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Committee Landcare
Author Steve Murphy, Operations Support Engineer

Western Rivers Asset Management report for 2004/05

1. Purpose

To report on the condition of Western Rivers infrastructural assets as at 30 June 2005.

2. Background

The Flood Protection Department is responsible for a variety of infrastructural assets that form the basis of flood protection schemes on the Hutt, Otaki, Waikanae, and Wainuiomata Rivers and the Porirua Stream. These assets have a total value of \$68.5 million and provide flood protection to property and people residing on the floodplains of these rivers.

The substantial investment in flood protection schemes and their ongoing maintenance have served the community well since the first stopbank was constructed on the Hutt River in the early 1900s.

Monitoring of scheme infrastructural assets over the past financial year seeks to re-assure Council that the various assets are being maintained to the desired standard, will perform when needed, and where necessary are being appropriately enhanced by a capital works programme.

3. Summary

Overall, the majority of scheme infrastructural assets are in good condition, with 70% of the stopbanks on the three major schemes having a condition rating of either 1 or 2. **Attachment 1** presents a summary of the stopbank maintenance condition ratings.

The 5 January 2005 flood event dominated the 2004/05 financial year and disrupted normal maintenance work programmes. Damage to flood protection assets was generally confined to edge protection works, with the majority of repair work consisting of top-ups or patching of existing rocklines, groynes etc.

Attending to urgent flood damage repairs put considerable pressure on staff to complete these repairs as well as routine maintenance work, without slipping too far behind. Despite the additional flood damage work, the normal year's maintenance work programmes were essentially completed as planned.

Rock supply problems did delay some maintenance of edge protection works in the Hutt, Otaki and Waikanae Rivers. Year-end inspections highlighted these areas and they will be attended to in this financial year. This delayed maintenance is not putting flood protection schemes at risk.

Our maintenance work programmes now have a steadily reducing component of reactive work, because smaller flood events are causing less damage. The considerable work put in place over the last 10 years is showing rewards and all schemes would probably now pass a 5-year return period event with little, if any, damage. This was not the case 10 years ago and there needs to be a strong emphasis on holding those gains.

Good progress was also made with implementation of our asset management plans. This included further development of our Asset Management system, as well as routine work like data collection, and site visit checks. A detailed list of the work completed during the 2004/05 year, and planned tasks for 2005/06 is provided in **Attachment 2**.

4. Scheme summaries

4.1 Wellington

4.1.1 Hutt River

Infrastructural assets on the Hutt River are maintained to a high standard as warrants the scheme's importance in protecting one of the most developed floodplains in New Zealand.

Annual year-end inspections revealed that the majority of frontline defences such as rocklines, debris fences, groynes, floodgates and other edge protection works are well maintained and in good condition. However, the inspections did note some areas which, need to be addressed in the 2005/06 work programme. The more notable of these items includes:

- Black Creek, where bank toe erosion requires repair.
- Speedys Creek, where the debris arrestor needs to be rebuilt.
- Avalon left bank where more of the existing debris fences require the addition of rock heads.
- Nash Street, where the rock groynes require repair.
- Manor Park golf course, where the right bank erosion has extended at the south end of the course and requires repair.
- Memorial Park, where the rockline requires extension.
- Elbow Park above Maoribank, where edge protection works are being undermined.

Last years report noted the poor condition of willows in some reaches of the Hutt River. A programme of rejuvenating these willow stands commenced during the last financial year and strong new growth is already evident.

4.1.2 Wainuiomata River

There is a limited flood protection scheme on the Wainuiomata River, comprising mainly of stopbanks and willows. While the stopbanks are in good condition, several willow stands are below the desired standard after either being completely lost or badly damaged during the February 2004 flood event. An extensive planting programme is well underway to bring our willow stands back up to an acceptable standard.

4.1.3 Porirua Stream

The Porirua Stream scheme includes infrastructural assets through the central business district and two earth detention dams. The scheme was completed in the 1990s, so assets are relatively new and are in good condition. The main maintenance task this year was the extraction of approximately 4,400 m³ of gravel through the central business district reach where gravel accumulations were compromising design flood levels.

4.1.4 Stebbings and Seton Nossier Dams

Council is the owner of two large flood retention dams in the Porirua catchment. These dams are used to lesson flood levels in the Porirua stream by holding back floodwaters and releasing them slowly through a throttled outlet. Stebbings dam is situated below Churton Park and is a purpose built earth dam. Seton Nossiter dam is situated in Granada and uses the motorway and Mark Avenue earth fill embankments as a retention dam.

Comprehensive safety reviews were recently carried out on both these dams. This study concluded that both dams would not meet new guidelines for handling a Possible Maximum Flood (PMF) with the consequent risk of overtopping and failure of the dam structure.

Both dams were constructed 10 to 12 years ago and complied with all requirements at the time they were built. They continue to be very safe structures, which are well maintained and monitored regularly. However as a responsible dam owner, and to better understand the risks involved, Flood Protection has commissioned some further studies. A range of possible solutions will be examined over the coming year with an initial workshop planned for early December.

4.2 Kapiti

4.2.1 Otaki River

Infrastructural assets on the Otaki River are in good condition, and the enormous amount of work done over previous years is now contributing to a system which is increasing in robustness.

Even with the 5 January flood event, we achieved a satisfactory completion rate on our maintenance work programme and if we have a relatively settled financial year we will catch up on any outstanding works. Work still to be done, includes:

- Channel alignment issues at Katihiku.
- Repair of Tracey's debris fences.
- Completing the top up of the main Chrystalls rockling.
- Repairs to the debris fences below Barretts.

4.2.2 Waikanae River

The majority of the Waikanae River flood protection scheme is also in good condition despite the flood event. As on the Hutt and Otaki Rivers, there is still some outstanding flood damage work to complete this financial year including bank erosion at the river mouth and some significant repairs are needed to the edge protection works in the SH1 – Maple Lane reach. The completion of these repairs and the capital works being constructed at Jim Cooke Park will see the scheme improved.

5. Peer review

Annual peer reviews are undertaken of infrastructural assets on rivers in both the Western and Wairarapa Regions. The peer reviews provide an audit of maintenance standards and procedures, and are an essential component of each department's asset management systems.

This year, the Western Region peer review focussed on infrastructural assets on the Wainuiomata River and Porirua Stream. The reviewers' comments were favourable and their report is included as **Attachment 3**.

It has been our intention for several years now to involve Horizons Regional Council in a reciprocal peer review but the severe flooding in February 2004 prevented this. A further approach to Horizons Regional Council will be made this year.

6. Capital works programme

The capital works programmes for Hutt, Otaki and Waikanae Rivers are set out in the relevant Floodplain Management Plans. Capital works raise the level of service of the flood protection schemes, and also create assets which must be maintained.

Progress with the implementation of the various capital works is the subject of a separate report to the Landcare Committee.

7. Communication

This report is written primarily for internal quality assurance purposes. No particular communication initiatives are proposed.

8. Recommendations

That the Committee:

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

Report prepared by:

Report approved by:

Steve Murphy
Operations Support Engineer

Geoff Dick
Manager, Flood Protection

Attachment 1: Stopbank maintenance performance measure

Attachment 2: Asset management tasks completed in 2004/05 and proposed tasks for 2005/06

Attachment 3: Audit of River Management Asset Maintenance Standards