



Report **04.149**
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Committee **Landcare**
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Flood Damage, Western Rivers – February 2004

1. Purpose

1. To inform the Landcare Committee of flood damage incurred, and repairs required, following the flood events of February 2004.
2. To advise the Landcare Committee of the proposed funding of flood damage repairs and to recommend access to the Flood Contingency Reserve and River Rate Reserves.
3. To recommend that a scoping paper be prepared on investigations required to look at options for reducing the flood impacts from the Waiwhetu Stream.
4. To recommend that capital provision be made in the 2004/05 Annual Plan to construct new edge protection works in the Otaki River.
5. To recommend that additional provision be made in the 2004/05 Flood Protection Operating Plan to enable ongoing planting and stabilisation work in the Wainuiomata River.

2. February 2004 Flood Events

February 2004 was most unusual weather wise. Instead of being generally fine, warm and dry, there was a series of intense storms that brought heavy rain and strong winds. The main storms that affected the western part of the region occurred on:

- 11/12 February 2004
- 15/16 February 2004
- 19 February 2004

The unusual weather culminated in the major storm of 15/16 February that caused extensive flooding, slips, fallen trees and damage to housing, farms and infrastructure in the lower North Island. Most damage occurred in the Horowhenua, Manawatu, Rangitikei and Wanganui Districts. Major flood events occurred in our Wairarapa Rivers but the flood systems coped very well minimising damage and the impact on community.

The western part of the Wellington Region was lucky to escape the worst of the February 15/16 storm with damage and flooding confined mostly to the lower Hutt Valley, Wainuiomata and the Mangaroa Valley. Significant flood events occurred in the Wainuiomata River (30 year), Waiwhetu Stream (50? year) and Mangaroa River (15 year) – see Table 1 in **Attachment 1** for the flow statistics. Similarly the February 15/16 storm resulted in some exceptional rainfall totals with 344mm and 274.5mm falling over 48 hours at the Orongorongo and Wainuiomata rain gauges.

Interestingly, the Otaki and Waikanae rivers recorded their biggest floods for the month in the 11/12 February event (about 5 year return period). The Hutt River maximum for the month was on 16 February and was only a 4 year return period event.

The storm events also brought strong winds that felled a lot of trees in western watercourses, and was a major contributor to overall damages.

3. Flood Damage Assessment

Most damage to property and infrastructure occurred from the 15/16 February event. Damage included:

- Flooding in at least 26 homes, about 15 commercial properties, the Hutt Park motorcamp and extensive flood damage to cars, garages and properties when the Waiwhetu Stream overflowed its banks on the morning of 16 February 2004.
- Flooding of at least 2 houses, and extensive flooding of the lower valley flats as a result of flooding from the Wainuiomata River and tributaries. Infrastructure damage included a wash out of the Moores Valley Road culvert, wash out of the Wainuiomata River intake pipeline, damage to the Wainuiomata Treatment Pant access bridge and damage to the Coast Road.
- Extensive bank erosion including a wash out of one of the Mangaroa Valley bridge approaches, from the Mangaroa River.

Most damage to watercourses and flood protection assets managed by Greater Wellington occurred in the Wainuiomata River (town reach), the Porirua Stream and in the Otaki River. A system damage summary is provided as follows (see **Attachment 2** for details including repair estimates):

Hutt River

- Minor damage to scheme reach only. Erosion at Totara park horse paddocks threatening a set of power pylons, and cutting off the horse club access road.
- Major slip blocking river at Te Marua Golf Course.

Otaki River

- Further failure of the old Manawatu Catchment Board edge stabilisation works that have yet to be upgraded in accordance with the Otaki FMP. Key sites include the left bank at Barretts (above SH1), the right bank below Winstones, and the left bank immediately upstream of Mangahenene Island (both below State Highway 1). In two of these locations the old stabilisation works have failed completely leaving raw erosion scarps and that are putting the adjacent stopbanks under threat.
- Damage to the Upper Rahui debris fences.
- No damage to any of the new rock works constructed as part of the OFMP.

Waikanae River

- Bank erosions at Jim Cooke Park, and upstream at Falconers

Wainuiomata River (town section)

- Extensive damage to edge stabilisation plantings. Major channel blockages caused by trees and shingle.
- Several erosion areas including at Faulkes footbridge.

Porirua Stream

- Major blockages caused mostly by fallen trees.
- Extensive bank erosion

Waiwhetu Stream

- Relatively minor damage, mostly blockages by trees that required removing.

Speedys Stream

- Damage to the debris arrestor upstream of State Highway 2. Significant repair required.

High priority repair works are already underway, or have already been completed. This includes removal of blockages (mostly trees) from the Wainuiomata River, Waiwhetu and Porirua Streams, and several Kapiti watercourses. Most of the shingle build-ups in the Wainuiomata River have been removed, and the Jim Cooke Park erosion has been repaired.

Damage was not just confined to the sections of rivers and streams managed by Greater Wellington. Some significant damage occurred outside scheme areas most notably the major slip at the Te Marua Golf Course, and to rural

property in the Mangaroa Valley. **Attachment 2** provides the list of property owners who have contacted the Flood Protection Department seeking assistance with advice and costs to repair flood damage. Some of these jobs will be eligible for a financial contribution under Council's Isolated Works funding policy.

February's wet weather also impacted on work programmes, including capital improvement works. The Belmont and Strand Park realignment improvements have each been delayed by about 3 weeks due to high river levels. The supply of rock to the Otaki River is at least 4 weeks behind schedule due to difficulty accessing dry weather only sites, and the quarry being required to assist in emergency flood repairs in the Manawatu. The Hutt River cross section survey is about 3 weeks behind schedule.

4. Flood Damage Estimates

The total system flood damage estimate is provided as follows:

Hutt River	\$ 75,000
Wellington watercourses	\$210,700
Otaki River	\$136,000
Waikanae River	\$ 15,000
Kapiti watercourses	\$ 4,500
Total	\$441,200

In addition:

- New capital works on the right bank on the lower Otaki River at an estimated cost of \$206,000 are recommended as a result of the February floods.
- Funds of up to \$35,000 are recommended to be made available under the Isolated Works funding policy to provide financial assistance to landowners undertaking eligible flood repair works outside scheme areas.

5. Flood Damage Management Strategy

The recommended response to the flood damage incurred as a result of the February storms needs to be multifaceted to cope with the range of circumstances. A summary of recommended actions is as follows:

- Complete repairs to assets and watercourses as set out in Attachment 2 to a total value of \$441,200 as soon as practicable.
- Provision of \$206,000 be approved to enable another section of rock edge protection works to be completed on the right bank of the Otaki River, downstream of State Highway 1.
- Increase the maintenance budget for the Wainuiomata River by \$10,000 in 2004/05, and possibly 2005/06 to enable an enhanced replanting

programme to be undertaken. This will greatly assist in re-stabilising this watercourse, and will reduce the risk of further flood damage in the long term.

- A scoping report is prepared on the work required to investigate the flood risk posed by the Waiwhetu stream. The report will include the investigation of flood mitigation options taking into account environmental initiatives already underway, and examine whether an overarching Waiwhetu Stream Management plan is necessary.
- Funds totalling \$35,000 be made available to assist landowners outside scheme areas with flood repair works in accordance with the Isolated Works funding policy.

Comment

Many of the repair works can be undertaken by 30 June 2004, and in most circumstances this will complete the necessary flood repairs. However in the Wainuiomata River and Porirua stream there has been a huge loss of the willows that stabilise the channel. Replacement of these trees will take several years and hence the recommendation to provide additional budget provision for Wainuiomata River maintenance.

The Otaki FMP provides for the gradual upgrading of channel stabilisation works, with the highest priority being for the northbank from Chrystalls to the mouth. These works protect the northbank stopbank, that in turn protects Otaki Township and Rangiuru. It is recommended that the northbank erosion site, downstream of Winstones, be repaired by constructing a new capital rock lining. The other two significant erosion sites (Barretts and Mangahene) should be repaired to a condition similar to that prior to the flood damage. Eventually these repairs will need to be replaced with permanent rock works. However, we consider that the repairs are appropriate at this stage as they should hold the area for a number of years until capital funding becomes available.

The key issue with the Waiwhetu Stream is not flood damage repairs but rather whether the flooding risk posed by the stream is acceptable. Mayor Terris from Hutt City Council has written requesting that a joint officer task force be set up to look at options for mitigating the risk – **Attachment 3**. Councillor Evans has also raised the matter with staff. Committee members will be aware that that Flood Protection staff have already had a first look at the options available to reduce the risk to a group of houses at the end of Hayward Terrace. The 16 February flood event has also shown that there are other areas that are significantly at risk from the stream including houses in Riverside Drive south, the Hutt Park motorcamp, and industrial/commercial properties near Parkside Drive.

The flood risk posed by the Waiwhetu Stream was looked at as part of the aquatic weed management investigations undertaken in the mid-1990's, but this work needs refining and updating if mitigation options are to be considered. It is recommended that the a report be prepared that outlines the

work required (including cost, resources and time) to assess the flood risk including preparation of flood maps, to undertake an options investigation, and ultimately potentially produce a Waiwhetu Stream Management Plan. The report would be prepared with significant input from HCC staff as stormwater flooding is also a problem in the area.

The February flood event has also generated a large number of enquiries from landowners requesting advice and assistance. These all require responding to and an increase in the Isolated works funding budget is recommended so that financial assistance can be provided where appropriate and consistent with Council policy.

The recommended approach represents a logical and measure response to the February floods. The flood in Waiwhetu was a large one and the issues are complex. It is important that we look carefully at our options and consult with the community before any decision is made on what is the best way of assisting people who have houses in flood areas.

6. Financial Considerations

Flood Damage Repairs

As noted above the total cost of the recommended flood repairs is **\$441,200**. This work is proposed to be funded as follows:

Re-allocation of budgeted maintenance expenditure	\$170,708
Flood Contingency Reserve	\$135,246
River Rates Reserves/Invoice TA's	<u>\$135,246</u>
Total funding required	\$441,200

Funding of the additional work in Wellington watercourses is subject to the Watercourses Agreement with the appropriate Territorial Authority (TA). In most cases the TA's directly fund a proportion of the cost of maintaining these watercourses. We will approach the TA's to see if they are in a position to directly fund their share of the additional cost of the flood work.

Otaki River Capital Works

The Flood Protection Operating plan includes provision in 2005/06 (\$81K), 2007/08 (\$116K), 2009/10 (\$116K), 2011/12 (\$116K) for edge upgrade works.

It is recommended that the proposed new edge works downstream of Winstones, estimated to cost **\$206,000**, be included as a new provision in 2004/05, as an addition to the work programme already included in the Flood Protection Operating Plan.

The works downstream of Winstones will be debt funded. The estimated additional cost of servicing and repaying the new \$206,000 loan is \$20,300 per annum.

Isolated Works

Currently the Flood Protection Operating Plan includes provision of \$6,000 per annum for the Council's contribution to river works outside scheme areas that fit within the Isolated Works policy.

Our estimate suggests that following the recent storms we should make provision of **\$35,000** for assisting with Isolated Works to 30 June 2005. In other words we would need up to \$23,000 over and above the current budget. It is proposed to fund this from:

- 2003/04 - \$14,000 from within the existing Flood Protection budget
- 2004/05 – an increase of \$9,000 to the existing \$6,000 budget, taking the total to \$15,000.

7. Timing of Proposed Works and Proposed Changes to the Draft Flood Protection 2004/05 Operating Plan.

Flood Damage Repairs

We aim to complete the scheduled flood damage repairs by the end of the current financial year – 30 June 2004.

Otaki River Capital Works

The proposed new Otaki River capital works are unlikely to be able to be completed by 30 June 2004. Key restraints are availability of rock and staff resources to manage the design and tendering of the works.

It is proposed that the budget provision of \$206,000 be incorporated into the final Flood Protection 2004/05 Operating Plan for Council approval in June, a change from the Draft Plan recently approved by Council for consultation. In the meantime staff will look at the appropriate time to construct the works taking into account the current risk to the North bank stopbank, staff and rock resources, and issues such as the trout spawning season.

Additional Maintenance Allocation – Wainuiomata River

It is proposed that the maintenance budgets for the Wainuiomata River (currently \$17,617 per annum) be increased by \$10,000 in the 2004/05 financial year. This change to the Plan would be completed in June when the final Flood Protection Operating Plan is prepared for Council approval.

The need to retain this increased maintenance budget in the 2005/06 financial year can be reviewed as part of the Annual Plan update next year.

Isolated Works

Our estimates of likely claims for assistance for isolated river works suggests that the proposed Flood Protection 2004/05 Operating Plan needs to be amended to include a total provision of \$15,000, up from the current \$6,000.

Impact on Rates

The additional rate funding required in 2004/05 to fund the Otaki capital works loan servicing, the increased Wainuiomata River maintenance budget, and the increased Isolated Works budget is about \$30,000, an increase of 0.4% to the current total Flood Protection rate requirement.

8. Recommendations

1. *That the report be received and the contents noted.*
2. *That a scoping report is prepared on investigations required to look at options for reducing the flood impacts from the Waiwhetu stream for subsequent consideration by the Committee.*
3. *That the Landcare Committee recommend to the Policy & Finance Committee that it:*
 - (a) *Approve the expenditure of \$441,200 to undertake flood damage repair work in the western rivers and streams as set out in Attachment 2 to this report.*
 - (b) *Approve funding of the \$441,200 flood damage repair expenditure by reallocating \$170,708 from existing maintenance budgets, by withdrawal of \$135,246 from the Flood Contingency Reserve and \$135,246 from a combination of the River Rate Reserves and invoicing the Territorial Authorities under the Watercourses Agreement.*
 - (c) *Approve the expenditure of up to \$206,000 for new capital edge protection works on the lower Otaki River to be completed by 30 June 2005.*
 - (d) *Approve in-principal increasing the Wainuiomata River maintenance budgets by \$10,000, and increasing the Isolated Works subsidy budget by \$9,000 when the draft Flood Protection 2004/05 Operating Plan is finalised in June 2004.*

Report prepared by:

Report approved by:

Report approved by:

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Rob Forlong
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Greg Schollum
Chief Financial Officer

Attachment 1: Flow statistics for flood events, 11-19 February 2004

Attachment 2: Flood Damage Estimates

Attachment 3: Memorandum from Mayor Terris, HCC regarding Flood mitigation measures on the Waiwhetu Stream