

APPENDIX 1

Proposed Plan Change 15- Flood and Erosion Hazard Areas

Section 32 Analysis

1.0 Introduction

- 1.1 Section 32 of the Resource Management Act 1991 (the RMA) requires that a section 32 analysis be undertaken before the notification of a plan change by Council. Sections 32(3) and 32(4) provide guidance as to what such an evaluation must examine and consider, as follows:

“32(3) An evaluation must examine –

- (a) the extent to which each objective is the most appropriate way to achieve the purpose of this 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.*

32(4) For the purposes of examinations referred to in subsections (3) and (3A), 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.”*

- 1.2 The purpose of the Resource Management Act 1991 is defined by section 5 of the Act as follows:

“5(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.”

- 1.3 This report should be read in conjunction with the Hutt River Floodplain Management Plan and the Mangaroa River Flood Hazard Assessment (available on GWRC's website <http://www.gw.govt.nz/hutt-river-flood-plain-management-plan/> and <http://www.gw.govt.nz/mangaroariver/>). All proposed changes to the District Plan resulting from the plan change are included as Appendix 2.

2.0 Background

- 2.1 As detailed in the cover report, in accordance with section 31(1)(b) of the RMA Council must control 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.
- 2.2 Section 2 of the RMA defines a natural hazard as: *“[a]ny natural process that can adversely affect human life, property or valued aspects of the natural environment including: earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire or flooding.”*

Hutt River Floodplain Management Plan [“HRFMP”] and Mangaroa River Flood Hazard Assessment [“MRFHA”]

- 2.3 The proposed plan change follows on from work undertaken by the Greater Wellington Regional Council [“GWRC”], identifying and assessing the flood and erosion hazard areas for the Hutt and Mangaroa Rivers.
- 2.4 GWRC has developed the HRFMP, which provides information on the flooding and erosion risk of the Hutt River, and the MRFHA, which provides flooding and erosion risk information for the Mangaroa River.
- 2.5 The HRFMP is a 40 year blue print for managing and implementing programmes that will gradually reduce flood risk from the Hutt River. The plan was a joint effort between the GWRC, Hutt City Council and Upper Hutt City Council, and reflects the varied and shared responsibilities of the three councils involved.
- 2.6 Hydraulic modelling of the Hutt River and Mangaroa River has been undertaken for the HRFMP and MRFHA to identify the hazard areas and assist in the development of planning controls to address the hazards within the Hutt and Mangaroa Valleys.
- 2.7 The proposed plan change seeks to take a consistent approach to managing the flood and erosion hazard risk in Upper Hutt. The objectives, policies and rules are intended to accommodate the Hutt River and Mangaroa River flood and erosion hazard areas.

Upper Hutt Urban Growth Strategy

- 2.8 The proposed plan change would implement the objectives relating to flooding set down by the Urban Growth Strategy [“UGS”]¹ by incorporating the non-structural measures of the HRFMP and the MRFHA into the District Plan. In addition to this, the proposed provisions would be structured in a way that would enable flooding information for other rivers to be easily inserted as the information becomes available.

Proposed Regional Policy Statement

- 2.9 Section 74(2) of the Act requires that in changing a District Plan, regard shall be had to a proposed regional policy statement. The GWRC Proposed Regional Policy Statement [“PRPS”] should be considered in a manner which results in the proposed plan change aligning itself with the relevant PRPS provisions, thereby minimising and perhaps eliminating any later inconsistencies. This is important as the District Plan needs to give effect to the PRPS once operative.
- 2.10 The relevant provisions of the PRPS are those relating to natural hazards. The following objectives are considered relevant:
- **Objective 18:** *The risks and consequences to people, communities, their businesses, property and infrastructure from natural hazards and climate change effects are reduced.*
 - **Objective 19:** *Hazard mitigation measures, structural works and other activities do not increase the risk and consequences of natural hazard events.*

¹ See pages 89 & 92, *Upper Hutt Urban Growth Strategy*, September 2007.

- **Objective 20:** Communities are more resilient to natural hazards, including the impacts of climate change, and people are better prepared for the consequences of natural hazard events.

2.11 The following PRPS policies which direct district plans, and consequently must be given effect to, are considered relevant:

- **Policy 14:** Minimising the effects of earthworks and vegetation disturbance – district and regional plans:

Regional and district plans shall include policies, rules and methods that control earthworks and vegetation disturbance to minimise:

- (a) erosion; and*
- (b) silt and sediment runoff into water, or onto land that may enter water, so that aquatic ecosystem health is safeguarded.*

- **Policy 28:** Avoiding inappropriate subdivision and development in areas at high risk from natural hazards – district and regional plans

Regional and district plans shall:

- (a) identify areas at high risk from natural hazards; and*
- (b) include policies and rules to avoid inappropriate subdivision and development in those areas.*

2.12 The following PRPS policies list matters that must be given particular regard when assessing and deciding on resource consents, notices of requirement and when undertaking a district plan change:

- **Policy 50:** Minimising the risks and consequences of natural hazards – consideration.

When considering an application for a resource consent, notice of requirement, or a change, variation or review to a district or regional plan, the risk and consequences of natural hazards on people, communities, their property and infrastructure shall be minimised, and/or in determining whether an activity is inappropriate particular regard shall be given to:

- (a) the frequency and magnitude of the range of natural hazards that may adversely affect the proposal or development, including residual risk;*
- (b) the potential for climate change and sea level rise to increase the frequency or magnitude of a hazard event;*
- (c) whether the location of the development will foreseeably require hazard mitigation works in the future;*
- (d) the potential for injury or loss of life, social disruption and emergency management and civil defence implications - such as access routes to and from the site;*
- (e) any risks and consequences beyond the development site;*
- (f) the impact of the proposed development on any natural features that act as a buffer, and where development should not interfere with their ability to reduce the risks of natural hazards;*
- (g) avoiding inappropriate subdivision and development in areas at high risk from natural hazards;*
- (h) the potential need for hazard adaptation and mitigation measures in moderate risk areas; and*

(i) the need to locate habitable floor areas and access routes above the 1:100 year flood level, in identified flood hazard areas.

- **Policy 51 (consideration):** Minimising adverse effects of hazard mitigation measures

When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, for hazard mitigation measures, particular regard shall be given to:

- (a) the need for structural protection works or hard engineering methods;
- (b) whether non-structural or soft engineering methods are a more appropriate option;
- (c) avoiding structural protection works or hard engineering methods unless it is necessary to protect existing development or property from unacceptable risk and the works form part of a long-term hazard management strategy that represents the best practicable option for the future;
- (d) the cumulative effects of isolated structural protection works; and
- (e) residual risk remaining after mitigation works are in place, so that they reduce and do not increase the risks of natural hazards.

2.13 The PRPS requires that communities should be made aware of and become more resilient to natural hazard risks. The proposed plan change seeks to identify the flood risk and put in place rules and policies to manage development within the flood hazard area.

2.14 Policies 28 and 50 are particularly relevant; in that district plans shall identify areas of high risk and include policies and rules to avoid subdivision and inappropriate development in hazard areas. UHCC has taken Environment Court appeal proceedings in respect of the proposed wording of Policy 28. Specifically, the appeal seeks to ensure that *appropriate* subdivision in the flood hazard area can still be provided for in the District Plan. As mentioned in the covering report, discussions between UHCC and the GWRC are progressing and the appeal is in the process of being resolved through mediation.

2.15 As the PRPS is at an advanced stage of conception, and the scope of the appeals lodged is very limited, it would be prudent to ensure that the proposed plan change is aligned with the relevant PRPS provisions.

2.16 In summary, it is considered that Plan Change 15 would give effect to the PRPS.

Operative Regional Policy Statement

2.17 Chapter 11 of the operative Regional Policy Statement ["RPS"] relates to natural hazards.

2.18 The following objective is considered relevant:

- **Objective 11.3:** Any adverse effects of natural hazards on the environment of the Wellington Region are reduced to an acceptable level.

2.19 The following policies are considered relevant (under **Policy 11.4**):

- **Policy 1:** To ensure that there is sufficient information available on natural hazards to guide decision making.
- **Policy 2:** To consider all of the following matters when planning for, and making decisions on, new subdivision, use, and development in areas which are known to be susceptible to natural hazards:
 - 1) The probability of occurrence and magnitude of the natural hazards, and the location of the effects, including any possible changes which might arise from climate change;
 - 2) The potential consequences of a natural hazard event occurring, both on-site and off-site. Potential loss of life, injury, social and economic disruption, civil defence implications, costs to the community, and any other adverse effects on the environment should be considered;
 - 3) The measures proposed to mitigate the effects of natural hazard events, the degree of mitigation they will provide, and any effects on the environment from adopting such measures;
 - 4) Alternative measures that might be incorporated into the subdivision, use and development to mitigate the effects of natural hazard events, the degree of mitigation they will provide, and any effects on the environment from adopting such measures. Both structural and non-structural measures should be considered;
 - 5) The benefits and costs of alternative mitigation measures;
 - 6) The availability of alternative sites for the activity or use; and
 - 7) Any statutory obligations to protect people and communities from natural hazards.
- **Policy 3:** To recognise the risks to existing development from natural hazards and promote risk reduction measures to reduce this risk to an acceptable level, consistent with Part II of the Act.
- **Policy 4:** To ensure that human activities which modify the environment only change the probability and magnitude of natural hazard events where these changes have been explicitly recognised and accepted.
- **Policy 5:** To encourage people and communities to prepare for the occurrence of natural hazard events by providing them with relevant information and advice.

2.20 Therefore the operative RPS seeks to reduce risks arising from natural hazards. Proposed Plan Change 15 gives effect to these objectives and policies.

Upper Hutt District Plan

2.21 The District Plan currently contains a 1 in 100 year flood extent for the Hutt River and some rules relating to development in this area. The current flood extent does not apply to the Mangaroa River.

2.22 Under the current rules (prescribed by Chapter 33: Rules for Flooding and Fault Band Hazards), all new buildings and structures within the 1 in 100 year flood extent require resource consent for a discretionary activity. Subdivision is not specifically addressed in the current provisions, however s106 of the Resource Management Act gives Council the ability to consider hazards in respect of subdivision.

3.0 Proposed Plan Change

- 3.1 The key focus of the plan change, and an important objective for floodplain management planning by GWRC, is keeping people and inappropriate development away from floodwaters and erosion hazards.
- 3.2 Formerly, the District Plan only contained information regarding the flood hazard from the Hutt River. This plan change seeks to update and strengthen existing provisions, whilst additionally guiding development within the Mangaroa River catchment, given that detailed flooding information for this river is now available.
- 3.3 The Mangaroa River catchment is largely comprised of rural-zoned land and the existing pattern of development is typically low density. In light of this, it is considered opportune to implement the proposed plan change in order to avoid development in areas at risk from flooding effects, rather than allowing development that requires flood defences.
- 3.4 Generally speaking, PC15 seeks to manage landuse and development, focusing on:
- Structures and buildings, including accessory buildings;
 - Subdivision;
 - Earthworks;
 - Storing hazardous substances; and
 - Utility facilities.
- 3.5 PC15 updates and expands existing flood and erosion hazard information relevant to the Hutt and Mangaroa Rivers in chapters 3, 8, 14, 16, 23, 30, 33, 34, 35 and the Planning Maps detailed in Part 5 of the District Plan.
- 3.6 PC15 seeks to improve knowledge about the flood hazard, understanding about the effects of floods and to strengthen the community's preparedness for floods.
- Defining the Flood Hazard Area**
- 3.7 The GWRC has defined the flood and erosion hazard areas of the Hutt River and the Mangaroa River by delineating and identifying the River Corridor, Overflow Path and Ponding Areas and the Erosion Hazard Line. As previously stated, hydraulic modelling has been undertaken to ascertain these areas.
- 3.8 The **River Corridor** includes land adjacent to the river and is the minimum area able to contain a major flood and enable water to pass safely to the sea. It includes flood and erosion prone land immediately adjacent to the river, where the risk to people and development is significant.
- 3.9 The **Erosion Hazard Line** identifies land potentially at risk of erosion from river movement. Land on the river-side of the line could be at risk from erosion over time due to the flow, velocity and meander patterns of rivers.
- 3.10 The **Overflow Path** areas generally occur in lower-lying areas on the floodplain which act as channels for flood waters. They are often characterised by fast flowing water during a flood event. A blocked overflow path could potentially cause a redistribution of flood flows to other areas.

- 3.11 **Ponding Areas** are those areas on the floodplain where slower-moving waters could pond either during or after a flood event.

4.0 Appropriateness of Objectives

- 4.1 As the Plan currently contains information regarding the 1 in 100 year flood extent for the Hutt River, an existing policy framework for flood hazards currently exists. Chapter 14 - Natural Hazards naturally has the most relevance to the flooding issue, and Chapter 8 - Special Activity Zone, contains an objective specifically addressing the flood hazard that occurs on the St Patricks Estate site. The existing objectives contained in these chapters are considered appropriate to accommodate the new information being introduced by the Plan Change; however proposed changes to the explanatory text would be introduced, as outlined below.
- 4.2 It is proposed to make the following amendments to objective 8.3.3. Text shown with a ~~strike through~~ would be deleted and additional text is shown underlined.

8.3.3 ***Provision for a range of activities on the St Patrick's Estate Area which avoids, remedies or mitigates any adverse effects on its visual amenity, on the neighbouring community, services and roading infrastructure, and takes into account the flooding hazards.***

St Patrick's Estate is an area of land with potential for a wide range of development options. This area is dealt with under a specific policy framework within the Special Activity Zone. The St Patrick's Estate contains two distinct areas for future development, which are identified on the Planning Maps:

- The St Patrick's College Area for future education expansion.
- The Managed Development Area for a range of other uses.

Controls are required to ~~prevent~~ ensure subdivision and development are managed appropriately due to the flood hazard risk posed by the in close proximity to the Hutt River and Mawaihakona Stream.

- 4.3 The following changes are proposed for objective 14.3.1

14.3.1 ***~~The avoidance, remedying or mitigation of the adverse effects of inappropriate subdivision and development in areas at risk from natural hazards on the environment.~~***

~~The Council has the responsibility under the Act to protect all aspects of the environment, not just people and property, from the adverse effects of natural hazards. Amenity values of an area and its ecological systems should also be protected against natural hazards.~~

Subdivision and development in areas at risk from natural hazards should be avoided, unless the adverse effects can be appropriately avoided, remedied or mitigated. It is acknowledged that it is not always feasible or practicable to avoid, remedy, or mitigate all potential effects of natural hazards at all times for all aspects of the environment.

Development proposals will be required to demonstrate to Council that potential adverse effects of natural hazards, including residual risk, will be appropriately managed in accordance with Policy 14.4.2.

~~Some priority must be placed~~ Council has placed priority on protecting human life and property, but preferably. Preferably this can be achieved in conjunction with achieving other goals, such as maintaining and enhancing amenity values.

~~The goal in managing the effects of natural hazards within the City, therefore is the avoidance avoiding, remedying or mitigation of the adverse effects of natural hazards on the environment as appropriate to the circumstances, with priority placed on community protection. inappropriate subdivision and development in areas at risk from natural hazards.~~

5.0 Appropriateness of policies, rules and other methods for achieving the objectives

Evaluation of proposed policies for achieving the objectives

- 5.1 The following table provides a summary evaluation of how the proposed changes to policies achieve the relevant objectives, as required by s32(b) of the Act.
- 5.2 Text shown with a ~~strike through~~ would be deleted and additional text is shown underlined.

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>Policy 3.4.2 To recognise special resource or environmental issues which exist within the City.</p> <p>As a result of particular issues arising that require different management techniques, special controls have been established to address specific environments or resource issues within the principal zones. These recognise the special qualities or issues facing an area, and enable more specific techniques to be used to promote sustainable management. Such controls are applied to areas with particular amenity or other environmental qualities. Conservation and Hill Areas cover special environments with high amenity values within the Residential Zone.</p> <p><u>The flood and fault band hazard areas are special environments that require particular controls to ensure development in these areas is managed appropriately.</u></p>	<p>The proposed amendment to the explanatory text is efficient and effective as it acknowledges flood hazard as a special environmental issue that has implications across all zones of the City.</p>	<ul style="list-style-type: none"> • The changes recognise that parts of the City that are affected by flood hazards should be subjected to particular controls to address the flooding issue. • The changes recognise that flooding hazards are a City-wide issue. 	<ul style="list-style-type: none"> • Properties within the flood hazard area of the Mangaroa River would be subject to additional regulatory controls. • The resource consent process imposes a monetary cost on landowners and developers.
<p>Relevant objective: Objective 3.3.1 The management of the natural and physical resources of the City in a way that reflects the identified resource management issues and the need to control the actual and potential effects of the use, subdivision and development of resources.</p> <p>Appropriateness for achieving the objective: The proposed amendment to the existing explanatory text assists in achieving this objective as it acknowledges that flooding hazards are a city-wide issue.</p>			
<p>Policy 8.4.4 To provide for a range of activities within the St Patrick's Estate Area which best suit the characteristics and constraints of the existing environment.</p> <p>Two distinct areas provide for a range of commercial, residential and visitor accommodation, open space and</p>	<p>The proposed amendment to the explanatory text is efficient and effective as it specifies a requirement for appropriate flood risk management measures to be undertaken in order for subdivision or development to occur, thereby</p>	<ul style="list-style-type: none"> • The changes update the existing provisions to achieve consistency with the HRFMP and MRFHA. 	<ul style="list-style-type: none"> • The resource consent process imposes a monetary cost on landowners and developers.

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>educational activities <u>that may be appropriate in these areas, subject to</u> the environmental character and constraints of the land and surrounding area. These have been based on previous policies for the land and negotiation with the landowners and other parties. <u>The rules for these areas require that any development be serviced with appropriate access to existing services and roads.</u> Linkages to the Hutt River walkway and the Silverstream Railway Station may be important components of future development.</p> <p>The rules for these areas require that any development be serviced with appropriate access to existing services and roads. These areas are at high risk from flooding. In a major flood event, structures development could impede the flood flow, putting people, buildings, roads or services in danger and causing additional problems. Accordingly, activities that are relatively free of structures development are appropriate for the part of the site in the flood plain or have appropriate flood risk management measures in place, may be suitable for the part of the site in the Flood Hazard Area. However, special requirements. Particular controls are also included in relation to earthworks, building siting and floor levels, roads and services, so that structures development may be developed occur as long as they are it is designed to appropriately manage the risk for protection from future floods flooding within a 1 in 100 year return period the Flood Hazard Area (as shown in the Planning Maps).</p>	<p>taking into account flooding hazards. The amendments also make reference to the new 'Flood Hazard Area', rather than the 1 in 100 year flood extent, thereby linking the policy to the proposed method of displaying the District Plan's spatial information that pertains to the flood hazard.</p> <p>The changes also acknowledge that residential and visitor accommodation activities may be appropriate for the site, so long as the risk posed by flood hazard is appropriately managed. This is further articulated through the relevant rules and performance standards that give effect to this policy.</p>		
<p>Relevant objective: Objective 8.3.3 <i>Provision for a range of activities on the St Patrick's Estate Area which avoids, remedies or mitigates any adverse effects on its visual amenity, on the neighbouring community, services and roading infrastructure, and takes into account the flooding hazards.</i></p> <p>Appropriateness for achieving the objective: The proposed amendment to the existing explanatory text assists in achieving this objective as it requires appropriate flood risk management measures to address of the adverse effects resulting from flood hazards.</p>			

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>New Policy: Policy 8.4.6 <u>To provide for appropriate subdivision and development within the St. Patricks Estate Area, ensuring that the flood risk to the Area is appropriately managed by requiring:</u></p> <p><u>(a) any development to be located at least 200m from the closest bank of the Hutt River; and</u></p> <p><u>(b) an assessment demonstrating how the matters in Policy 14.4.2 will be met.</u></p> <p><u>The St Patricks Estate Area is identified as being in the River Corridor. Whilst new development should ordinarily occur outside of the River Corridor, the St Patricks Estate Area is recognised as an area in which development can occur provided the flood risk to the Area is appropriately managed.</u></p> <p><u>Policy 14.4.2 provides guidance about how subdivision and development in areas at risk of natural hazards will be managed. Policy 8.4.4 provides guidance about the types of development that may be appropriate in the St. Patricks Estate Area.</u></p>	<p>The proposed new policy is efficient and effective as it acknowledges the development potential of the St Patricks Estate site, whilst stating a requirement that only appropriate subdivision and development are provided for and appropriate flood risk management measures must be implemented.</p> <p>In addition, the explanatory text contains references to District Plan Policy 14.4.2, which provides further guidance on the flooding issue.</p>	<ul style="list-style-type: none"> • The changes acknowledge the development potential of the St Patricks Estate Area, whilst providing guidance regarding the implications of the flood hazard in respect of any future development proposals. • The changes update the existing provisions to achieve consistency with the HRFMP and MRFHA. 	<ul style="list-style-type: none"> • The resource consent process imposes a monetary cost on landowners and developers.
<p>Relevant objective: Objective 8.3.3 Provision for a range of activities on the St Patrick's Estate Area which avoids, remedies or mitigates any adverse effects on its visual amenity, on the neighbouring community, services and roading infrastructure, and takes into account the flooding hazards.</p> <p>Appropriateness for achieving the objective: The proposed policy and corresponding explanatory text assists in achieving this existing objective as it recognises that the St Patricks Estate site may be suitable for appropriate subdivision and development in the event that appropriate flood risk management measures to address of the adverse effects resulting from flood hazards are put in place.</p>			

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>Policy 14.4.1 <u>To identify and mitigate the areas of the City that are potentially at risk from adverse effects of natural hazards, including specific identification of areas at high risk from natural hazards, that are a potentially significant threat within Upper Hutt.</u></p> <p>Adequate information is necessary to make informed decisions on developments that may be affected by natural hazards. The main objective relating to natural hazards is knowing where they can occur so that the effects can be avoided, or the appropriate <u>risk</u> management strategies can be put in place.</p> <p>The Council will co-ordinate the provision of information identifying these hazards and the areas at risk. This can be used by developers, the community and the Council to consider the potential risks when making decisions on developments and deciding on possible <u>risk management mitigation</u> measures where natural hazards are involved.</p> <p><u>The Flood Hazard Area is shown on the Planning Maps, using information obtained from the Greater Wellington Regional Council with further details of the flood hazard shown on the Hazard Maps in Part 5. Four different types of flood hazard areas are identified on the maps in Part 5, based on the information known about the rivers and their corresponding flood hazards. These areas are; the River Corridor, Erosion Hazard Line, Overflow Path and Ponding Areas. These areas have varying levels of risk, with the River Corridor, Overflow Path and Erosion Hazard posing the highest risk to people, property and the environment. These levels of risk will inform District Plan performance standards and the areas with the highest risk will have the most restrictive standards.</u></p>	<p>The proposed amendment to the policy is efficient and effective as it corrects an error in the policy wording, which incorrectly seeks to mitigate all potential adverse effects of natural hazards (this is considered unachievable).</p> <p>The proposed amendments to the corresponding explanatory text is efficient and effective as it updates the provisions to introduce the proposed new spatial flood hazard overlays, and provides guidance as to activities that may be unsuitable in areas subject to significant flood hazards, which in turn aligns the Plan with the relevant GWRC flooding documents.</p>	<ul style="list-style-type: none"> • The proposed changes provide clarity by clearly identifying the areas of the City subject to flooding by the Hutt and Mangaroa Rivers. • Ensures that storage of bulk hazardous substances will not be adversely affected by flooding. • Ensures that key emergency services and infrastructure will not be adversely affected by flooding. 	<ul style="list-style-type: none"> • The resource consent process imposes a monetary cost on landowners and developers.

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>Relevant objective: 14.3.1 The avoidance, remedying or mitigation of the adverse effects of inappropriate subdivision and development in areas at risk from natural hazards on the environment.</p> <p>Appropriateness for achieving the objective: The proposed amendments to the policy and corresponding explanatory text assists in achieving this objective as they provide a greater level of guidance as to activities that may not be suitable in areas subject to significant risk from flooding, and introducing a more detailed method of spatially depicting the flood hazard, thereby strengthening the existing provisions.</p>			
<p>Policy 14.4.2 In areas at risk from of known susceptibility to natural hazards, avoid subdivision and development and activities unless they are to be designed and located to avoid, remedy and mitigate, where practicable, so that the adverse effects of natural hazards, and the residual risk on people, property and the environment are no more than minor, without using mitigation measures that will:</p> <ul style="list-style-type: none"> • <u>adversely modify natural processes to a more than minor extent; or</u> • <u>cause or exacerbate hazards in adjacent areas to a more than minor extent; or</u> • <u>significantly alter the natural character of the landscape; or</u> • <u>have high establishment or maintenance costs to the community.</u> <p><u>This policy seeks to limit the adverse effects of natural hazards by avoiding inappropriate subdivision and development in areas at risk from natural hazards. In these areas subdivision and development will not be appropriate unless mitigation measures are implemented to ensure the risk to people, property and the environment is reduced to a no more than minor level, including the residual risk. Any measures designed to avoid, remedy or mitigate risk must be appropriate to the level of risk posed.</u></p>	<p>The proposed amendment to the policy is efficient and effective as it introduces a requirement for subdivision within the flood hazard area to be designed with consideration for the flood hazard. This is considered to be an appropriate requirement given the expectation for a development entitlement that often follows subdivision.</p> <p>The proposed amendments to the corresponding explanatory text is efficient and effective as it further reinforces the expectations of the policy in respect of appropriate subdivision and development in areas subject to flood hazards. It provides examples of mitigation measures that may be appropriate. Specific guidance is provided on the use of structural measures. This is consistent with the explanatory text of PRPS Policy 28. The explanatory text also provides examples of activities that are not</p>	<ul style="list-style-type: none"> • Subdivision within the flood hazard area will now be required to include measures to address the flood hazard. • The subdivider will be required to demonstrate that future development can occur on the site that is clear of the flood hazard. 	<ul style="list-style-type: none"> • Although all subdivision is currently required to be considered by Council through the resource consent process, the proposed change will place additional requirements on the subdivider which may impose a monetary cost.

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p><u>In addition, when determining the appropriateness of a proposed mitigation measure, the potential adverse effects on other properties must also be taken into consideration, as should any effects on an existing risk management protection system.</u></p> <p>This policy lessens the risk factor by restricting developments in hazard prone areas. These controls include appropriate separation distances from a river or fault or designing structures and site development to meet acceptable levels of safety. This also enables applicants to consider the potential risks when making decisions on developments.</p> <p>The effects of permitting more intensive subdivision (and subsequent development and infrastructure) could be substantial and controls on subdivision can reduce these.</p> <p><u>In areas at high risk from natural hazards, most forms of residential, industrial or commercial development would not be considered appropriate and should be avoided, unless it is shown that the effects, including residual risk, will be managed appropriately. Any proposals for subdivision and development occurring in areas at high risk from natural hazards will be required to meet a high threshold for appropriateness as reflected in the District Plan rules and permitted activity standards.</u></p> <p><u>Additionally, the Council will discourage activities such as emergency services, the storage of bulk hazardous substances, and key network facilities services critical for the ongoing function of utility services (e.g. electricity transformers, water and wastewater pumping facilities) siting in areas at high risk from natural hazards. These areas are generally unsuitable locations for these sorts of activities because they expose the community to potentially</u></p>	<p>considered appropriate within the Flood Hazard Area.</p>		

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>significant risks to health and safety, and ongoing community function.</p> <p>Section 106 of the Act also provides Council with the opportunity to decline subdivision consents where there is likely to be material damage to land and structures from erosion, subsidence, slippage or inundation from a river source. Provision must be made for safe access routes to and from a site. Adequate measures must be implemented to ensure that evacuation and emergency services can access a site without any unnecessary risk.</p>			
<p>Relevant objective: 14.3.1 The avoidance, remedying or mitigation of the adverse effects of inappropriate subdivision and development in areas at risk from natural hazards on the environment.</p> <p>Appropriateness for achieving the objective: The proposed amendments to the policy and corresponding explanatory text assist in achieving this objective as they update existing provisions to include subdivision and more effective guidance as to mitigation measures that may be considered appropriate.</p>			
<p>Policy 16.4.1 To ensure that the establishment, operation, maintenance and upgrading of essential utilities in the City avoids, remedies or mitigates any adverse environmental effects.</p> <p>The City is dependent upon the efficient provision of facilities and services to maintain people's health and safety and to support economic, social and cultural activities. There should, therefore, be opportunity to provide for the development, maintenance and use of essential facilities and services, as long as they can meet, or do not significantly compromise, environmental standards. This includes standards to address the potential adverse effects that are specific to utilities and services, such as the impacts of transmission lines and sewage disposal systems. The underground installation of facilities and services will be</p>	<p>The proposed amendment to the explanatory text is efficient and effective as it provides greater guidance as to the essential services that should be located or designed in a manner that ensures that their continuing operation is not compromised in a flood event.</p>	<ul style="list-style-type: none"> • Utility operators will be provided with greater guidance as to which services should not be compromised by the flood hazard. • The community will benefit from the continuing operation of essential services during a flood event. 	<ul style="list-style-type: none"> • In retaining the status quo the placement of essential services in some inappropriate flood risk areas of the Mangaroa catchment can continue. • The resource consent process imposes a monetary cost on landowners and developers.

POLICIES	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>promoted where appropriate, in order to help avoid, remedy or mitigate adverse effects, especially on visual amenity. Where utilities are required to be sited above ground, the site or route selection process should seek to minimise adverse environmental effects.</p> <p>Subdivision may be required to provide for special facilities or activities (such as substations, transformer sites, pumping station sites, and roads). There are therefore subdivision standards in each zone which recognise the special subdivision requirements for utilities.</p> <p>Utilities can both be affected by flooding, and affect flood patterns. Therefore, it is appropriate that the location of utilities in flood prone areas is regulated (Chapter 33).</p> <p><u>Utilities (such as electricity transformers, water and wastewater pumping facilities and telecommunications facilities) should be located outside the Flood Hazard Area depicted on Planning Maps, to minimise the risk of their continuing operation being compromised during a flood event.</u></p>			
<p>Relevant objective: Objective 16.3.1 The sustainable management of physical infrastructure so that it can meet both the needs of today's community and the reasonably foreseeable needs of future generations.</p> <p>Appropriateness for achieving the objective: The proposed amendments to the explanatory text assists in achieving this objective by providing greater guidance as to the particular infrastructure services that should not be compromised in a flood event.</p>			

Evaluation of proposed rules and other methods for achieving the objectives

- 5.3 The overarching goal of the proposed changes to the District Plan rules is to ensure inappropriate subdivision and development are kept away from flood waters. Changes are proposed to the rules within the Earthworks & Vegetation Clearance, Utilities, Flooding & Fault Band Hazards, Hazardous Substances & Contaminants, and Definitions chapters. These are considered in the table below.
- 5.4 During the preparation of this plan change the following three broad options were considered:
- Option 1:** Do nothing (i.e. retain the existing Plan provisions).
 - Option 2:** Insert the new flooding information into the Plan by updating the Planning Maps to show the 1 in 100 year flood extent across the Hutt and Mangaroa Rivers, but retain existing activity status, standards and matters for consideration.
 - Option 3:** Insert the new flooding information into the Plan by updating the Planning Maps to show the Flood Hazard Area and depicting the 4 'sub-areas' of the river on separate hazard maps, in addition to refining the existing policy framework and amending the activity status and standards for activities occurring in the Flood Hazard Area to address the issues arising from earthworks, subdivision, inappropriate development, essential services and hazardous substances & contaminants in the Flood Hazard Area. Provide relevant definitions for clear interpretation of new terms.
(Option 3 is the preferred option).
- 5.5 The following table summarises the effectiveness, efficiency, costs and benefits for achieving the relevant objectives.

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>1. Status quo.</p>	<p>Limited</p> <ul style="list-style-type: none"> The principal District Plan objective pertaining to hazards seeks to address the issue of flood hazard through “<i>[t]he avoidance remedying or mitigation of the adverse effects of natural hazards on the environment</i>”. It is considered that, in light of the assessments undertaken by GWRC of the flooding and erosion risks posed by the Hutt and Mangaroa Rivers, currently this objective is not being effectively achieved. The current District Plan rules do not include the flooding hazard information compiled by GWRC in respect of the Mangaroa River. Currently subdivision within the 1:100 year flood extent is not addressed in the Plan, with reliance on section 106 of the RMA, this is not considered to be an efficient or effective method of articulating the relevant risks to potential subdividers. Currently erosion hazards caused by the Hutt and Mangaroa Rivers are not addressed in the Plan. The existing provisions are neither effective nor efficient insofar as the risks associated with erosion 	<ul style="list-style-type: none"> The District Plan currently provides some controls in the 1 in 100 year flood extent for the Hutt River. Avoids the need to implement changes in respect of the existing Hutt River 1 in 100 year flood extent. The existing rules and standards provide certainty for landowners and the community for activities occurring in the current 1 in 100 year flood extent for the Hutt River. 	<ul style="list-style-type: none"> In retaining the status quo development in some inappropriate flood risk areas could continue. Inappropriate subdivision and development within the flood hazard area can cause significant risk, including damage to property, danger to occupants, erosion and loss of land to the river, as well as causing adverse effects downstream of the site. Landowners with existing development that is susceptible to the flood hazard may not be aware of the flooding risk present on their land. This has implications for the safety of occupants and may pose a monetary cost if the property is not appropriately insured when a significant flood event occurs. There would be significant costs to Council if it chose not to implement the flood hazard information detailed in the HRFMP and MRFHA. Council is required by Section 31(1)(b) of the RMA to control any actual or

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	are not highlighted.		potential effects of the use, development, or protection of land, including for the purpose of the avoidance or mitigation of natural hazards. The flooding studies undertaken by GWRC represent the latest information and highlight the hazard posed by flooding of the Hutt and Mangaroa River. The Council would be unwise not to implement the studies.
<p>Appropriateness for achieving the objectives: To retain the status quo will not provide the benefits that the proposed Plan Change would provide, as specified in this report.</p> <p>Option 1 is accordingly not recommended.</p>			
<p>2. Insert the new flooding information into the District Plan by updating the Planning Maps but apply the current standards for the 1 in 100 year flood extent to the Flood Hazard Area without any amendments to existing activity status, standards and matters for consideration.</p>	<p>Limited</p> <p>The principal District Plan objective pertaining to hazards seeks to address the issue of flood hazard through “[t]he avoidance remedying or mitigation of the adverse effects of natural hazards on the environment”. It is considered that, in light of the assessments undertaken by GWRC of the flooding and erosion risks posed by the Hutt and Mangaroa Rivers, this objective would not be effectively achieved, due principally to the following matters:</p> <ul style="list-style-type: none"> • Subdivision within flood hazard area would continue to not be addressed in the Plan, with reliance on section 106 of the 	<ul style="list-style-type: none"> • The change would result in limited regulatory controls for the 1 in 100 year flood extent for the Hutt River and Mangaroa River, which may have perceived benefits to landowners wanting limited regulation. 	<ul style="list-style-type: none"> • To insert the spatial flood hazard information whilst retaining the current provisions would not include the erosion hazard information, nor would the river corridor, ponding area, or overlay path be depicted in the District Plan as distinct pieces of the overall flood hazard. Understanding the differing habits of the different parts of the river enables more targeted District Plan provisions and greater certainty for landowners regarding how a flood might affect their land.

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>RMA.</p> <ul style="list-style-type: none"> Erosion hazards caused by the Hutt and Mangaroa Rivers would not be addressed in the District Plan. Only selected information from the HRFMP and MRFHA would be incorporated into the Plan. This would result in risk to Council, as a significant amount of information would be omitted from the Plan. 		
<p>Appropriateness for achieving the objectives: To insert the spatial flood hazard information whilst retaining the current provisions will not provide the benefits that the proposed plan change would provide, as specified in this report.</p> <p>Option 2 is accordingly not recommended.</p>			
<p>3. Insert the new flooding information into the District Plan by updating the Planning Maps to show the Flood Hazard Area and depicting the 4 'sub-areas' of the river on separate hazard maps, amending the activity status and standards for activities occurring in the Flood Hazard Area to address the issues arising from earthworks, subdivision, inappropriate development, essential services and hazardous substances & contaminants in the Flood Hazard Area. In addition, provide relevant</p>	<p>Effective & Efficient</p> <ul style="list-style-type: none"> The proposed plan change alters the Planning Maps to show the flood extent, shown on the maps as the <i>Flood Hazard Area</i>. The most significant changes occur to the maps for the Mangaroa River, as the Plan does not currently have a flooding overlay for this area. More detailed maps, showing the different defined sub-areas (River Corridor, Overflow Path, Ponding Areas and Erosion Hazard Line) would be depicted on separate Hazard Maps that correspond directly to the Planning 	<p>The proposed plan change will provide a consistent and efficient approach to managing development in the flood and related erosion hazard areas due to the following reasons:</p> <ul style="list-style-type: none"> The proposed plan change has been written in such a way that any future information regarding flooding and erosion hazard risks in Upper Hutt (including information on other rivers) 	<ul style="list-style-type: none"> The proposed changes will result in more restrictive provisions for some activities within the Flood Hazard Area, thereby limiting development that can be undertaken as of right on some properties. In order for sites within the Flood Hazard Area to be developed, adequate measures to mitigate the flood risk would be required to be implemented and assessed through the resource consent process. This would incur a monetary cost to landowners and a risk that the

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
<p>definitions for clear interpretation.</p>	<p>Maps. This method of presenting the hazard information is considered to be effective and efficient as it disseminates all relevant information from the HRFMP and MRFHA in a clear and legible manner.</p> <ul style="list-style-type: none"> • Rule 23.7 of the Earthworks and Vegetation Clearance chapter of the Plan would be altered to ensure that earthworks³ could not be undertaken as a permitted activity within the Flood Hazard Area, and would require resource consent for a restricted discretionary activity. Criteria for whether earthworks will obstruct or divert the flow of flood water or result in erosion or inundation of the site or any other site will be added to rule 23.12. Earthworks in the Flood Hazard Area, including filling and excavation, will be assessed through the resource consent process and required to mitigate adverse effects. Earthworks undertaken by a territorial authority for community flood protection purposes (including gravel extraction in the Hutt River) would not require resource consent. • The current earthworks provisions do not address issues caused by 	<p>can be more easily inserted into the District Plan and displayed in a clear manner.</p> <ul style="list-style-type: none"> • The plan change addresses issues relating to flooding that the District Plan does not currently address, including subdivision, erosion hazard areas, earthworks and the construction of certain utilities. As a result, the District Plan would be consistent with the HRFMP and MRFHA and would position the District Plan to give effect to the PRPS. 	<p>resource consent application is declined.</p>

³ Earthworks are defined by the District Plan as...“the removal, relocation or depositing of soil, earth or rock from, to or within a site, including quarrying or mining and the deposition of clean fill, but excluding land disturbance resulting exclusively from domestic gardening and planting, cropping or drainage of land in connection with farming and forestry operations.”

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>earthworks in areas subject to flood hazards. Such earthworks can cause significant adverse effects due to alterations to natural flow paths, increased sedimentation and downstream effects.</p> <ul style="list-style-type: none"> • It is considered that introducing the ability for Council to assess earthworks within the flood hazard area through the resource consent process would ensure that appropriate controls are put in place to mitigate adverse effects. • Rule 33.1 of the Flooding and Fault Band Hazards chapter would be altered to ensure buildings, structures and subdivision within the Flood Hazard Area are appropriately located and designed. Exposing new buildings to the Flood Hazard Area without appropriate mitigation measures represents unwise floodplain management planning. Seeking alternative sites away from the flood hazard area would be encouraged if appropriate mitigation measures cannot be implemented. For developments where flood hazard effects can be mitigated, appropriate mitigation measures would be considered through the resource consent process. • The proposed changes would allow 		

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>construction of one accessory building⁴ with a floor area of 20m² or less per site within the Ponding Area to be undertaken as a permitted activity (subject to compliance with other existing standards such as setbacks from boundaries). This is more permissive than the current standards for the 1 in 100 year flood extent for the Hutt River, which requires resource consent for all buildings and structures within the floodplain. The proposed standard acknowledges that such structures are appropriate due to the nature of flood waters in the Ponding Area, the fact that accessory buildings are not habitable structures, and the restricted floor area would cause limited effects on the flow-path of flood waters within the Ponding Area.</p> <ul style="list-style-type: none"> • Subdivision within the Flood Hazard Area is not accounted for in the operative provisions and will now be provided for in Chapter 33. The proposed standards would see subdivision within the Ponding Area assessed as a discretionary activity resource consent, and subdivision within the River Corridor, Overflow Path and on the river-side of the Erosion Hazard Line assessed as a non- 		

⁴ Accessory building is defined by the District Plan as... "a building which is accessory to the main use of the site. On residential sites, this includes garages, carports, workshops, garden sheds, swimming pools, spa pools and glasshouses that are not used for commercial purposes other than home occupations. It also includes walls, fences and retaining walls defined as buildings".

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>complying activity. The respective activity statuses reflect the level of risk associated with subdividing (and developing) in the respective hazard sub-areas. For subdivision to occur in these areas it would need to be demonstrated that flooding effects can be avoided or mitigated (one of the arms of the 'gateway test' for non-complying activities) to ensure that the new allotment can be developed in a manner that does not expose future development to the flood hazard and does not adversely impact the passage of floodwaters, or alternatively it would need to be demonstrated that a proposal is consistent with relevant objectives and policies (the second arm of the 'gateway test' for non-complying activities).</p> <ul style="list-style-type: none"> • The introduction of a requirement for resource consent for subdivision within the Flood Hazard Area increases the District Plan's level of consistency with the HRFMP, MRFHA and the Proposed Regional Policy Statement. • Rule 30.1 is proposed to be amended to ensure transformers, water and wastewater pumping stations and telecommunications facilities (excluding lines and cables) are either placed outside of the flood hazard area, or assessed as a discretionary 		

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>activity resource consent to ensure that they are designed to withstand a flood event. During a flood event it is considered important that these services can continue to function, minimising the potential disruption to the City and emergency services.</p> <ul style="list-style-type: none"> • Rule 34.1 is proposed to be amended to ensure that the bulk storage of hazardous substances is either avoided in the Flood Hazard Area, or alternatively assessed through the resource consent process to ensure that the flood hazard effects are appropriately avoided or mitigated. This will ensure that the City's environmental quality is not compromised by the release of hazardous substances or contaminants during a flood event. • The definitions would be altered to include definitions of the different areas within the Flood Hazard Area; being the River Corridor, Ponding, Overflow Path and the Erosion Hazard Line. The impact of flooding on these areas differs and the definitions explain the specific nature of the flood hazard in these areas. The definitions are consistent with those detailed in the HRFMP and the MRFHA. • The definition of 'Building' would be altered to provide a greater level of 		

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>clarity to the current definition. A definition of 'structure' has been added. This definition has been taken from the RMA, but amended to fit into the District Plan.</p> <ul style="list-style-type: none"> • The proposed changes to the definitions are important in applying the proposed changes to the District Plan as they provide guidance on the correct interpretation of new terms to be introduced to the Plan. • The proposed changes would result in the inclusion of rules and standards that discourage inappropriate development or subdivision from occurring within the flood hazard area; this is the desired outcome of both the UHCC and GWRC. • The Mangaroa River flood extent is not currently included in the District Plan. The Mangaroa River area is largely comprised of rural-zoned land and the existing pattern of development is typically low density. In light of this, it is considered opportune to implement the proposed plan change in order to avoid development in areas at high risk. This is in line with the principles of the HRFMP and is consistent with the RPS and the proposed RPS. • The operative District Plan does not include information on the erosion 		

METHODS	EFFECTIVENESS & EFFICIENCY	BENEFITS	COSTS
	<p>hazards affecting the Hutt and Mangaroa Rivers. Inclusion of erosion hazard information in the Plan will increase public awareness of the risk of erosion caused by rivers and ensure that buildings and structures are appropriately located and designed.</p> <ul style="list-style-type: none"> • The proposed changes will strengthen existing District Plan provisions to appropriately manage the effects of flooding and increase the Plan's consistency with other relevant policy documents such as the RPS and PRPS. 		
<p>Appropriateness for achieving the objectives:</p> <p>The proposed new provisions ensure that subdivision and development within the Flood Hazard Area takes the flood risk into account; and either avoids or mitigates the flood risk. The proposed provisions are considered to be the most appropriate methods for achieving the relevant objectives.</p> <p>Option 3 is therefore recommended.</p>			

6.0 Incorporating the Proposed Provisions into the existing District Plan Structure

- 6.1 The District Plan currently presents rules and standards within five zone chapters and thirteen city-wide chapters, whereby the city-wide chapters are cross-referenced in the zone chapters. To avoid duplication of information and maintain consistency with the current District Plan structure it is considered most appropriate to insert the proposed rules and standards in the existing city-wide Chapter 33: Rules for Flooding and Fault Band Hazards, as the rules and standards would be applied across the zone chapters. Equally, changes to earthworks rules would occur within Chapter 23: Rules for Earthworks and Vegetation Clearance.
- 6.2 With regard to the spatial flood hazard area information, the option of showing the four map overlays (River Corridor, Overflow Path, Ponding Areas and Erosion Hazard Line) on the existing Planning Maps was considered, however displaying the information legibly presents significant challenges due to the amount of existing information presented on the current maps. It is considered that the most appropriate method of highlighting the flood hazard to plan-users is to depict a Flood Hazard Area on the existing Planning Maps to show the properties affected by flooding risk (similar to the existing 1 in 100 year flood extent). A separate set of Hazard Maps would depict the sub-areas (Ponding etc) to ensure that the information can be depicted as clearly as possible, and to avoid cluttering the existing Planning Maps. References alerting plan-users to the Hazard Maps would be included on each of the Planning Maps that contains a Flood Hazard Area overlay. This method of displaying the spatial information also provides the opportunity for further hazard information to be inserted into the Hazard Maps in the future and is thus considered the most appropriate method of displaying the flood hazard information, in the context of the current District Plan structure.

7.0 Conclusion

- 7.1 Proposed Plan Change 15 is a Council-initiated plan change which introduces within the Operative District Plan map overlays with associated objectives, policies, methods (including rules) and assessment criteria to appropriately manage subdivision and development within the identified Flood Hazard Areas of the Hutt and Mangaroa Rivers.
- 7.2 The purpose of the proposed plan change is to enable more appropriate management of land that is subject to flood hazards and seeks to implement the HRFMP and MRFHA whilst achieving consistency with the Operative and Proposed Regional Policy Statements.
- 7.3 In respect to Part 2 of the Resource Management Act 1991, there are no known matters of national importance (s6) or other matters (s7) relevant to the proposal. The plan change serves the purpose of the Act.
- 7.4 Three options were ultimately considered in respect of the proposed plan change – to take no action, to introduce the spatial flooding information to the Plan without amending the rules and standards, or to introduce the proposed changes. In accordance with the analysis required by section 32, the proposed changes are considered to be the most effective and efficient

method of achieving District Plan objectives in addition to meeting Council's obligations set out by the Resource Management Act 1991.

