

Matata Debris Hazard Management

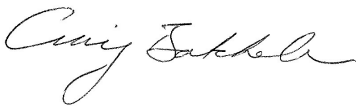

Potential Scope of District Plan Options
Prepared for Whakatane District Council

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Boffa Miskell

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1.0 Introduction

Potential engineering and planning options have been assessed for debris hazard risk management at Matata.

Planning options have been identified as preferable to engineering options due to cost and feasibility¹.

The planning options are described as:

1. Purchase properties and rezone as reserve
2. Rezone for Landslide Project risk zones
3. Information on LIM and s72 notices for new buildings

This report develops alternative provisions for Option 2 (hazard risk zones) for potential inclusion in the proposed Whakatane District Plan.

The report also describes Option 3. This option is referred to as the "Information Based Approach".

2.0 Background

2.1 Study Area

The study area is the Matata Township and coastal area to the west as shown on GNS Plan "Matata Debris Flow Mapping"².

2.2 Debris Hazards

The background to the debris hazard event at Matata in 2005 and the subsequent Council initiatives to manage the risk are described elsewhere³.

The nature of the debris hazard at Matata is described as follows:

"Depending upon the precise location and orientation of intense rainfall events in the vicinity of Matata, debris flows could be triggered from a number of other catchments and coastal hill slopes in addition to those that were triggered during the May 2005 debris flow event. The Institute of Geological and Nuclear Sciences (GNS) has estimated the

¹ Section 2 Matata Debris Flow Project – The Way Forward - Domain Environmental 3 December 2012

² Matata Debris Flow Mapping Geomorphic Extent of past debris flows, GNS Science, October 2012

³ Section 1 Matata Debris Flow Project – The Way Forward - Domain Environmental 3 December 2012

land areas in and around Matata township that (i) have been affected by debris flows in the geological past (most of Matata is built on debris flow fans), (ii) were affected by debris flows in May 2005, and (iii) could conceivably be affected by debris flows in the future...".

The nature of development that may be affected by debris hazard events at Matata varies:

- Ohinekoao Stream Fan head (Matata Straight vicinity) – State Highway, Railway, Recreation Reserve and Camping Ground, and rural land;
- Awatarariki Stream Fan head (Clem Elliot Drive vicinity) - State Highway, Railway, existing houses, undeveloped residential sections;
- Waimea Stream Fan head - State Highway, Railway, existing houses, undeveloped residential land and sections
- Waitepuru Stream Fan head (Manawahe Road vicinity) – State Highway, Railway, existing houses, undeveloped residential sections; schools, rural land.

3.0 Legislation

3.1 Resource Management Act 1991

3.1.1 General Provisions

Section 3 sets out the meaning of "effect":

"In this Act, unless the context otherwise requires, the term effect includes—

- (a) any positive or adverse effect; and*
- (b) any temporary or permanent effect; and*
- (c) any past, present, or future effect; and*
- (d) any cumulative effect which arises over time or in combination with other effects—regardless of the scale, intensity, duration, or frequency of the effect, and also includes—*
- (e) any potential effect of high probability; and*
- (f) any potential effect of low probability which has a high potential impact"*

Debris hazards effects could fall within the scope of a potential effect of low probability which has a high potential impact.

Section 31 includes the following function for territorial authorities:

"...the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of...the avoidance or mitigation of natural hazards".

Section 35 imposes a general duty for local authorities to gather information and undertake monitoring. This applies to natural hazards.

Section 108 allows resource consents to be granted subject to conditions, including conditions relating to natural hazards.”

3.1.2 Subdivision of Hazard Prone Land

Under Section 106, subdivision consent can be refused, or granted subject to conditions, if land is likely to be subject to natural hazards:

“A consent authority may refuse to grant a subdivision consent, or may grant a subdivision consent subject to conditions, if it considers that—

*(a) the land in respect of which a consent is sought, or any structure on the land, **is or is likely to be subject to material damage by erosion, falling debris, subsidence, slippage, or inundation from any source;** or*

(b) any subsequent use that is likely to be made of the land is likely to accelerate, worsen, or result in material damage to the land, other land, or structure by erosion, falling debris, subsidence, slippage, or inundation from any source; or

...

The phrase “is or is likely to be subject to” requires the exercise of judgement that would take into account the degree of risk (i.e. probability and impact) in any particular instance.

3.1.3 Existing Use Rights

Under Section 10, existing use rights apply to any activity that contravenes a rule in a district plan if the use was lawfully established and the effects of the use are the same or similar in character, intensity, and scale to that existing before the rule came into effect.

This means that any new hazard controls in a District Plan can not be applied retrospectively.

Existing use rights would not allow the construction of a dwelling on a vacant residential site.

Under Section 30, a Regional Council can control the use of land for the purpose of avoidance or mitigation of natural hazards under Regional Plan rule. Existing use rights do not apply to land uses affected by a Regional Plan. In this regard, the proposed Regional Policy Statement includes the following “Explanation”⁴:

“Natural hazards generating intolerable risk to existing uses may be able to be mitigated. If practical, non-structural mitigation to reduce risk to a tolerable level is not possible, removing the use or development from the location that is threatened may be necessary to avoid an intolerable risk. Although section 10 of the Act provides that certain existing uses of land may continue even though such a use may contravene a rule in a district plan, that section does not apply to any use of land that is controlled under section 30(1)(c) (regional control of certain land uses). Consequently, it is possible for a rule in a regional plan to require an existing use in a hazardous area to cease and be removed.”

The ability to use this method has not been tested. It is not clear how this would be implemented as there is no policy to take this approach, only an “explanation”. If used, this method would have significant consequences for land owners given that compensation is not payable for controls on land. However, it is noted that Section 85 of the RMA creates safeguards for land owners against plan provisions that render land incapable of reasonable use (See below). This may limit the ability apply this method.

⁴ Explanation to Policy NH 4B Avoiding intolerable risk from natural hazards

3.1.4 Legal Effect of Rules

Under Section 86B, rules have no legal effect until decisions on submissions have been made and publicly notified. The current plan rules apply until that time.

Hazards rules are not included in the matters where immediate legal effect can be given on public notification of the plan.

Also, any owner can seek a "Certificate of Compliance" (CoC) to secure permitted activity rights under the operative District Plan. A CoC has effect for 5 years.

3.1.5 Compensation not payable in respect of controls on land

Under section 85 an interest in land shall be deemed "not to be taken or injuriously affected by reason of any provision in a plan". In other words, the impact of planning controls is not compensatable.

However, a provision or proposed provision of a plan or a proposed plan that renders any land incapable of reasonable use, and places an unfair and unreasonable burden on any person, can be challenged to the Environment Court.

This should not be an issue if the debris hazard assessment is robust and the plan provisions are reasonable having regard to the degree of risk (i.e. probability and impact).

3.1.6 Emergency Works

The emergency works provisions under Section 330 enable authorised persons to undertake activities that might otherwise contravene the RMA and would require resource consent in advance. They can only be used in emergency situations when there is a need for immediate intervention to prevent or remedy adverse environmental effects or prevent loss of life, injury or serious damage to property.

Emergency works require retrospective resource consents to be sought.

3.1.7 National Policy Statements and Standards

There are no directly relevant NPS or NES that deal with hazard management.

The New Zealand Coastal Policy Statement has indirect relevance where works may result in effects on coastal values, including natural character, in the coastal environment. Matata is within the "coastal environment".

3.2 Building Act 1991

Section 35 outlines the information required for inclusion on a 'Project Information Memorandum', (PIM) prepared by a territorial authority. Information that is likely to be relevant to the proposed building work must be included and should identify special features of the land. Special features include natural hazards.

Section 71 requires a building consent authority to refuse to grant a building consent for construction of a building or a major alteration, if the land is subject to, or is likely to be subject to, a natural hazard (section 71 (a)), or if the building work is likely to accelerate, worsen, or result in a natural hazard on that land or any other property (71 (b)).

Section 72 of the Act allows for a building consent to be granted for a building where a natural hazard has been identified, subject to conditions.

Building consent for building on land subject to natural hazards must be granted in certain cases

- *Despite section 71, a building consent authority that is a territorial authority must grant a building consent if the building consent authority considers that—*
 - *(a) the building work to which an application for a building consent relates will not accelerate, worsen, or result in a natural hazard on the land on which the building work is to be carried out or any other property; and*
 - *(b) the land is subject or is likely to be subject to 1 or more natural hazards; and*
 - *(c) it is reasonable to grant a waiver or modification of the building code in respect of the natural hazard concerned*

Under Section 73, any identified natural hazards are recorded on the property title. This can then have insurance implications for property owners and could have the effect of controlling development.

In 2006, the Council sought a determination from the Department of Building and Housing on whether houses at Matata affected by debris hazards from the Awatarariki catchment were "dangerous buildings" in terms of Section 21 of the Building Act.

The Department determined that the buildings were not "dangerous" because the return period of the storm (less than 200 years) that caused damaging flows was not likely "In the ordinary course of events". The determination also observed that a warning system would "contribute to life safety".

3.3 Local Government and Official Information and Meetings Act

Under Section 44, a person may apply to a territorial authority for the issue of a Land Information Memorandum (LIM) in relation to matters affecting any land in the district.

The matters that must be in a LIM include:

"(a) information identifying each (if any) special feature or characteristic of the land concerned, including but not limited to potential erosion, avulsion, falling debris, subsidence, slippage, alluvion, or inundation, or likely presence of hazardous contaminants, being a feature or characteristic that—

(i) is known to the territorial authority; but

(ii) is not apparent from the district scheme under the Town and Country Planning Act 1977 or a district plan under the Resource Management Act 1991"

This means that any person requesting a LIM at Matata must be provided with information relating to debris hazards.

3.4 Civil Defence Emergency Management Act

One of the purposes of the Civil Defence Emergency Management Act 2002 (CDEMA) is to encourage and enable communities to achieve acceptable levels of risk by, among other things, identifying, assessing and managing risks (section 3 (b)i)).

4.0 Planning Framework

4.1 Proposed Regional Policy Statement

The District Plan must give effect to the relevant provisions of the Regional Policy Statement.

Relevant policies in the Proposed RPS are:

Policy NH 1B: Assessing natural hazard risk

Assess natural hazard risk to human health and safety, buildings, property, infrastructure and to the social, economic and cultural well-being of people and communities in three categories – acceptable, tolerable, and intolerable.

An assessment of whether a risk is acceptable, tolerable or intolerable should:

- (a) Be in such detail as corresponds with the scale and significance of the risk having regard to the purpose of infrastructure and the land uses that could be affected;*
- (b) Include an evaluation of the likelihood and consequences of maximum credible events and an appropriate range of lesser events;*
- (c) Facilitate review;*
- (d) Inform and take account of the community response to the risk and the proposed level of residual risk; and*
- (e) Be informed by and recognise the relevant legislation, guidelines, standards and best practice.*

Policy NH 2B: Managing natural hazard risk for new development

Manage new development so that natural hazard risk does not exceed acceptable levels.

Policy NH 3B: Reducing natural hazard risk in existing use and development

Reduce the risk from natural hazards to life and property in areas of existing use and development to be as low as reasonably practicable until acceptable levels of risk are achieved.

Particular regard shall be given to:

- (a) Providing for low intensity activities in vulnerable locations;*
- (b) Designing for relocatable or recoverable structures;*
- (c) Relocation or removal of structures;*

(d) Replacement or modification of existing development to reduce risk without recourse to hard protection structures; and

(e) Protecting, restoring or enhancing natural defences against natural hazards.

Policy NH 4B: Avoiding intolerable risk from natural hazards

Avoid any intolerable risk from natural hazards.

Policy NH 5B: Facilitating reduced natural hazard risk

Regard likely reduction in natural hazard risk deriving from elements of development or use proposals as a positive effect in the consideration of such proposals.

Policy NH 6B: Providing for climate change

Incorporate the effects of climate change in natural hazard risk assessment.

These provisions are under general appeal, so reference must be also made to the operative RPS in plan development. The operative RPS contains similar policies on the avoidance or mitigation of hazard risk.

The general policy intent of both the operative and proposed RPS includes avoiding any increase in vulnerability of existing settlements that are at risk from natural hazards, and reducing vulnerability over time.

4.2 Operative Regional Plans

Hazard mitigation and post event restoration works all require resource consent under the:

- Regional Land and Water Plan - soil disturbance, sediment discharge, damming or diverting water, activities in a stream bed;
- Tarawera River Catchment Management Plan - largely duplicates the Regional Land and Water Plan;
- Regional Gravel Management Plan - stream bed disturbance;
- Regional Air Plan - dust emissions.

In most cases, the activity status is discretionary.

The maximum term for resource consent under the Regional Plan is 35 years.

4.3 Operative District Plan

The operative District Plan provisions will apply until replaced through the District Plan Review process.

Flooding and Landslides are described as natural hazards affecting the District⁵. Debris flows and flood are not described.

Significant Resource Management Issues are:

"1. The loss of life, physical destruction including loss of significant ecological areas, and cost which result from a natural hazard event.

⁵ Policy 2.3

2. The need to quantify the degree of risk associated with particular natural hazard events and their effect on existing or proposed developments.
3. Whether modification to, or the placement of structures on, over or under land to prevent or reduce the adverse effects of an event are environmentally appropriate and sustainable.
4. The avoidance or mitigation of future development in areas identified as sensitive to natural hazards, particularly in the coastal environment.

Objectives and Policies are:

2.3.3 Objectives and Policies

AVOIDANCE AND MITIGATION OF NATURAL HAZARDS

Objective NHaz1	To manage the subdivision, use, development and protection of land so as to avoid or mitigate the adverse effects of natural hazards on the life and wellbeing of people, and significant environmental values.
Policy 1	To avoid modification of natural features and processes for the purposes of natural hazard management unless research and community consultation justifies the need for modification by being the best practicable option.
Policy 2	To avoid or mitigate the adverse effects of building within high fire risk areas.
Policy 3	To avoid or mitigate the adverse effects of the subdivision, use or development of land which is, or is likely to be, subject to material damage to land by erosion, falling debris, subsidence, slippage or inundation from any source.
Policy 4	To avoid or mitigate the adverse effects of the subdivision, use or development of land that is likely to accelerate, worsen or result in material damage to that land, or other land, or structures, by erosion, falling debris, subsidence, slippage or inundation from any source.
Policy 5	To take into account the extent and nature of seismic hazards to avoid, remedy or mitigate adverse effects on activities in suspected earthquake risk areas.
Policy 6	To encourage the retention of natural areas and landforms such as dunes and wetlands which play an important role in hazard mitigation.
Policy 7	New structures (including associated stormwater disposal systems) shall not be sited, designed or constructed to have an adverse effect on the stability of the escarpment in Whakatane or Ohope.
Policy 8	To manage vegetation and earthworks on the escarpment in Whakatane or Ohope to assist in stabilising the slope.

Subdivision Performance Standards include a “Management of Natural Hazards Rule”⁶ which refers to Section 106 of the RMA and the requirement that subdivision consent cannot be granted if land is likely to be affected by natural hazards and these effects cannot be avoided, remedied, or mitigated.

The Activity Status Table for the Rural 4 (Settlement) Zone includes the following:

⁶ Rule 4.1.15

Activity	Examples	Rural 4 Zone
Activities on the site of an identified natural hazard	Rangitaiki Floodway Te Rahu Ponding Basin ASCH (Area Sensitive to Coastal Hazard) line; properties in Clem Elliott Drive, Matata	See Section 4.3

Land Use Performance Standards for natural hazards in Section 3.4 include a Flooding/inundation Rule”⁷ which lists the following specific rule:

“4.3.1.3 No structures shall be sited within the following areas of land adjoining these streams in Matata:

(a) Waitepuru Stream: within three metres from left bank; 6.5 metres from right bank;

(b) Waimea Stream: within four metres from left bank; two metres from right bank;

(c) Awatarariki Stream: within four metres from left bank; four metres from right bank.”

These stream buffers are in effect “hazard zones”, although have not been described as such.

Where an activity does not comply with the rule, discretionary resource consent is required.⁸ In effect, the discretionary decision allows the specific hazard risk of the proposal to be assessed against listed criteria.

Permitted earthworks in the Rural 4 (Settlement) Zone are limited to not exceeding 350m² in area and 150m³ in volume. Earthworks above this limit is a restricted discretionary activity⁹.

Flood control stopbanks and necessary incidental equipment are a controlled activity across the District¹⁰.

Other Methods¹¹ include the following general provision which applies District wide:

“4.3.5.1 Land Instability

The provisions of the Building Act 1991 deal with the management of land instability.

In areas identified as prone to instability, the Act's provisions will be used to exercise control over buildings and may include restrictions concerning the design and liability for damage.

Where, as a result of stability investigations, land is found to be subject to, or likely to be subject to, slippage but the building work itself will not accelerate or worsen the situation or affect other land, then the Council can grant building consent subject to the title being annotated that the land is subject to, or is likely to be subject to, slippage pursuant to Section 72 of the Building Act 2004.”

⁷ Rule 4.3.1

⁸ Rule 3.11.10

⁹ 4.1.2.2 Note at end of Rule (unnumbered)

¹⁰ 4.6.1.25.

¹¹ Rule 4.3.5

4.4 Granted Resource Consents for Debris Hazard Mitigation Works

Debris hazard risk assessments will be able to take into account the risk reduction provided by the completed mitigation works that have been provided under resource consents from both the regional and district Councils.

There must be a long term commitment from Council to maintain the functionality of the debris mitigation works if the hazard zones are to take these into account. This would include the removal of debris following an event to re-establish the capacity of the structures to take any further event.

5.0 Best Practice

5.1 Matata Debris Flows Hazard and Risk Investigations Regulatory Review – August 2005

This report was prepared for WDC by T&T to identify responsibilities associated with natural hazards at Matata.

The report noted the limitations on Council's ability to control land use in areas that have already been developed, although it identified opportunities to improve control of redevelopment of damaged properties and for future development.

The responsibility for undertaking flood control works was assessed in the context of the Regional Policy Statement and it was concluded that most hazards are the responsibility of the District Council to manage.

5.2 New Zealand Best Practice

No best practice examples have been identified in New Zealand for specifically managing debris flow risks in District Plans. However, best practice for landslide risk and flooding has similar characteristics.

The best practice approach taken in plans to landslides and land instability is to reduce the risk, and avoid activities in areas prone to these hazards. The plan provisions relate to the identification and mapping of hazard areas, the need for site investigations, zoning to avoid development in areas subject to the hazards; and developing rules and standards to assess consents for activities in areas prone to these hazards. There is also a link to the Building Act requirements.

There is not a consistent approach around New Zealand to managing activities in areas prone to landslides. In addition, existing use rights may also cause issues when it comes to avoiding the hazards.

Other mechanisms that can be used to assist with the management of landslides hazards:

- LIMs and PIMs to provide information on location and/or characteristics of known hazards;
- Apply provisions of Building Act to buildings and structures in natural hazard areas;
- Education programmes to improve knowledge and promote awareness and avoidance or mitigation measures;
- Advice and advocacy e.g. best practice guidelines;
- Monitoring;
- Emergency management planning, including warning systems;
- Emergency works;
- Engineering solutions e.g. retaining walls;
- Lifeline engineering projects to assess vulnerability of lifelines and develop contingency and response plans;
- Research, scoping studies, hazard vulnerability studies, risk assessments;
- Acquire / purchase land (Annual Plan, LTCCP).

6.0 Alternatives

6.1 Overview

Two hazard risk zone alternatives have been developed for consideration:

- “Event Based Hazard Zones”
- “Risk Based Hazard Zones”

The “Information Based Approach” is also described. This approach uses the specific powers and duties prescribed in the Building, Local Government Official Information and Meetings Act and Resource Management Act for the management of natural hazards.

Several other planning measures that can be implemented alongside the alternatives are also identified for evaluation.

6.2 Event Based Debris Hazard Zones

Event based hazard zones describe two natural hazard events:

- Debris inundation(debris avalanche and debris flow)
- Debris flood

The extent of the areas affected by these natural hazards is assessed and identified on the District Plan maps. This assessment includes the application of generalised assumptions on what are the acceptable levels of risk.

The background information in the District Plan identifies the nature of the hazard risk in terms of the general consequences of the event and the probability of occurrence.

Objectives and policies mirror those contained in the proposed RPS.

An additional policy is included that specifically addresses the issue of protection of existing development and reduction of risk in developed areas that are subject to natural hazards:

"To enable protection of existing development that is subject to natural hazards, and to facilitate reinstatement following a hazard event."

Land use and subdivision rules allow for appropriate development within the defined natural hazard zones as set out in the table below.

Restricted discretionary activity status recognises that the assessment is on discrete matters related solely to hazard risk management. All restricted applications would be non-notified.

Because the degree of hazard risk is not assessed in detail up front, the rules for new development are relatively flexible and enable land owners to commission their own quantitative risk assessments as part of a resource consent process. This enables fine tuning of the risk assessment in the context of what are relatively broad brush hazard zones.

Rules Table – Provisions for Event Based Debris Hazard Zones

Name	Risk Description	Outcome/Policy	Possible Hazard Management Rules	
			Land Use	Subdivision
Debris Inundation	Area likely to be subject to debris avalanche, debris flow and debris flood events of any return period. Risk of loss of life or injury.	Avoid or remedy risk	Permitted: <ul style="list-style-type: none"> Hazard Mitigation works Restoration earthworks Reinstatement of infrastructure. Low risk activities – small non-habitable buildings, ancillary uses, temporary uses. Restricted Discretionary: <ul style="list-style-type: none"> New development - where a Quantitative Risk Assessment establishes that proposal is not likely to be subject to debris avalanche or debris flow events with significant risk of loss of life or injury. Existing use rights apply	Non-complying
Debris flood	Area likely to be subject to debris flood of any return period. Risk of property damage from debris flood.	Reduce risk	Permitted <ul style="list-style-type: none"> Hazard Mitigation works Restoration earthworks Reinstatement of infrastructure. Low risk activities – small non-habitable buildings, ancillary uses, temporary uses. Restricted Discretionary: <ul style="list-style-type: none"> Increase in scale of existing development where risk of damage is the same or reduced (e.g. via raised building platform or bunding). New development where expert assessment establishes that area is not likely to be subject to debris flood damage. Existing use rights apply	Restricted Discretionary Activity: Subject to: Measures to protect future development from flooding. or Where expert assessment establishes that area is not likely to be subject to debris flood.

6.3 Risk Based Debris Hazard Zones

Risk based debris hazard zones apply risk of "loss of life" criteria to areas subject to "debris inundation" and a "debris flood area":

- Debris Inundation – High-Very High Risk
- Debris Inundation – Moderate Risk
- Debris flood

The extent of the areas affected by these hazards is assessed using rigorous quantitative estimation of risk of loss of life. Zones are identified on the District Plan maps. This assessment includes the application of specific assumptions on what are the acceptable levels of risk.

The background information in the District Plan identifies the nature of the hazard risk in terms of the specific consequences of the event and the probability of occurrence.

Objectives and policies mirror those contained in the proposed RPS.

An additional policy is included that specifically addresses the issue of protection of existing development and reduction of risk in developed areas that are subject to natural hazards:

"To enable protection of existing development that is subject to natural hazards, and to facilitate reinstatement following a hazard event."

Land use and subdivision rules allow for appropriate development within the defined natural hazard zones as set out in the table below.

Restricted discretionary activity status recognises that the assessment is on discrete matters related solely to hazard risk management. All restricted applications would be non-notified.

Because the degree of risk is assessed "up front", the rules are relatively prescriptive. If a landowner wished to undertake their own assessment, this could be achieved through a non-complying activity application.

Table – Provisions for Risk Based Hazard Zones

Name	Risk Description	Outcome/Policy	Rules	
			Land Use	Subdivision
Debris Inundation – High-Very High Risk	<p>Direct Impact.</p> <p>High-Very high risk of loss of life. >10⁻³</p> <p>High-Very high risk of injury.</p> <p>High-Very high risk of property loss.</p>	Avoid, or remedy, or significantly reduce risk	<p>Permitted:</p> <ul style="list-style-type: none"> Hazard mitigation works Restoration earthworks Reinstatement of infrastructure. Low risk activities – small non-habitable buildings, ancillary uses, temporary uses. <p>Restricted Discretionary:</p> <ul style="list-style-type: none"> Increase in scale and intensity of existing residential development - where a Quantitative Risk Assessment establishes that overall risk is reduced (building relocation, raised building platform, protection walls or bunding). <p>Non-complying</p> <ul style="list-style-type: none"> New residential development <p>Existing use rights apply</p>	Prohibited
Debris Inundation - Moderate Risk	<p>Indirect Impact.</p> <p>Moderate risk of loss of life. >10⁻⁵</p> <p>High risk of injury.</p> <p>Very high risk of property loss .</p>	Avoid or Reduce risk	<p>Permitted:</p> <ul style="list-style-type: none"> Hazard Mitigation works Restoration earthworks Reinstatement of infrastructure. Low risk activities – small non-habitable buildings, ancillary uses, temporary uses. <p>Restricted Discretionary:</p> <ul style="list-style-type: none"> Increase in scale and intensity of existing residential development – where a Quantitative Risk Assessment establishes that overall risk is not increased (e.g. building relocation, raised building platform, protection walls or bunding). New development - where a Quantitative Risk Assessment establishes that risk is avoided through design measures (e.g. building location, raised building platform, protection walls or bunding). <p>Existing use rights apply</p>	Non-complying
Debris Flood	<p>Sedimentation.</p> <p>Low risk of loss of life.</p> <p>Low risk of injury.</p> <p>Moderate risk of property damage.</p>	No increase in risk	<p>Permitted</p> <ul style="list-style-type: none"> Hazard Mitigation works Restoration earthworks Reinstatement of infrastructure Low risk activities – small non-habitable buildings, ancillary uses, temporary uses. <p>Restricted Discretionary:</p> <ul style="list-style-type: none"> Increase in scale of existing residential development - where risk is same or reduced (e.g.building relocation, raised building platform, protection walls or bunding). New residential development - where risk is avoided through design measures (e.g. building platform, or bunding). <p>Existing use rights apply.</p>	<p>Restricted Discretionary Activity:</p> <p>Subject to:</p> <p>Measures to protect future development from flooding.</p>

6.4 Information Based Approach

This approach uses the specific powers and duties prescribed in the Building, Local Government Official Information and Meetings Act and Resource Management Act for the management of natural hazards.

These are:

- Building Act –Project Information Memoranda (s35), Limitations and restrictions on building consents: Construction of building on land subject to natural hazards (ss71-73)
- Local Government Official Information and Meetings Act - Land Information Memoranda (s44)
- Resource Management Act - Consent authority may refuse subdivision consent in certain circumstances (s106)

These duties and powers would also apply in tandem with either of the Hazard Zone alternatives.

The extent of the areas affected by debris hazards is assessed using available information. This assessment includes the application of general assumptions on what are acceptable levels of risk. Hazard information could be enhanced as scientific knowledge improves. This may include quantification of the degree of risk in given areas.

Hazard areas are not identified on the District Plan maps. Information is made available via Land Information Memoranda (pre-purchase) and Project Information Memoranda (new buildings) and is used in the assessment of subdivision consent applications. Land owners would be able to commission their own hazard risk assessments and use this to negotiate flexibility on a case by a case basis.

The background information in the District Plan identifies the nature of the hazard risk in terms of the specific consequences of the event and the probability of occurrence.

District Plan objectives and policies reflect those contained in the proposed RPS, and refer to the use of information and powers and duties under the BA and LGOIMA to manage building risks and Section 106 of the RMA to control subdivision.

An additional policy is included that specifically addresses the issue of protection of existing development and reduction of risk in developed areas that are subject to natural hazards:

"To enable protection of existing development that is subject to natural hazards, and to facilitate reinstatement following a hazard event."

The Council would refuse to grant a building consent for a building or a major alteration unless the provisions of Section 72 of the Act are met. Under Section 72 a decision is made on whether:

- the building work will accelerate, worsen, or result in a natural hazard on the land on which the building work is to be carried out or any other property; and
- it is reasonable to grant a waiver or modification of the building code in respect of the natural hazard concerned.

The Council would refuse to grant subdivision consent unless the applicant can provide expert assessment to establish that the land is not subject to hazards or that suitable mitigation measures can be applied.

An administrative policy on how to assess and determine acceptable risk in any particular case would be developed to support day to day decision making by Council officers. This policy would have the general intention of avoiding any increase in vulnerability to natural hazards and reducing vulnerability over time. This would be a significant policy and be subject to public consultation under the Local Government Act process.

6.5 Other Planning Methods

6.5.1 Changes to Regional Plans

Given that permanent and ongoing settlement is enabled by hazard mitigation works such as the Waitepuru Debris Control system and Awatarariki Stream works and flood bays, consideration should be given to changes to the Regional Water and Land Plan (RWLP) to give full certainty to renewal of related resource consents. Under the RWLP "controlled activity" status is given to established hydroelectric power schemes for this reason. Similar provision could be made for hazard mitigation works that protect existing development.

Post event recovery works should be allowed as a permitted activity under the Regional Plans, subject to specific conditions to mitigate nuisances and to ensure that appropriate disposal sites are available. This will avoid the cost and delays associated with consenting works which are necessary and which have unavoidable short term effects.

6.5.2 Civil Defence/Emergency Management

Given that there is existing development in the areas subject to debris hazards, there will invariably be a role for civil defence in preparedness, response and recovery.

Given the risk to life and property from debris hazards, the only way to protect human safety is to evacuate in advance of an event. This requires warning systems to be kept in place.

6.5.3 Public education

Public education can be in the form of property specific measures such as LIMs and S72 notices, as well as broader awareness of hazards through civil defence protocols.

6.5.4 Settlement Strategy

Debris hazard risk management is influenced by wider decision that may affect the future development of Matata.

Matata has had low levels of growth in recent years. The District Plan records that Matata has experienced a decreasing population. As a result any increase in risk exposure has been relatively limited.

The Whakatane Urban Development Strategy does not include any rural settlements. If a settlement strategy was to be developed for the wider district the development vision for Matata would need to take into account the issues of hazard management.

7.0 Evaluation

Section 32 of the Resource Management Act requires a territorial authority to consider alternatives, benefits and costs of plan provisions in order that it adopts the most appropriate provisions in a plan.

This will require consideration of legal and policy issues, scientific risk data, economic evaluation, community consultation, and political judgement.

8.0 Summary/Conclusion

Potential engineering and planning options have been assessed for debris hazard risk management at Matata.

Planning options have been identified as preferable to engineering options due to cost and feasibility. These planning options include property purchase, hazard zoning and information based approaches. The report addresses hazard zoning and information based options.

Legislation and regional and local plans provide a framework for considering an appropriate planning response to debris hazards. The Regional Policy Statement is a particularly important part of this framework as the District Plan must "give effect" to the relevant regional natural hazard policies.

It is also notable that any District Plan hazard rules have no retrospective effect due to existing use rights that apply to existing development.

Two hazard zoning alternatives have been developed for consideration: "Event Based Hazard Zones" and "Risk Based Hazard Zones".

The "*Event Based Hazard Zone*" alternative would identify hazard risk on a relatively broad brush basis using currently available information. This alternative would enable owners to commission their own quantitative risk assessment if they wished to undertake a significant new development on their land.

The "*Risk Based Hazard Zone*" alternative would identify hazard risk up front using rigorous quantitative estimation of risk of loss of life. This alternative would provide more certainty to landowners on what development could occur on their land, based on the assessed degree of risk. Owners could commission their own risk assessment, but this would be unlikely to produce a significantly different outcome.

An "*Information Based Approach*" has also been described. The Information Based Approach uses the specific powers and duties prescribed in the Building, Local Government Official Information and Meetings Act, and Resource Management Act for the management of natural hazards.

Other planning methods can also form part of unified hazard management approach. These methods include changes to regional plans to better enable hazard protection and post event restoration activities, Civil Defence warnings to enable evacuation when an event may be

imminent, public education, and considering natural hazard issues in broad scale settlement strategies.

Evaluation of planning options will require consideration of legal and policy issues, scientific risk data, economic evaluation, community consultation, and political judgement.