greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

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| Report | 11.562 |
| Date | 9 November 2011 |
| File | N/03/21/01 |
| Committee | Hutt Valley Flood Management Subcommittee |
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# Waiwhetu Stream Floodplain Management Plan Update

## 1. Purpose

To update the Subcommittee on progress with the Waiwhetu Stream Project and Floodplain Management Plan.

## 2. The decision-making process and significance

No decision is being sought in this report. This report provides an update on progress made with implementing the floodplain management projects and is for information only.

## 3. Background

The Waiwhetu Project structural works to widen and deepen and clean up the lower reaches of the stream were completed in 2010, along with the first stage of ecological enhancement planting. Further ecological enhancements and amenity works are planned for the 2011/2012 and 2012/2013 financial years respectively. Section 4 of this report provides details on the next stages for the enhancement works.

The Waiwhetu stream floodplain management plan investigations were restarted in November 2010. Investigations have incorporated additional modelling work to include predicted climate change effects and the modelling of several options to address the remaining flood problem. Consultation with the Waiwhetu community is ongoing, and selection of a range of flood management packages is proposed for the next round of community workshops. Section 6 of this report presents the material proposed for consultation.

## 4. Ecological Enhancements

The ecological enhancements for the Waiwhetu stream project were designed by Natural Textures. The first and second stages of the planting have been carried out by both the community and Downer NZ.

**Stage 1**

Downer NZ continue to carry out contractually required maintenance and inspections of stage 1 planting, and have strengthened areas of failed planting, as advised by the Ecological architect. Natural Textures continue to visit the site to compile their independent monitoring of the success and failure areas, incorporating lessons learnt into future planting design.

Sharing of expertise and knowledge between the contractor, designer and GWRC continues to improve success of planting works.

**Stage 2**

Stage 2 planting has been extremely successful, with a survival rate of plants far exceeding stage 1. This has generated some concerns regarding density of shrub plants, which may become overcrowded as the planting areas mature. It is proposed that these plants are allowed to strengthen in situ, and future community work is used to thin these out and relocate mature specimens to new sites under direction of Greater Wellington Regional Council (GW) staff.

A viewing platform and a picnic site have been installed on the bank of the stream adjacent to Hutt Park. Feasibility of carvings are being investigated by carvers from the Waiwhetu Marae for waka style benches which form part of the picnic site. The Waka tuna, in-stream habitat sculptures, have been withdrawn for further review, due to a combination of health and safety and environmental concerns.

**Stage 3**

Stage 3 planting is entering a final review stage, and plants will be confirmed before the end of the year. Jim Mikoz, who raised concerns regarding diversity of the intertidal plantings, has been invited to suggest additional plants for stage 3, which can be added to the intertidal zones completed in stages 1 and 2.

## 5. Bank Erosion

The bank erosion along Hutt Park Road continues to stabilise. A design is proposed to install a living wall system to strengthen this bank. However, the necessity for hard edge protection remains an option. Planting will be used in the first instance to encourage natural protection to form where a soft sediment toe has developed at the base of the eroded bank. The growth of this toe means that the bank form continues to evolve consistent with the pre works bank shape. Channel morphology investigations have attributed this bank shape to tidal influence, rather than scour.

A trial of an erosion protection product called Elastocoast, an aggregate binding product, will commence at the end of November. This will extend either side of a culvert outfall. GW and Capacity are participating as observers in this trial which is being fully funded by ACMA industries. This trial is of interest to GW as an economically competitive erosion protection method.

# 6. Floodplain Management Planning Progress

## 6.1 Environmental Strategy

As part of the development of the Floodplain Management Plan, an Environmental Strategy document is being developed in conjunction with HCC officers and the community. This will develop guidelines for future stream plantings, amenity enhancements, sculptures, footpaths and cycle-ways. Natural Textures have been engaged as lead consultants for this project. GW will continue to manage. This project will create a vision for the stream, and direct the flood management plan outcomes.

## 6.2 Climate Change Modelling Update

Climate change modelling was completed at the end of October, and incorporated GW's recommended rainfall intensity and sea level rise changes. The modelling work also includes the new channel shape created as a result of the completed Waiwhetu Project

Flood maps have been produced which show the change in flood spread from the original model. As this model has been completed midway through development of a floodplain management plan, hazard information sheets will not be sent to property owners at this stage. Implementation of the floodplain management plan may alter the flood spread, and it is therefore proposed to produce a final set of hazard maps at the end of the floodplain management planning process which will include both the climate change flood hazard maps and the predicted flood hazard maps that would exist as a result of completion of the works package directed by the floodplain management plan.

This proposal has been discussed with HCC and will be finalised once feedback has been received.

## 6.3 Flood Management Option Package Workshops

Workshops are planned for December to enable the community to make a selection of several options packages to manage the flood problem. Progress initiating these has been slow due to delays with the remodelling work and the complexity and variety of options available, none of which in isolation are the answer to the flood problem.

The option selection approach has evolved to enable the community to weight their preference rather than attempt to define details of option location. Flood maps for the maximum of the core option types have been produced to assist communicate the impact of pursuing an option type in isolation. In addition, these maps have been used to predict the flood damage benefit gained from each option, and estimation of cost to implement each option has been improved.

The workshop material for each option shows the outputs in a variety of formats to enable people to interpret the information, and therefore make an informed decision. These posters have been well received by those assisting with their development, and the multi format information approach has enabled testers across a range of disciplines to gain an understanding.

## 7. Friends of the Waiwhetu Stream

The friends of the Waiwhetu stream continue to grow, and the group aims to seek a mandate to represent streamside community views and opinions during a public meeting on 28th November 2011. An update on the group will be provided at the Hutt Valley Floodplain Management Subcommittee meeting on the 1st of December 2011.

The group has completed a number of rubbish collection runs and planting events along the stream banks, and also plans to begin hand removal of cape pondweed to assist with investigations into the plants reproductive biology and feasibility of manual control. HCC and GW have supported the group by supplying equipment, collecting rubbish, and providing advice in regard to health and safety and promotional material.

## 8. Recommendations

*That the Subcommittee*:

1. ***Receives*** *the report.*

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

| Report prepared by: | Report approved by: | Report approved by: |
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