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Report to Landcare Committee
from Geoff Dick, Manager, Flood Protection (Operations)

Flood Protection Group 1999/00 Asset Maintenance Report

1. Purpose

To report on the maintenance of Flood Protection infrastructural assets during the 1999/00 year.

2. Background

The Flood Protection Group is responsible for some \$50 million of assets in the western part of the Wellington Region. These include stopbanks, edge protection works such as rocklines and willow planting, river berms, detention dams, land, and buildings. These assets are located on the Hutt, Otaki, Waikanae and Wainuiomata Rivers and the Porirua Stream.

An Asset Management Plan (AMP) has been prepared for the assets located on the five rivers and streams listed above. This plan, the Western Rivers AMP – Volumes 1 to 7, was presented to the Landcare Committee at its meeting on 13 July 2000 (Report 00.491). These plans are effectively operative from 1 July 2000.

3. Asset Management Monitoring Requirements

An important component of the Western Rivers AMP is comprehensive monitoring and reporting requirements. These monitoring activities aim to clearly demonstrate that the agreed Level of Service is being provided and that adequate maintenance is being undertaken so that the assets are maintained in perpetuity. The proposed asset monitoring plan from the Western Rivers AMP is provided as **Attachment 2**.

For the 1999/00 year, just ended, maintenance and monitoring programmes have **not** been developed and implemented fully in the compliance with the now operative AMPs. Instead, the Flood Protection 1999/00 Asset Maintenance Report is the last report prepared in the pre-AMP format. Nevertheless, this report is aimed at providing a formal sign off that the agreed Level of Service is being provided and that adequate maintenance is being undertaken so that Western Rivers assets are maintained in perpetuity.

Items covered in the Flood Protection 1999/00 Asset Maintenance Report include:

- The 1999/00 maintenance programme
- The October 1998 flood damage repairs
- An expenditure summary
- The annual peer review
- General observations

The Annual Asset Maintenance Report is an important step in achieving a clear audit from Audit New Zealand. It provides written evidence that Flood Protection Business Plan Performance Indicators, linked to the annual maintenance programme, have been met. The full report is available on request.

4. **October 1998 Flood Damage Repairs**

The flood damage repairs and improvements resulting from the October 1998 flood events were due for completion by 30 June 2000. This work had a total estimated value of \$4,726,747. At 30 June excellent progress had been made with this work, but it had not been fully completed. The total value of work completed at 30 June was \$3,914,682 or 83 percent of the project budget.

The significant remaining items to be completed include:

- The Owen Street groynes and Avalon Berm repairs, Hutt River. This work was delayed due to rock supply difficulties.
- The Boulcott improvements land purchase. Negotiations are in progress.

The delay on the above work has not materially compromised the security of the Hutt River flood protection scheme as, in each case, adequate temporary arrangements are in place. However, it is appropriate that all work is completed by December 2000. Arrangements, including an alternative source or rip-rap, are being made to achieve this.

5. **Quality Standards and Peer Review**

Quality standards for the 1999/00 maintenance programme include:

- Regular monitoring during the year. This includes fortnightly meetings of Flood Protection Operations management staff, and regular site inspections by the Manager, Flood Protection (Operations).

- An annual peer review by Wairarapa Division engineering staff. This review is carried out by experienced staff who are able to make an in-depth assessment of the state of the assets.

Attachment 1 is a copy of the peer review audit undertaken by Wairarapa Division staff on 20 June 2000. This year's review focused on assets and maintenance standards in the Porirua and Korokoro Streams, and the Hutt River.

Peer reviews are undertaken to provide an independent review of the maintenance standards being achieved in regard to scheme assets. The visits are a very good forum for exchanging ideas and testing maintenance procedures and priorities.

The summary findings of the peer review are as follows:

“These inspections completed over a one day period were considered to provide a reasonably representative overview of river asset maintenance standards. Prior to the inspections, the reviewers had the opportunity to briefly go through the documents relating to maintenance works in the Hutt River and Porirua Stream.

The reviewers' assessment is that the overall standards of asset maintenance applied by the Flood Protection Group are appropriate when related to prevailing practice, available funding, asset value, and the consequences of failure.”

Significant observations and recommendations included:

- The need to carefully observe the Stebbings Dam spillway during and after major flood events. The steep slope and cement stabilised earth construction (as against concrete) means some erosion can be expected in an extended spillway operation.
- Future renewals of the recently strengthened Korokoro debris arrestor should include a ground up redesign, instead of a straight replacement. This may reduce the structural requirements and hence reduce the cost.
- In future, a tighter specification for the type of fill and its compaction was recommended for reinforced earthworks similar to that observed being constructed at Block Road.

All three matters raised above have been noted and agreed.

6. **Asset Maintenance Report – Summary Findings**

The conclusions from the 1999/00 Asset Maintenance report are provided as follows:

- Maintenance programmes were completed largely in accordance with the Annual Plan programme despite the extra work involved in completing the outstanding flood damage work.
- All outstanding flood damage repairs in Otaki and Waikanae have been completed. All outstanding flood damage repairs in the Hutt have been completed except for Owen Street and part of Avalon Berms, which were delayed due to rock supply difficulties.

- The outstanding flood damage repairs at Owen St. and Avalon will be completed in the 2000/2001 financial year. Funds have been carried over for these works.
- The 1998/99 and 1999/00 work programmes included substantial edge protection improvement and repair works on the Hutt, Otaki and Waikanae Rivers. These works were essential to maintain the design channel alignment and hence secure adjacent assets including residential, rural and industrial properties, and key community assets including roads, parks, sewer mains and stopbanks. This work, now substantially completed, has significantly enhanced the level of service provided from pre-October 1998.
- The 1999/00 work programme continued the strong emphasis on stopbank maintenance and improvement in all 3 major rivers and the 2 minor schemes. Work completed included stopbank refurbishment at Black Creek, Shandon Golf Course and Totara Park on the Hutt River, and stopbank refurbishment at Mangahanene Island and the Chrystalls stopbank upgrade on the Otaki River.
- There is continuing pressure on the Hutt River berms from motor vehicles, leading to conflicts with other users and increasing damage. The use of routine weekend patrols is helping to educate the public about responsible use. The Council commitment to a Hutt River ranger from 2002/03 will provide an excellent resource for future management and improvement of the Hutt River corridor.
- The management of gravel build-ups in the lower reaches of the Hutt and Waikanae Rivers and the Porirua Stream through the Porirua City Centre has been identified as important for maintaining current flood protection service levels. A high priority will be given in 2000/01 to developing management strategies for these three rivers and streams.
- The long term operational consents for the Hutt, Waikanae and Otaki Rivers, continue to prove their worth, with better management of problems as they occur and certainty for developing work programmes. An application will shortly be lodged for the Wainuiomata River. An application has yet to be prepared for the Porirua Stream.
- Internal and peer review audits continue to confirm that the maintenance of assets is being completed to an acceptable standard, but some items need to be monitored closely.
- Overall Flood Protection infrastructural assets have not declined in condition, and in many areas have been improved. They continue to provide existing levels of service (or an increased level of service where improvements have been completed).

7. General Comments

It is worth reflecting where we are now, and where we were two years ago, prior to the October 1998 floods. A huge amount of work has been achieved over this period. Flood protection assets in the western part of the region are now, on average, in very good condition. Achievements over that period include:

- Substantial completion of the October 1998 flood damage repairs and improvements works.
- Preparation of a comprehensive Western Rivers AMP and Council commitment to this through the 2000-2010 Long Term Financial Strategy.
- Huge progress to the completion of the Hutt River Floodplain Management Plan.
- Council commitment to implementing the Hutt, Otaki and Waikanae River Floodplain Management Plans through a comprehensive programme of capital improvement works being included in the 2000-2010 Long Term Financial Strategy.

Not only are flood protection assets currently in very good order, but comprehensive strategies are in place to make sure they stay that way, or are improved to deliver the agreed level of service to the Regional community.

8. **Community Connection**

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

9. **Recommendation**

That the report be received and the contents noted.

Report prepared by:

Approved for submission:

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Attachment 1 : Wairarapa Division Peer Review Audit

Attachment 2 : Monitoring Flow Chart