) the maintenance and, where appropriate, the enhancement of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments, which contribute to the recreation and enjoyment of the Hauraki Gulf for the people and communities of the Hauraki Gulf and New Zealand.

## **Appendix B: National Planning Documents**

### **New Zealand Coastal Policy Statement**

**Policy 3.3.1 states:**

Because there is a relative lack of understanding about coastal processes and the effects of activities on coastal processes, a precautionary approach should be adopted towards proposed activities, particularly where effects are as yet unknown or little understood.

**Policy 3.4.1 states:**

Local authority policy statement and plans should identify area in the coastal environment where natural hazards exist.

**Policy 3.4.2 states:**

Policy statements and plans should recognise the possibility of a rise in sea level, and should identify areas, which would as a consequence be subjects to erosion or inundation. Natural systems, which are a natural defence to erosion and/or inundation, should be identified and their integrity protected.

**Policy 3.4.3 states:**

The ability of natural features such as beaches, sand dunes, mangroves, wetlands and barrier islands, to protect subdivision, use or development should be recognised and maintained, and where appropriate, steps should be required to enhance that ability.

**Policy 3.4.4 states:**

In relation to future subdivision, use and development, policy statements ad plans should recognise that some natural features may migrate inland as the result dynamic coastal processes (including sea level rise).

**Policy 3.4.5 states:**

New subdivision, use and development should be located and designed that the need for hazard protection works is avoided.

**Policy 3.4.6 states:**

Where existing subdivision, use or development is threatened by coastal hazard, coastal protection works should be permitted on where they are the best practicable option for the future. The abandonment or relocation of existing structures should be considered among the options. Where coastal protection works are the best practicable option, they should be located and designed so as to avoid adverse effects to the extent practicable.

## **Appendix C: Relevant provisions from regional planning documents**

### **Auckland Regional Policy Statement**

#### **Chapter 7: Coastal Environment**

In issue 7.2.2, it notes that inappropriate subdivision, use and development can potentially result in the loss of vegetation, coastal ecosystems and natural features and increase and exacerbate coastal erosion. Issue 7.2.5 notes that “the coastal environment, particularly the interface between the land and the water (the active coastal zone) is one of dynamic change with occasional extreme events and periods of flooding, erosion, inundation and other hazards. The effect that activities have on these processes, and the effects process have on activities, is often not well understood and at times cannot be determined with much certainty. Consequently, when significant adverse effects may potentially arise it is necessary that a precautionary approach be taken when managing the subdivision, use, development and protection of the coastal environment to reduce the risk of significant environmental damage arising from uncertainty or lack of knowledge.”

Policy 7.4.10.2 (subdivision, use and development) states that “in assessing the appropriateness of subdivision, use and development in the coastal environment particular regard shall be had to the following matters:

(x) activities are designed and located to avoid the need for hazard protection works.”

Policy 7.4.10.3 notes that “a precautionary approach shall be taken by local authorities when providing for and assessing subdivision, use and development in the coastal environment where potentially significant adverse effects may arise.”

Policy 7.4.10.5 states “where existing subdivision, use and development is threatened 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 should be considered among the options. Where coastal protection works are the best practicable option, they should be located and designed so as to avoid or minimise adverse environment effects.”

Policy 7.4.10.5 states that “where existing subdivision, use and development is threatened by 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 should be considered among the options. Where coastal protection works are the best practicable option they should be located and designed so as to avoid or minimise adverse environmental effects.”

Policy 7.4.10.6 also states that “in determining the appropriate form and location of subdivision, use and development, it shall be recognised that some natural features may migrate inland as a result of dynamic coastal processes, including sea level rise.

#### **Chapter 11: Natural hazards**

Note: Proposed Change 10 (further submissions to which closed on 28 July 2006) amends Chapter 11 to provide clarity surrounding roles and responsibilities with respect to natural hazard management and addresses a more comprehensive range of natural hazards and hazard management responses.

Chapter 11 (as amended) notes as the issue that “natural hazards pose a risk to people, property, infrastructure and the environment in the Auckland region.” Policy 11.4.1.2 notes that before provision is made enabling significant development or redevelopment of land, including intensification of land use, any natural hazards, particularly flooding, land instability and coastal hazards, and measures to avoid or mitigate their adverse effects shall be identified.” Policy 11.4.1.5 notes that “where development or use exists within areas susceptible to natural hazards, construction of mitigation works shall be permitted 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.”

Policy 11.4.1.8 states that “in the coastal environment, new subdivision, use or development should be located and designed, so that the need for hazard protection measures is avoided.”

## **Auckland Regional Plan: Coastal**

### **Section 10: General (Objectives and policies generally applying to all use and development)**

Section 10 of the Regional Plan: Coastal notes in the introduction that where there is a relative lack of understanding of the effects of subdivision, use and development on parts of the coastal environment, and where significant adverse effects may potentially arise, a precautionary approach should be taken in assessing any proposal for subdivision, use or development. This it suggests will reduce the risk of significant environmental damage arising from the proposal. Hence the objective in chapter 10 is to provide for appropriate used and development in the coastal marine area, and to protect the coastal marine area from inappropriate subdivision, use and development.

### **Section 12: Structures**

Policy 12.4.10(c) notes that any proposal for coastal protection structures shall demonstrate that the proposed structure is the most appropriate method for remedying or mitigating a natural coastal hazard having regard to the entire area affected or potentially affected by the hazard, and alternative methods including the use of non-structural solutions.

Section 12.6.2 (other methods) suggests that district plans should include appropriate methods which recognise the cross-boundary affects of structures and ensure that provision is made for only appropriate structures in the coastal environment.

### **Section 21: Natural Coastal Hazards**

Policy 21.4.1 notes that “new subdivision should be located and designed to avoid interference with natural coastal processes, including those natural coastal features that have the tendency to change or migrate inland as a result of climate and sea-level changes, so that the need for coastal protection measures is avoided.”

Policy 21.4.2 states that “where existing subdivision, use and development in the coastal environment is adversely affected by coastal hazards, including mean sea level rise, further subdivision, use and development that exacerbates the coastal hazard, or creates a new coastal hazard, should be avoided.”

Policy 21.4.3 proposes that “natural features such as beaches (including sand dunes and longshore bars), mangroves, and wetlands which may buffer subdivision, use and development from coastal hazard, shall be protected.”

Policy 21.4.4 states that “coastal protection measures should generally use non structural methods, including planting and beach nourishment, rather than structural methods, such as seawalls, which artificially stabilise the coastline, unless it can be demonstrated that a structural solution is the best practicable method for remedying or mitigating the hazard.”