

MEMO

TO Graeme Campbell
FROM Sharyn Westlake
DATE 17 February 2011
FILE NUMBER N/04/09/01

Wainuiomata River Flood and Erosion Hazard Information

As requested, this memo is to inform Hutt City CIS about the Wainuiomata Flood and Erosion Hazard information, and Greater Wellington's approach to floodplain management planning

1. Background

Decisions about floodplain and flood risk management need to be in accordance with national, regional and local legislation, regulations and policy and they also need to align with best practice in floodplain management.

1.1 Legislation¹

Seven management statutes cover a broad range of private property and public good issues relating to land development and management, land use controls, flood risk management and its funding, flood emergency response and recovery, and flood protection insurance. Each of the statutes performs a distinct and important role in managing flood risk and provides a range of legislative mechanisms to enable effective flood management across local and central government. The statutes are:

- Resource Management Act 1991;
- Building Act 2004 (and Building Code 1992)
- Local Government Act 2002
- Land Drainage Act 1908
- Soil Conservation and Rivers Control Act 1941

¹ McSweeney, John. 'Overview of Flood Management Legislation in New Zealand', Johnson McSweeney Ltd for Ministry for the Environment, November 2006

- Rivers Board Act 1908
- Civil Defence Emergency Management Act 2002

A number of other statutes also influence to a lesser degree flood risk management; these are:

- Public Works Act 1981
- Local Government Official Information and Meetings Act 1987
- Earthquake Commission Act 1993
- Environment Act 1986
- Local Government (Rating) Act 2002

1.2 Purpose of the 'Flood Risk Management' Statutes²

The statutes (listed above) allow for a wide range of approaches to managing flood risk. These relate to:

1. *Hazard Control* measures such as the provision of stopbanks, channel maintenance and clearance, dams, etc. The Local Government Act 2002, the Soil Conservation and Rivers Control Act 1941, and the Rivers Board Act 1908 are the main acts which allow for these works to be undertaken. The Land Drainage Act 1908 and a number of localised drainage acts allow water logged land to be drained for food production and urban purposes. The drainage schemes also contribute to modifying flood events.
2. *Flooding information and education* is provided by a number of agencies. This includes scientific and practical information about flooding and ways to minimise the impacts of flood events. Specific mechanisms such as land information memoranda (LIMs') pursuant to the Local Government Official Information and Meetings Act 1987, provide the means by which members of the public can access site specific flooding information from territorial authorities (where this is available).
3. *Flood hazard preparedness, response and recovery* measures are authorised principally under the Civil Defence and Emergency Management Act 2002. It provides the legislative framework for national, regional and local communities to prepare for, and respond to, flooding.

² McSweeney, John. 'Overview of Flood Management Legislation in New Zealand', Johnson McSweeney Ltd for Ministry for the Environment, November 2006

4. *Flood loss insurance and financial assistance* is principally provided by the Earthquake Commission under the authority of the Earthquake Commission Act 1993. Government can also provide disaster relief funding to assist local communities after large scale flood (and natural disaster) events.

1.3 Floodplain Management Plans as Non-statutory Plans³

The Regional Council's floodplain management plans and strategies are non-statutory plans. This means that its policies and flood mitigation methods have no legal standing as regulations. However, they will have considerable weight in any decision-making for two main reasons:

1. The public process followed to form floodplain management plans.
2. The Council's responsibility for flood protection in the region.

Regional Policy Statement – sets regional approach

As part of its responsibilities under the Resource Management Act 1991, the Regional Council has a Regional Policy Statement which provides an overview of resource management issues, and sets objectives, policies and methods for managing natural and physical resources.

It states that the Regional Council is principally responsible for setting policies to manage the flooding hazard. It also assigns primary responsibility to the district and city councils to provide rules for managing the effects of natural hazards on land. This provides the basis for the city councils to develop non-structural land use planning regulations.

The Regional Council's role is not confined to setting policy. It also includes actions that the Council can take to manage floods. These responsibilities highlighted in the Regional Policy Statement support implementing floodplain management planning measures. They include

- identifying the risks of flooding
- assessing the impacts of flooding
- constructing structural measures
- providing information on the flood hazard.

Regional and District Plans – provide policy and methods

The Regional Council and the Upper Hutt and Hutt City Councils also prepare regional and district plans, which must not be inconsistent with the Regional Policy Statement. These plans help the councils to carry out their resource management functions, including managing natural hazards and

³ Hutt River Floodplain Management Plan. Greater Wellington Regional Council, October 2001

their associated effects. Objectives, policies and methods to manage flood hazards are developed to deal with the full range of floodplain management planning issues.

The Regional Freshwater Plan supports the Regional Council's development of floodplain management plans, and provides guidance for managing the development of flood prone areas.

Soil Conservation and Rivers Control Act 1941: Doing Flood Protection Works

The Soil Conservation and Rivers Control Act 1941 gives the Regional Council the mandate to protect communities from flooding using the most appropriate methods⁴. This law also provides the Regional Council with the authority to undertake physical works (including structural measures) to mitigate erosion damage and protect property from flooding. This means that it is up to the Regional Council and the local community to determine those rivers requiring most attention and the nature of the works required. In the Wellington region, only rivers and larger streams of "regional significance" are managed by the Regional Council. City and district councils handle smaller urban streams and stormwater channels.

1.4 Achieving Flood Risk Management - Greater Wellington's Approach

Greater Wellington's Flood Protection group works with the region's communities to manage flood risk from the region's rivers and streams.

Our approach is to understand the processes affecting a river/stream and floodplain within catchment and to provide a co-ordinated response through our floodplain management plans (in partnership with the community) to reduce the impact of flooding.

Greater Wellington's policy

Our policy is that new development is avoided in areas of flood risk. Where development takes place in areas with these risks (including infill development) we recommend that residual risk is recognised.

Residual risk is the risk resulting from occurrence of a flood that is larger than the one the flood risk management measures are designed for. This is also known as a greater than design period event.

What is a design period event?

A design period event comes from a design standard - this is the size or return period to which flood risk management measures are built to contain.

⁴ This Act's mandate enabling regional councils to carry out wider floodplain management planning has been largely superseded by the provisions of the Resource Management Act 1991.

For example, a 100-year return period flood is an event that is predicted to happen (or be exceeded) on average once in 100 years. This does not mean that if such a flood occurs it will not re-occur for another 100 years. It means that it has a 1% chance (1 in 100) of happening in any one year. The greater the number of years identified, the more intense the flood will be.

During development of a floodplain management plan, the 100-year return period flood event may be used as the design period event for developing the measures used to manage the flood risk. In some areas like in the Hutt catchment a larger design period event has been used (1 in 440-year return period).

1.5 What is floodplain management planning?

Floodplain management planning is a process that results in a long-term strategy for managing flood risk, helping improve the security and quality of life of present and future generations living in a floodplain. It better prepares them for coping with a flood when it occurs, and aims to ensure that any future development considers flood risk. A floodplain management plan (FMP) emphasises the need to 'keep people away from the river' rather than 'the river away from people'.

The Floodplain Management Planning Process is described in Appendix 1.

1.6 The Wainuiomata River Flood and Erosion Hazard Assessment

The Wainuiomata River Flood Hazard Assessment was completed in 2000, in recognition of the increased flood hazard that was considered likely to result from further development of the lower Wainuiomata River floodplain, through the subdivision of rural properties into smaller rural-residential allotments. The reduction in minimum size allotment in the rural area from 40ha to 15 increased the pressure on floodplain development and the potential for creating flood risks with consequent damages.

The report presented to the Greater Wellington Landcare Committee on completion of the assessment is presented in Appendix 2.

Note that in terms of the Floodplain Management Planning process given in Appendix 1, completion of the Flood Hazard Assessment fits with Phase 1 of this process.

Use of Flood Hazard Information

The results of the Wainuiomata Flood Hazard Assessment are used for planning and control of future development on the Wainuiomata River floodplain, especially when assessing specific development proposals on the Wainuiomata River floodplain. In guiding the location of development within the rural section of the Wainuiomata River Floodplain, it has provided useful information for proactively saving flood damages for future development.

Subdivision of rural land on the floodplain presents the greatest potential impact and the likely increased demand for river crossing points is of particular concern. As Greater Wellington does not currently, and has no future intent to put in place flood and erosion protection works in the rural section of the Wainuiomata River, channel migration can be expected to continue in the future.

Accuracy of the Information and Site Specific Application

Greater Wellington and Hutt City Council have endeavoured to clarify that the flood and erosion hazard information is based on surveyed cross sections and limited topographical information (through the Hutt City Council LIM information) and also that the flood depths shown on the map should be interpreted as indicative and actual water depths will depend on the local topography.

The flood hazard for the rural section of the Wainuiomata River was analysed in relation to both the inundation risk and potential channel migration (erosion). The inundation risk is an immediate, or current, risk that could happen at any time, whereas the identified erosion risk provides a reasonable allowance for possible future migration of the river channel.

The hydraulic modelling for the rural reach of the Wainuiomata River was carried out using 74 surveyed cross sections in the rural reach, spaced at approximately 300m intervals. A digital terrain model (DTM) was constructed for the whole Wainuiomata River and Floodplain. GIS (Geographic Information System) software was then used to overlay the simulated water levels on top of the DTM. The corresponding DTM elevations were subtracted from the flood levels to produce depth of flooding. These calculated depths were re-plotted to produce flood maps.

The DTM was created from 1999 Survey data, and the Wainuiomata Township Contour Maps (A1-6867/2 RC). Breaklines were used to further define continuous features such as the riverbed and banks, some terraces, the Coast Rd, and the clear line between the valley edge and hill base.

As stated in the LIM, flood mapping results are based on limited survey information. As above, ground level information in the rural reach is only available at cross-sections spaced every 300m. Using breaklines to further define some features in the floodplain enhances this information. However, it must be recognised that the flood maps can only provide a general guide to flood extent and depth, and are not an absolute representation of the flood hazard. This is made clear in the LIM and on the data sheets.

1.7 Dissemination of Flood Hazard Information

Greater Wellington's policies related to the assessment and dissemination of flood hazard information is set out in Appendix 3, Paper to Greater Wellington's Landcare Committee dated 10 November 2006.

In addition to initial discussions carried out with the community, individual discussions have been had with many community members who have been considering building work, subdividing, building bridges or carrying out other works since 2000 by Greater Wellington Flood Protection Department officers. Furthermore, the Wainuiomata River Flood Hazard report was handed to Hutt City Council in 2001 and been the subject of officer discussions regarding use of the information on a number of occasions since then. It has also been discussed with the Wainuiomata Community Board.

Sharyn Westlake
Team Leader Strategy and Technical Support
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MEMO

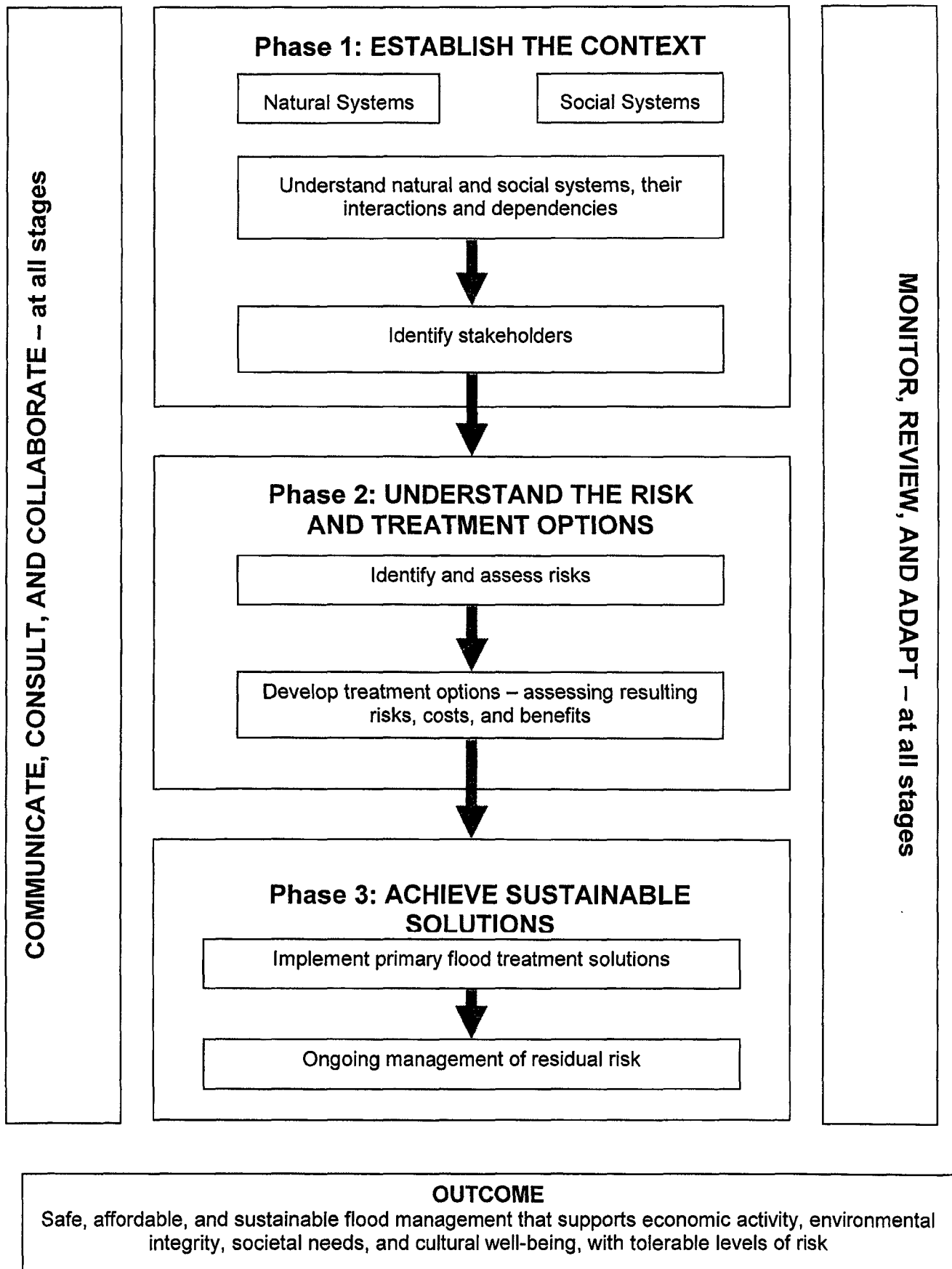
Appendix 1: The Floodplain Management Planning Process

The process for developing the floodplain management plan is shown in Figure 1, and involves three steps:

- Phase 1: Establish the context
- Phase 2: Understand the risk and treatment options
- Phase 3: Achieve sustainable solutions.

To a level of detail appropriate to the location and circumstances of the community.

Figure 1: The Floodplain Management Planning Process (adapted from NZS 9401:2008)



The outcome of the floodplain management planning process is a document that guides how a catchment should be managed to achieve the following;

- Minimising risks to life, health and safety
- Reducing severity of flood damage, and coming up with options to manage the flood risk
- Promoting sustainable use of flood prone land
- Promoting sustainable development of the wider catchment.

The outcomes above are achieved by;

- Using planning and community preparedness to ensure sustainable land use
- Looking at options to reduce the flood risk

In general, a FMP provides long-term management strategy (e.g. for 40 years), and provides guidance to those involved in making decisions about the management of the river and floodplain.

Community involvement in floodplain management

To be effective, the floodplain management planning process requires the active involvement of the people who live and work on the floodplain. This is the same whether developing a floodplain management plan for urban areas (such as the Hutt Valley or the Kapiti Coast), or for rural areas (such as the Wairarapa).

Each plan reflects the values, aims and responsibilities of those who would be affected by flood risk in a particular catchment. The community is then involved in making decisions on the level of risk they are prepared to live with, identifying ways to reduce the effects of flooding or erosion and deciding how to manage the residual risk.

Phase 1: Establish the Context

To develop a floodplain management plan, Greater Wellington must first research information about the river and its floodplain. This is done by:

1. Studying rainfall and runoff, and identifying catchment conditions that may lead to increased run-off and possible flooding
2. Assessing the flood and erosion hazard (describing the hazard)
3. Reviewing existing flood and erosion hazard management
4. Considering present and future uses of the floodplain, such as housing, recreational, commercial, or agricultural development

5. Considering the impact on environmental factors - such as the habitats and ecosystems that exist on the floodplain and in the corresponding river systems
6. Identifying landscape, recreational and community values.
7. Identify potential damages on the floodplain

This information is put together in a 'flood and erosion hazard assessment' which becomes a summary document and completes Phase 1 of the floodplain management planning process.

Phase 2: Understand the Risk and Treatment Options

Identify and assess risks

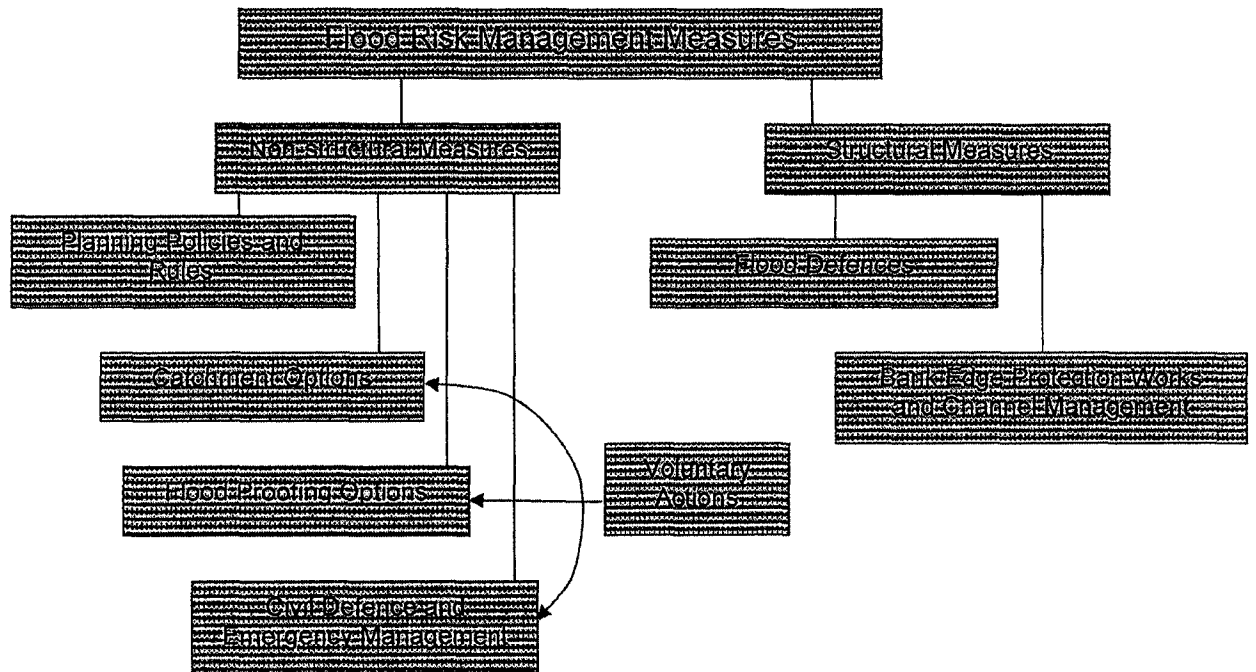
In terms of floodplain management planning, flood risk management measures fall into two broad categories, non-structural and structural, as shown in Figure 2 below.

Each flood risk management measure needs to consider economic, environmental, cultural and social impacts.

The combination of structural and non-structural measures for managing flood risk is influenced by:

- Existing Risk. This is a measure how developed the floodplain is e.g. if there is an existing community living there; and
- Whether the river's natural pathway has already been confined by development.

Figure 2: Flood risk management measures



Non-structural measures

Non-structural measures address flood risk by firstly helping communities to avoid it. Rather than building structures to keep the river away from people they focus on keeping people away from floodwaters and helping the community cope when flooding occurs.

Non-structural measures are used to influence the way:

- Waterways and land are used;
- How buildings are constructed; and
- They also seek to improve the community's resilience to flooding.

These measures are implemented through encouraging voluntary actions and through enforcing planning policies and rules.

Non-structural measures are considered the most cost-effective flood risk management approach because they can prevent considerable flood damages at little cost to the wider community. They are vital when a flood occurs that is larger than what the flood risk management measures are designed

for (an over-design event). An over-design event may expose formerly protected communities to the full forces of a flood.

Planning Options

Planning options are regulatory measures which raise community awareness of the risks and realities of living on a floodplain. These alert people to areas subject to flood risk and encourage appropriate land-use in flood and erosion hazard prone areas. Planning options may include zoning and cover activities such as construction, earthworks. Examples include:

- set-backs from watercourses
- requiring floor-level controls
- restricting subdivision and development in floodable or erosion hazard areas
- encouraging sustainable development that will not increase flood water to watercourses e.g. stormwater run-off controls

Catchment Options

Catchment management options include measures such as reforestation to reduce rain run-off and wetland restoration to absorb floodwaters. Additionally, swale drains, rain gardens, and detention storage in public parks or sport fields may be used to reduce the amount of water that may reach waterways in a flood. These measures work by holding water in an area, stopping it getting into the stream or river as quickly. They are of great benefit in smaller events and they will also help to reduce long term damage effects after larger events.

Flood-Proofing Options

Flood-proofing options include house-raising and flood-proofing at-risk properties. These are an option for people who own flood affected properties. They look at addressing the impact of a flood by reducing the potential for damage such as lifting electrical circuits, installing tiles instead of carpets in floodable rooms, or replacing under floor vents with ones that can be closed.

Civil Defence and Emergency Management

Civil Defence and Emergency Management is about encouraging emergency preparedness in the community, and providing flood warnings. These options are most often used to cover the 'what if?' situations, but are equally useful to have ready for those who live in a floodable property. They are about knowing what people should do when a flood happens, and having a plan ready to put in action. A plan may include making sure people can move precious items upstairs easily to prevent them getting damaged, to making sure they have an escape plan if things are getting dangerous.

Non-structural measures cannot prevent flooding, but they can reduce the risk associated with flood events and help limit people from becoming affected by flooding. Such options are adaptable, and implemented through district plan processes and voluntary measures.

Structural measures

Structural measures are the physical flood risk management structures designed to help keep flooding away from existing communities and development.

Structural Works

Flood defences such as stopbanks, floodwalls and pumping stations address the consequence of flooding up to their design period event. Sometimes a larger than design flood may happen, or climate change may occur faster than allowed for meaning that they become difficult to upgrade to a greater design period event standards.

Channel Management

Active channel management measures include bed and beach re-contouring and gravel extraction. They are used to reduce the opportunity for the river to erode its banks, reducing potential erosion hazard and may also prevent damage to structural works.

Upgrading bridges or other structural constraints for the watercourse will also improve flood capacity and avoid the risk of debris dams forming (logs and other obstructions catching against the structures).

Bank Edge Protection Works

Rock linings, vegetation buffers and groynes are bank-edge works and river berms which are used to reduce erosion hazard and maintain the position of the river channel.

Recent research (Waikanae Floodplain Management Plan Review (2010) shows in many cases construction of flood defences such as stopbanks has not significantly reduced potential flood damage because additional development has continued behind the stopbank, and this development remains vulnerable to residual risk if the design period event of the stopbank is exceeded.

Phase 3: Achieve Sustainable Solutions

Once a number of options have been identified, combinations of non-structural and structural measures for managing the flood risk are usually possible. These should look at managing the risk over the full flood risk spectrum i.e. from the Annual Event to the Extreme Event. Greater Wellington, works with the community to select some of the combination of options for more detailed study. A preferred option is chosen after looking at non-structural options, the cost of any construction work, the level of flood risk that results, and the social and environmental effects. This forms the basis of the final floodplain management plan.



Appendix 2 to Attachment 2
To Report 11.111

caring about you & your environment

Report 00.593

4 August 2000

File: N/4/11/4

Report to the Landcare Committee
from Phillip Purves, Senior Engineer, Flood Protection Group

Wainuiomata River Flood Hazard Assessment

1. Purpose

To advise the Landcare Committee of the outcome of the Wainuiomata River Flood Hazard Assessment.

2. Background

For many years now the Flood Protection Group has recognised the increased flood hazard that will result from further development of the lower Wainuiomata River floodplain, through the subdivision of rural properties into smaller rural-residential allotments.

The minimum size allotment in the rural area had previously been 40ha but the Hutt City Council's Proposed District Plan allows rural allotments down to 15ha. This reduction in minimum area has increased the pressure on floodplain development and the potential for creating flood hazards with consequent damages.

The Wainuiomata River Flood Hazard Assessment was accordingly included in the programme of floodplain investigations, to follow completion of the Waiwhetu Stream Management Plan in 1996/97. Increased demands from other investigation work saw a late start in 1997/98; but the programmed hydrology component was completed that year. Then, in order to allow for the accelerated Hutt River Floodplain Management Plan, the second stage of the Wainuiomata River Floodplain investigations were extended over two years, with completion due in June 2000. The work was completed, and a summary report produced, within the original total budget of \$159,400.

3. **Floodplain Characteristics**

The Wainuiomata floodplain can be divided into two distinct parts. The urban section is largely protected by stopbanking and the river is confined to its current course. The WRC maintains the channel to ensure the integrity of the flood protection works and the hydraulic model has generally confirmed the adequacy of the flood defence design.

The rural section is largely undeveloped and the river channel is free to move within the wider floodplain. There are no river control works, other than isolated protection works where the Coast Road is threatened by erosion. In one location a realignment of the river channel was carried out to relieve that threat.

4. **Flood Hazard Assessment**

The flood hazard assessment covers the main channel of the Wainuiomata River from upstream of the township (just above the confluence with the Wainuiomata Stream) to the mouth. Only minor flooding of residential land has been identified in the urban section and recommendations have been made for more detailed investigations before any remedial work is carried out.

The flood hazard prediction for the rural section of the Wainuiomata River Floodplain has provided the most useful information for proactively saving flood damages for future development. The rural flood hazard was analysed in relation to both the inundation risk and potential channel migration (erosion). The inundation risk is an immediate, or current, risk that could happen at any time, whereas the identified erosion risk provides a reasonable allowance for possible future migration of the river channel.

The summary report includes flood hazard maps that show the predicted extent of flooding in a 100 year return period flood event, including a shaded range of flood depths. These maps also delineate areas on the floodplain where buildings could be subject to structural damage, in a flood event of this magnitude, and areas where development could be subject to erosion due to possible channel migration in the future.

5. **Use of Flood Hazard Information**

It is intended to provide the Hutt City Council (HCC) with the results of the Wainuiomata Flood Hazard Assessment so that the hazard information can be used for planning and control of future development on the Wainuiomata River floodplain. The Flood Protection Group intends to continue working with the HCC to ensure that the information is used most effectively in whatever way the HCC wants to apply it. It is possible that the HCC could implement specific planning controls in its District Plan, but it is more likely that the flood hazard information will simply be taken into account when assessing specific development proposals on the Wainuiomata River floodplain.

Subdivision of rural land on the floodplain presents the greatest potential impact and the likely increased demand for river crossing points is of particular concern. The summary report has identified the intention of the WRC not to manage or control the rural section of the Wainuiomata River, so that channel migration can be expected to continue in the future.

This potential migration could have a significant effect on river crossing points and it will be likely that these should continue to be fords, rather than bridges, except where the crossing point is located on a relatively stable reach. The Flood Protection Group will be able to assist the HCC in identifying acceptable bridge crossing locations.

There may be a demand for filling on the floodplain (outside of the erosion risk areas) in order to achieve sufficiently elevated sites for development. If this demand were to become significant then the Flood Protection Group would expect to carry out further analysis on the ultimate effects of mass filling on flood level predictions, particularly in relation to the loss of floodplain storage. The current flood hazard assessment is, however, considered to provide a good level of information for the control of floodplain development for the immediate future.

6. Community Connection

The Flood Protection Group consulted with the landowners on the Wainuiomata River floodplain at the time when the cross-section survey was being undertaken, in preparation for the hydraulic modelling component of the study. Discussions with the HCC will be needed to decide on how the community should be advised on the results of the investigations. The Flood Protection Group would expect to participate fully in the consultation.

7. Recommendations

That the Landcare Committee:

- (1) *Receive the report and note the findings of the Wainuiomata Flood Hazard Assessment study.*
- (2) *Note that the Wainuiomata Flood Hazard Assessment summary report will be referred to the Hutt City Council.*

Report prepared by:

Approved for submission:

PHILLIP PURVES
Senior Engineer

BRENDAN PAUL
Manager, Flood Protection (Strategy and Assets)

ANDREW ANNAKIN
Divisional Manager, Landcare



greater WELLINGTON
REGIONAL COUNCIL

| | |
|-----------|---------------------------------|
| Report | 06.664 |
| Date | 10 November 2006 |
| File | N/50/01/19 |
| Committee | Landcare |
| Author | Phillip Purves, Senior Engineer |

Dissemination of flood hazard information

1. Purpose

To advise the Committee of the Council's policies related to the assessment and dissemination of flood hazard information.

2. Significance of the decision

The matters for decision in this report **do not** trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the Local Government Act 2002.

3. Background

At its meeting on 22 June 2006 the Landcare Committee received a report on the Mangaroa River Flood Hazard Assessment, which advised that a copy of the Summary Report document for that study was to be forwarded to the Upper Hutt City Council. In their discussion on the results of the flood hazard assessment, the committee members requested that they be formally advised of the Council's policy for ensuring that such flood hazard information is appropriately disseminated to the local territorial authorities involved, their communities and directly affected landowners.

4. Regional policy statement

4.1 Policies

The 1995 Regional Policy Statement (RPS) provides the basis for identifying, assessing and informing the communities of the region on flooding, within the wider *Natural Hazards* context where flooding and earthquakes are identified as the hazards with the greatest potential to cause adverse effects in this region. The primary policy in the Natural Hazards chapter of the RPS in this regard is *Policy 1*, which is:

To ensure that there is sufficient information available on natural hazards to guide decision making.

Further policies ensure that appropriate matters for planning and decision making are considered and that people and communities are provided with relevant information and advice for this.

4.2 Methods

The RPS then provides for suitable methods to help achieve the natural hazards objectives and policies, which in relation to flooding states that flood hazard assessments will be completed for all major floodplains in the Region and that these assessments will include an analysis of the potential effects of flooding events (Method 1). The Regional Freshwater Plan (1999) provides a comprehensive list of the flood hazard assessments that will be carried out.

In regard to the dissemination of the results of those flood hazard assessments, *Method 7* in the Natural Hazards chapter of the RPS states that:

The Wellington Regional Council will make information it has on natural hazards available to the people and communities of the Wellington Region.

5. Assessment and dissemination of information

The RPS provides the Flood Protection Department with both a duty to investigate flood hazards and to make the resulting flood hazard information available to the people and communities of the region. This is consistent with the overall Natural Hazards objective of the RPS to ensure that *any adverse effects of natural hazards on the environment of the Region are reduced to an acceptable level.*

Flood *risk* combines the flood hazard with the vulnerability to that hazard, so that it is the potential risk that establishes the standard and extent of the current flood hazard assessment programme. This in turn explains why there have been a greater number of flood hazard assessments carried out in the Western part of the region.

5.1 Method 1 Flood hazard assessments

In the Western part of the region we have undertaken flood hazard assessments of the following floodplains:

- Hutt River
- Waikanae River
- Otaki River
- Porirua Stream
- Waiwhetu Stream
- Wainuiomata River
- Mangaone Stream
- Waitohu Stream
- Mangaroa River

The remaining stream programmed to be evaluated is the Pinehaven Stream.

This will complete all of the major assessments required in the western part of the region but leaves a number to be completed in the Wairarapa. With the merging of the flood protection functions into one department we propose a review of all floodplains in the region with a view to identify and prioritise the investigations necessary to complete flood hazard assessments on all floodplains with a significant existing community at risk and/or where development pressures may cause a future flood risk.

5.2 Method 7 – Dissemination of the flood hazard information

The flood hazard information is disseminated to the community in 4 key ways:

- a) The provision of flood hazard maps to the territorial authorities which they hold in their hazard registers and which may be reflected in their district plans.
- b) The provision of flood hazard advice when requested for resource consent applications or by members of the community seeking advice prior to purchase of a property.
- c) Through consultation undertaken as part of the preparation of floodplain management plans or scheme reviews. Our consultation is generally very extensive and is considered an effective way of advising the wider community of the flood risk.
- (d) The provision of flood warnings to TLA's and directly to the community in certain circumstances.

6. Comment

The Council is currently reviewing it's RPS which will then lead onto reviews of the regional plans. The Flood Protection department will be taking an active part in these reviews with the aim of ensuring flood risk remains appropriately dealt with in these plans. We will investigate how other Regional and District Councils provide for flood risk management in their areas to ensure we are up with national best practice.

7. Communication

There are no specific communication requirements at this stage.

8. Recommendations

That the Committee:

1. *Receives the report.*
2. *Notes the content of the report.*

Report prepared by:

Report approved by:

Report approved by:


Phillip Purves
Senior Engineer

Graeme Campbell
Manager, Flood Protection

Geoff Dick
Divisional Manager,
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