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Committee Hutt Valley Flood Management Subcommittee  
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## Waiwhetu Stream Project - Planting Next Stages

### 1. Purpose

To update the Subcommittee on the progress with the Waiwhetu Stream Project Ecological Enhancement work, and remedial works required to address bank erosion occurring in some locations.

### 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

The Waiwhetu Project structural works were completed in 2010, along with the first stage of ecological enhancement planting. Two more stages of ecological enhancements and amenity works are planned for the 2011/2012 and 2012/2013 financial years respectively. This report details the works proposed to be undertaken in the next stages.

### 4. Planting

The ecological enhancement for the Waiwhetu stream project was designed by Natural Textures, and the first stage of the planting was carried out by Downer EDI. Downer NZ have been recently appointed to complete the second stage of the ecological enhancement works.

#### Stage 1 Review

In general the planting carried out in Stage 1 has been very successful, and an optimal growing season has seen rapid establishment in most areas unaffected by erosion. Shortage of availability of particularly hard to source *Paesia scabulera* (pigfern) meant that this species was replaced in most instances with *Carex secta* (*purei*).

Downer NZ have carried out contractually required maintenance and inspections of the planting works and reporting on stage 1 planting to the designers, Natural Textures. Natural Textures have completed independent inspections on progress, and compiled the Downer NZ report with their findings to provide a dual perspective of the planting progress. This report identifies areas of success and failure, notes substitutions, errors and other unscheduled changes and makes suggestions for remedial action where required.

Meetings to co-ordinate remedial planting work have been held, and agreed remedial works will commence shortly. This work will replace failed areas and new planting to reinforce those areas of collapsed bank that have now reached a stable form.

## **Stage 2**

Stage 2 planting will see over 11,000 plants of varying species added adjacent to the stage 1 plantings, expanding variety and area covered. In addition two areas of stage 2 have been set aside for community planting days in August. Maintenance of both the stage 2 planting carried out by contractors and the community plantings will be completed by Downer NZ over a period of 18 months.

Details are being finalised for stream side furniture. Total budget requirements for all conceptualised furniture exceeds approved budget, therefore focal areas along the stream will be targeted for furniture and sculpture installation, commencing with the right bank adjacent to Hutt Park during stage 2. Subject to available funds, remaining furniture and sculpture installation will occur during stage 3.

The proposed furniture includes Waka shaped benches, jetties and habitat sculptures, a bird perch, and trail signage developed in conjunction with Hutt City Council officers.

## **5. Bank Erosion**

Within its lower tidal reaches the Waiwhetu stream has historically maintained a steep bank, with near vertical lower bank, and a gently graded toe formed of fine material. This bank form is attributed to tidal influence, with the near vertical face formed by wave lap erosion.

For the Waiwhetu Project the banks of the Waiwhetu Stream were designed to a fixed batter slope, it was acknowledged that the stream may modify the engineered faces to a more natural profile over time. Reinforcing techniques were used in areas where there were significant concerns of erosion, this included rip-rap, enkamat, reno mattress and mass-block wall protection.

Due to requirements for cost reduction, some areas at lower risk of erosion had this protection removed following further risk based analysis; erosion protection works were prioritised to locations of expected increased velocity in high water flow events and locations where erosion would affect key

infrastructure. These areas are adjacent to bridges where the stream narrows or over service crossings that run close to the stream bed.

Some of the bank areas where designed erosion protection was dropped are now suffering attack from wind driven intertidal wave lap action. This is having the effect of returning the stream bank form to its historical shape of steep upper bank, near vertical lower bank with a gently graded toe formed of finer material.

The true left bank of the stream, between Hutt Park Bridge and Seaview Road Bridge, has been subject to further investigations as stabilisation has been slow to occur. This stretch of the river is best divided into 3 locations, each approximately 150m in length:

1. 150m upstream of Seaview Road Bridge – Planted in stage 1

The bank area below high water mark has been subject to significant wave lap action resulting in noticeable collapses in this area, the collapsed material has stabilised at the toe of the short vertical face, re-planting of lost intertidal species will be carried out to reinforce this toe by acting to dissipate the wave lap.

2. 150m downstream of Hutt Park bridge – Not planted in stage 1

The bank has suffered significant wave lap attack in this area, stabilisation has not yet occurred, and an engineered solution is likely required to reinforce this stretch. Advice has been sought on appropriate soft techniques, and further investigation is underway.

3. Mid section of 150m opposite Hutt Park – not planted in stage 1

This section has suffered significant wave lap attack, stabilisation has been slower to occur than in other areas, but some locations are beginning to settle to historical form. It is proposed that gravel is bedded into these toes to assist stabilisation and provide an erosion resistant foundation for toe formation and future planting.

It is anticipated that we will be able to complete these repairs within the existing planting budget.

## **6. Future 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.

## 7. Recommendations

*That the Subcommittee:*

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

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