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Committee Landcare
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Western Rivers asset monitoring report for 2002/03

1. Purpose

To report on progress with implementation of the Western Rivers Asset Management Plan.

To report on the condition of Western Rivers infrastructural assets at 30 June 2003.

2. Asset management work completed in 2002/03

The Flood Protection Department is responsible for a variety of assets in the western part of the Wellington Region. These assets include stopbanks, floodwalls, edge protection works such as rocklines and willow planting, river berms, and detention dams. The assets are located on the Hutt, Otaki, Waikanae and Wainuiomata Rivers and on the Porirua Stream. The value of these assets at 30 June 2002 was \$61.9 million.

The Western Rivers Asset Management Plan (AMP) sets out how those Flood Protection assets are to be cared for. The Plan also sets out the monitoring required to ensure that the assets are maintained in the required condition.

Our 2002/03 asset management work programme was interrupted by the resignation of the engineer previously responsible for asset management, the divisional review and recruitment delays. This has meant the last of the required monitoring work is still underway at the time of preparing this report, and that some programmed system improvement tasks have been carried forward to the current (2003/04) financial year. Nevertheless 2002/03 was a productive year and we completed the following jobs:

- successfully achieved Audit New Zealand approval of the 30 June 2002 valuation of the Western Rivers assets as part of Council's annual audit.
- completed a comprehensive programme of maintenance work on the five river systems with assets. A list of the more notable works is included as **Attachment 2**.

- completed the core requirements of the monitoring programme including, routine operational staff checks, a Flood Protection managers visit, annual peer review, and a condition assessment of some asset classes.
- completed a zero-based review of the maintenance and capital expenditure programmes for all five schemes as part of preparing the 2003–2013 LTCCP.
- commenced the education of Steve Murphy into the intricacies of asset management, as he has assumed responsibility for the Western Rivers Asset Management Plan.

3. Asset monitoring

To ensure that the flood schemes are “ready for action” and the system performs as designed, the AMP contains a comprehensive set of monitoring and reporting requirements. A chart summarising the monitoring required by the plan and that carried out during 2002/03 is included as **Attachment 1**. Some of the more notable items are listed below.

- scheduled annual inspections were completed including the Wairarapa division peer review of a variety of sites on the Hutt River. Their report concluded that the inspected assets were appropriate for the location with no significant maintenance issues. A copy is included as **Attachment 3**.
- a number of performance measures were assessed and compared with the initial baseline figures. Initial results indicate improvements, but further work is required to standardise the recording and comparison of these figures.
- a comprehensive safety review of the Seton Nossitor detention dam, a key component of the Porirua flood scheme, was completed. The report has raised a safety standard issue that will be reported to the Committee separately at a later date.

4. Asset condition summary at 30 June 2003

Most Western Rivers assets are in good condition and well maintained. However, it should be recognised that we manage some assets, particularly some older stopbanks that have a capacity below the desired standard. Lifting the level of service will happen through the programme of capital works. In the meantime a sound maintenance programme will ensure that these assets continue to function to their original build standard.

In the Hutt River, scheme assets are generally in very good order. A regular programme of mowing, fertilising, patching and tree removal ensures that stopbanks and berms are kept in the required standard. Edge protection works are similarly maintained, with regular inspections and repair as required. Floodgates are inspected annually and maintenance completed as required. Refurbishment of some of the older willow lines is underway as part of the annual planting and layering programme.

Maintaining bed levels is probably the key Hutt River management issue at present. In the lower river gravel extraction is controlling the natural build up, but we also have a similar build up downstream of the Moonshine Bridge. Bed levels continue to degrade (lower) in the Birchville to Totara Park Bridge reach, increasing the risk of failure to existing edge works. We will be re-surveying this financial year, and will then recommend an appropriate strategy.

In the Otaki River most of the older Catchment Board edge protection works have failed, and are non-existent. However, over recent years much new capital works, including new rocklines, groynes, debris fences, and plantings, have been constructed to replace the former Catchment Board works. These new assets are generally in good condition, although year-end asset inspections have highlighted that some maintenance is required. This will be a high priority for 2003/04. Maintenance of the channel alignment and edge works will remain a challenge on the Otaki River. The older Otaki stopbanks are being maintained to a hold standard until they can be upgraded through the capital works programme.

We also now have some significant new assets on the Waikanae River; for example the Kauri-Puriri stopbank and the State Highway 1 to Maple Lane edge works. In accordance with the Asset Management Plan these will be maintained in their as-built condition. Any deterioration should be picked up early through the monitoring programme so that required maintenance can be attended to. The year-end inspection picked up on some work required to the new SH1 to Maple Lane edge works.

The Porirua scheme was completed in early 1990 and so the assets are relatively new, and in good condition. Over the last two years we have put considerable emphasis on the two detention dams with detailed annual inspections and the recent completion of the Seton Nossiter safety review. Most of the maintenance issues arising from the inspections have been dealt to, and this includes vandalism to the outlet structure on Stebbings dam. The Seton Nossiter safety review has shown up a dam safety compliance issue that will need to be worked through over the next couple of years. Through the Porirua City Centre reach gravel build up was starting to compromise flood capacity so we have commenced a programme of extracting surplus gravel.

The Wainuiomata scheme is also relatively young at about 20 years old. Assets consist primarily of stopbanks and willow plantings with some isolated edge works. The stopbanks are in excellent condition and are regularly mown and fertilised. Willow lines are in good health and providing good edge protection. The six-year event in June 2003 damaged some plantings but this damage is not of major significance. Repairs are underway.

5. Asset management system improvements proposed for 2003/04

The schedule of improvement tasks proposed for 2003/04 is as follows:

- improve our maintenance management systems. In particular we need to refine our inspection schedules, recording and reporting requirements so that this work is more clearly built into work schedules, and reporting requirements are standardised.
- clarify definitions of, and standard measurements for, assessing the performance measures set out in the various river specific plans.
- undertake an assessment of earthquake risk to our Western River assets.
- commence evaluation of some proprietary asset management software packages with a view to improving our data collection and reporting capacity.
- invite the Horizons Regional Council to participate in a reciprocal peer review. This should further enhance the robustness of the annual peer review process.

6. Summary

We have completed another years comprehensive maintenance works on the five flood protection schemes with assets. Overall the assets are in good or excellent condition with little deferred maintenance. This contrasts with the situation I remember when I first came to the GWRC nearly ten years ago, when there was considerable deferred maintenance. Year-end inspections did highlight some areas on the Otaki and Waikanae Rivers that will need attention in the coming year.

Overall our maintenance programmes are now largely planned with a steadily reducing component of reactive work. A possible exception is the Otaki River where sections of the river edges remain vulnerable to flood damage. Overall smaller flood events are now causing less damage as evidenced by the little damage caused by June 2002 flood event in the Hutt River, and the June 2003 event in the Wainuiomata River. However, we still have some challenging management issues, such as bed level maintenance, to resolve.

The focus of our asset management programme over the coming years will shift more towards the capital improvement works programme, or lifting levels of service to those set out in the relevant floodplain and asset management plans. On the Hutt, Otaki and Waikanae Rivers we still have significant lengths of old stopbanks and edge works which can only be improved via capital works.

The hard work of preparing the various plans is paying off. The preparation, and adoption by Council, of the floodplain management plans and asset management plans, has given Flood Protection a clear sense of direction of what work is required and where we are headed.

A key focus over the coming year will be to further bed the asset management plans into our work programmes, so that our inspection and monitoring systems become the key drivers in generating the following years maintenance. We will also look at improving our understanding of the earthquake risk to the assets, and our information gathering and reporting systems.

7. Communication

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

8. Recommendations

That the Committee:

1. *receive the report.*
2. *note the contents of the report.*

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Attachment 1: Asset monitoring flowchart

Attachment 2: Key maintenance programme achievements

Attachment 3: Wairarapa Division peer review audit