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Report to the Hutt River Floodplain Management Advisory Committee
from Alistair Cross, Resource Planner, Flood Protection

Hutt River Floodplain Management Plan : Confirming Non-structural Measures

1. Purpose

- To provide the Advisory Committee with the non-structural principles, and expected outcomes describing the final suite of recommended non-structural measures.
- To seek a recommendation to the Landcare Committee from the Advisory Committee that the non-structural principles:
 - be adopted for inclusion in the Hutt River Floodplain Management Plan
 - provide the basis for non-structural measures to be implemented from July 2001

Noting that any further modifications to the principles or outcomes agreed by Non-structural Options Working Group will be formally notified to the Advisory Committee.

2. Background

2.1 Recommending Non-structural Measures for the HRFMP

This report details non-structural measures recommended for inclusion in the Hutt River Floodplain Management Plan. Principles are presented which provide the foundation for specific outcomes sought by the non-structural measures. The Advisory Committee needs to consider these principles and outcomes before recommending the proposed non-structural measures.

The principles and outcomes are interdependent. They conclude 18 months work, with input from Hutt City, Upper Hutt City and Wellington Regional Council officers, the Advisory Committee and the Public.

Attachments 1 and 2 detail the principles and corresponding outcomes respectively.

2.2 April 2000 Workshop

The 25 May Advisory Committee report recorded outcomes from the April workshop, which were critical to progressing the draft non-structural measures.

The advice received at the workshop and subsequent investigations have modified the non-structural measures. A summary of those investigations and subsequent modifications is presented in *Section 3* of this report.

2.3 Principles Guiding Non-structural Measures

A comprehensive suite of principles for proposed non-structural measures has been developed. The principles guide the way residual flood hazard risk in the Hutt Valley needs to be managed, ultimately leading to a more resilient community.

These principles provide the policy framework for the non-structural measures in the Hutt River Floodplain Management Plan. Non-structural measures will be implemented as:

- Hutt City and Upper Hutt City district plan policy and provisions
- voluntary action information and advice
- emergency management programmes and procedures

The principles' prime goals are emphasised in *Section 4*. The principles are included in *Principles for Non-structural Measures*, which forms **Attachment 1**.

2.4 Presenting Non-structural Measures Detail

As noted above, specific non-structural measures are guided by the principles which are supported by more detailed outcomes. The outcomes show:

- what the principles 'mean on the ground' for the upper catchment, river corridor and floodplain
- how the measures will be implemented

Section 5 of this report briefly summarises the way outcomes are presented. Outcomes in table form are covered in *Non-structural Measures Outcomes*, presented as **Attachment 2**.

2.5 Implementing Non-structural Measures

General responsibilities and timeframes for implementing non-structural measures are discussed in *Section 6*.

2.6 Flexibility for Agreed Non-structural Principles

Non-structural measures principles and related outcomes have been developed, modified and finalised relatively quickly. Additionally, final principles and outcomes developed are reasonably complex. Consequently, the Non-structural Working Group (NSOWG) may require flexibility to modify principles and outcomes during drafting of the Floodplain Management Plan.

The need for flexibility is expanded further in *Section 7*.

3. Measures Investigated Following April Workshop

3.1 Legal Opinion Sought – Measures are Viable

A legal opinion¹ confirmed that the proposed measures are viable and recommends:

- heavily restricting habitable buildings and subdivision on erosion prone land are reasonable
- providing compensation where land uses are heavily restricted would not be obligatory
- requiring consistent non-structural and structural protection standards is necessary
- balancing measures with effects on amenity values (e.g. visual, shading, noise, access) is required before selecting measures
- applying consistent restrictions across all intensive land uses is warranted

3.2 Regulatory Measures are Criteria and Zone-based Mix²

The mixed system adopted for regulatory measures centres strongly on the criteria-based approach. That approach lessens duplication, and promotes managing activities based on flood hazard effects rather than prescribing solutions. Some zone-based measures remain where the strength of controls relies on existing land use zoning in the Hutt Valley; they mainly represent policy recommending against new intensive land uses in unprotected areas.

3.3 Erosion Hazard Areas Measures Remain – with Flexibility Option

Measures proposing an absolute restriction on habitable buildings in erosion hazard areas remain, with an option to allow leeway for some development if adequate erosion protection is provided.

¹ Supplied by John Tizard of Oakley Moran.

² A zoned-based approach groups land uses by their general zone, for example: industrial, residential and commercial zone activities. A criteria-based approach focuses on general activities regardless of the land use zone, and applies broad criteria to assess environmental effects.

It is technically possible for land owners or developers to provide erosion protection enabling building in erosion hazard areas. Allowing flexibility avoids prohibiting activities. However, there are many reasons why building in erosion hazard areas is not appropriate including:

- generating a false security about the flood hazard because severe flow effects in erosion hazard areas are not reduced
- creating an additional and significant hazard, which may compromise emergency services
- requiring stronger river alignment control in undeveloped areas
- creating significant issues for ongoing maintenance
- placing pressure on resources to repair damaged protection following
- should the community bear the subsequent costs to maintain the protections
- allowing solutions for land owners to protect habitable buildings is not very realistic due to excessive costs.

In the end, opening erosion hazard areas to new development is not wise floodplain management planning.

A recommendation from the Advisory Committee on the preferred measure is required before the Floodplain Management Plan document is completed.

3.4 Measures are Less Prescriptive and More Flexible

Modified measures now allow land owners and developers greater flexibility to propose flood mitigation solutions.

3.5 Measures are More Balanced and Justified³

Measures are now more balanced and better justified because:

- legal advice has generally moderated measures making them fairer
- a stronger risk-based approach, rather than applying one flood standard, treats land use activities more fairly also
- developing voluntary actions has enabled the suitability of regulatory methods to be tested
- assessing likely impacts on amenity values reveals that adverse visual, noise, access and general amenity and perception effects, are not likely to be significant

A basic assessment of amenity value impacts involved on-site inspection by officers of each council. Known 1900 and 2300 flood levels were considered at each property to gain a general feel for the likely effects upon redevelopment.

³ Those justifications are provided in *Non-structural Measures Outcomes* tables – **Attachment 2**.

4. **Highlighting Principles Supporting Measures**

The non-structural measures principles are geared to improve the community's resilience to flooding by:

- making sure the flood protection system is not compromised by development
- discouraging certain new land uses in the river corridor
- encouraging more intensive land uses to seek alternative sites
- allowing flexible mitigation solutions
- providing the community with advice and information so it can be better equipped to manage flooding
- ensuring emergency management programmes and procedures are comprehensive

The principles affect the way people will live with and manage the flood hazard. The more far-reaching principles are summarised below, relating to the wider principles set included in **Attachment 1**.

4.1 **Principles for Regulatory Methods**

Habitable Buildings – Avoiding Erosion Hazard Areas

Constructing habitable buildings is not desirable in erosion hazard areas. New and redeveloped habitable buildings in remaining unprotected locations need to withstand the effects of a 1900 cumec event in developed areas, and 2300 for greenfield sites.

Accessory Buildings and Ancillary Structures – Protecting Flood Defences

These buildings would be required to avoid adverse effects on flood protection structures. Siting away from erosion hazard areas and flow paths will be strongly encouraged.

All Other Buildings – Considering Community Reliance

New buildings in unprotected developed and greenfield areas would need to mitigate 1900 and 2300 flood effects (respectively) if the community is likely to be strongly reliant on the associated building function.

Planning buildings sited adjacent to narrative erosion areas may require erosion protection to be provided and maintained by land owners and developers. However, practical difficulties are associated with funding, providing and maintaining erosion protection.

Subdivision – Avoiding Erosion Hazard Areas

Subdividing land for habitable buildings in erosion hazard areas would not be permitted. Further, subdivision that exposes people and assets to increased flood risk would be strongly discouraged.

Earthworks – Protecting Flood Defences

Earthworks would be required to avoid adverse effects on flood protection works and flood behaviour.

Hazardous Substances – Securing Stores

Securing stores of hazardous substances in unprotected areas would be necessary. The relevant standard is the 1900 flood event.

Critical Facilities – Managing Effects in Erosion Prone Areas

Healthcare facilities, emergency services and key network utility facilities sited in unprotected areas would be required to operate in a 2800 cumec event. Restrictions on healthcare facilities place stronger requirements on in-patient facilities than out-patient services in all flood prone areas.

New Property Titles – Tagging Flood Hazard Information

1900 and 2300 cumec flood information would be attached to new property titles in unprotected developed and greenfield areas (respectively).

Transitional Measures – Accounting for Timing of Structural Works

Transitional measures apply during the time structural measures are being constructed. Recommended transitional measures include:

- tagging new property titles, and new and significant redeveloped buildings
- placing a transitional erosion hazard line at Belmont
- promoting emergency management in areas which are receiving much improved structural protection.

4.2 Principles for Non-regulatory Methods

Non-regulatory measures are represented by voluntary actions. Voluntary actions, referred to by the principles, include information on the flooding hazard nature and extent, and advice on the ways to manage flooding.

The principles promote:

- WRC provide technical information to Councils
- UHCC and HCC as primary providers of information and advice to the community through LIMS and PIMS, and brochures targeting local areas, and utility and service agencies.

4.3 Principles for Emergency Management Programmes and Procedures

The principles support comprehensive emergency management for flooding. They identify opportunities to enhance existing measures, and provide a clear link to land use voluntary actions.

Methods already identified to enhance existing measures include:

- covering extreme flood events
- considering time-frames to complete structural works
- providing simple, visual, accurate and accessible information
- prioritising communities at risk
- modifying information according to varying risk across the floodplain
- improving connections with news media
- enhancing links with emergency services

The principles also promote regular programmes and procedures reviews to ensure ongoing, comprehensive and relevant coverage.

5. Presenting Non-structural Measures Detail

The principles highlight specific modifications to the non-structural measures, represented in the outcomes tables in **Attachment 2**.

The land use measures tables for the River Corridor and Floodplain are considerably modified. The tables identify measures relating to general activities rather than specific zone-based groups previously shown. Mitigation solutions are also represented more generally, rather than as prescriptive options.

While the outcomes tables presents reasonable detail, more work is required to develop definitions, effects thresholds and assessment criteria. They will be developed from July 2001 as provisions are formed for district plan changes.

6. Implementing Measures : Looking Ahead

6.1 When Implementation Commences

Implementing non-structural measures commences in July 2001 following the release of the Floodplain Management Plan. Upper Hutt City and Hutt City Councils are the primary implementers, although specific timing and sharing of responsibilities requires further discussion and agreement.

6.2 Land Use Regulatory Measures

Land use regulatory measures will be implemented through changes to the Hutt City and Upper Hutt City district plans. The plan change process is an independent statutory process under the Resource Management Act 1991. As a statutory process, it is difficult to predict when a plan change would be completed. However, a plan change taking several years to conclude is unrealistic.

Both city councils will be the drivers of the plan change process. However, the Regional Council should have an active role helping to form plan provisions and supporting the councils in consultation, under the city councils directions.

6.3 Land Use Voluntary Actions

Preparations for informing and advising the community can commence immediately following completion of the floodplain management plan. The Regional Council would play a support role to the city councils by providing an advanced form of technical flood hazard information. The Regional Council would also produce brochures describing localised floodplain management measures, which support the Plan document.

The general extent of information and advice needed is understood, but detail on how information will be publicised is still required.

6.4 Emergency Management Programmes and Procedures

The city councils are primarily responsible for implementing emergency management measures. The Regional Council can play a co-ordinating role in developing enhanced measures. That role will encourage a consistent base approach to programmes and procedures, while allowing each city council to drive the make-up of their own measures.

Enhancing programmes and procedures requires all Councils to consider:

- relevant options
- time-frames for implementing enhancements
- funding and resourcing requirements

7. Requiring Flexibility to Modify Principles and Outcomes

Flexibility is required to modify endorsed principles and outcomes during the drafting of the Hutt Floodplain Management Plan.

Flexibility would be used to:

- re-examine principles and intended outcomes where measures intended by the NSOWG had not been appropriately addressed
- analyse specifics of principles as further detail is developed during Plan drafting

Any amendment required is likely to be reasonably minor, and would be reported to the HRFMAC for recommendation to Landcare Committee.

Applied in the right way, the latitude requested reflects the need for ongoing flexibility. Non-structural measures will be developed in greater detail through the Plan drafting and implementation phases, and related public involvement is likely to further modify them. Flexibility will also provide the three councils the necessary forum to continue exchanging ideas and developing sound non-structural solutions.

8. Communication

Community involvement is set to continue through July with meetings involving the Alicetown Residents Association and utility agencies, through our Technical Liaison Group.

The community will be consulted early in 2001, as non-structural principles take on a stronger policy focus in the draft Floodplain Management Plan.

Implementing the Plan following June 2001 will require community involvement developing emergency management programmes and procedures. Consultation is also part of the statutory process for making changes to a district plan. However, it is worth noting that the City Councils are likely to direct community involvement during implementation, with WRC playing a supporting role.

9. Recommendations

- (1) *That the report be received and the contents noted.*
- (2) *That the Advisory Committee recommends to the Landcare Committee that the proposed non-structural principles:*
 - *be adopted for inclusion in the Hutt River Floodplain Management Plan.*
 - *provide the framework for non-structural measures to be implemented from July 2001.*

Noting that the Non-structural Options Working Group requires flexibility to recommend modifying the principles and outcomes, as further non-structural measures detail is developed during Hutt River Floodplain Management Plan drafting.

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Attachment 1 : Principles for Non-structural Measures

Attachment 2 : Non-structural Measures Outcomes