

JULY 2004

Peer Review of Asset Maintenance Standards

Waikanae & Otaki Rivers

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FOR FURTHER INFORMATION

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1. Introduction

Annual Peer reviews are undertaken of river asset maintenance programmes in the Wellington and Wairarapa areas. The peer reviews provide an audit of maintenance standards and procedures. The reviewers undertake inspection of randomly selected sites from the River Schemes Asset Registers. Waikanae and Otaki River Schemes in the Kapiti Coast were selected for peer review this year.

Maintenance responsibility for these assets lies with the Flood Protection Group.

2. Waikanae River

The Waikanae River Scheme works extends from the river mouth for a distance of 5.5 kilometres to State Highway 1 Bridge, and is managed by the Wellington Regional Council. The main purpose of the scheme is to provide flood protection to the Waikanae Township and rural floodplain area.

The Wellington Regional Council, together with the Kapiti Coast District Council and the Waikanae community, have developed the Waikanae Floodplain Management Plan (WFMP). The cost of the capital works in the Plan is estimated at \$6.5 million.

For the purpose of this audit the following 3 sites were inspected.

2.1 Sunny Glen RB

Five rock groynes, toe rock lining and a series of driven rail iron and timber permeable groynes had been constructed at this site in 2001 in the implementation of Capex works in the Floodplain Management Plan. Extensive bank erosion had occurred here during the October 1998 floods threatening the houses nearby. Large rock had been dumped during the floods as an emergency measure. Thereafter temporary repairs had been carried out by channel realignment (cross blading) and construction of a series of rock barbs. The lost area had been reclaimed and planted with natives and willows along with the construction of the rock groynes and permeable groynes. Realignment of the river channel through council owned land on the LB was planned in order to achieve the designed width and alignment at this site. At least some of the trees on the inside of the bend should be removed as soon as possible as part of this planned retreat.

The present rock groynes and rock lining appeared to have consolidated well and were in good condition. Only the groyne no 5 appeared to have lost some toe rock which could be easily rectified under the annual maintenance programme. The natives and willows planted between the groynes in the reclaimed area had consolidated well and were in good condition. The review team endorse the actions taken at this vulnerable site to repair flood damage and improve the protection standard for the houses nearby.

Condition rating for all groynes and toe rock lining is 2 except groyne No 5 which is given a rating of 3.

2.2 Maple Lane RB

This was another site which had suffered flood damage during the October 1998 floods. There had been severe bank erosion threatening the houses nearby. Here too a similar approach to Sunny Glen had been adopted. Four rock groynes had been constructed under the WFMP capital works. Temporary repairs had been carried out immediately after the 1998 floods with the construction of a series of rock barbs. Rock from these barbs had been later salvaged along with new rock to construct the present rock groynes. The area eroded during the floods had been reclaimed and planted with willows and natives. A rock ramp type weir structure constructed for grade control was visible above the rock groynes. Consultation with affected parties had commenced regarding realignment of the river channel on left bank to ease the corner and to fit with the designed alignment.

Overall the rock groynes were in good condition. However groyne no 2 & 3 appeared to have lost some rock especially at the toe and needed replacement. Some willow trees planted above the groyne number 3 were being undermined. Reviewers agree with the plans to plant more willow trees between groynes and to realign the river to satisfy the design alignment requirements. Reviewers would suggest that the actual design alignment may require some review. Reviewers reckon addition of another groyne between groyne no 2 and 3 would enhance the protection standard and prevent the undermining of planted willows.

Condition rating for all rock groynes is 2 except for groyne Nos 2 & 3 which are rated

2.3 Kauri - Puriri Stopbank

This is a key asset of the Waikanae River Scheme which provides flood protection to the Waikanae township. The present stopbank carries a 100yr standard of flood protection and had been constructed to replace the earlier stopbank which offered only a 10yr standard of protection. The stopbank was being maintained in an excellent condition. When the new stopbank was constructed the river in this reach had been straightened and widened. Borrow areas for the new stopbank and the old river channel had been successfully converted to a reserve to enhance the environment. The whole area was now an asset to the community.

The review team considers that the stopbank is being maintained to a high standard..

Reviewers condition rating for the stopbank is 2.

3. Otaki River

The Otaki River Scheme covers the length of the river from the lower gorge to the confluence, a distance of 11.5Km and is managed by greater Wellington Regional Council. The River Scheme provides flood protection to the Otaki township, the rural floodplain area and the State Highway 1. The Otaki Floodplain Management Plan (OFMP) has been developed by the Regional Council with input from the Kapiti Coast District Council and the Otaki community and set out the Scheme strategy and capital works requirements estimated to cost \$12 million.

3.1 Chrystalls Bend Stopbank

This is a significant asset in the Otaki River Management Scheme since it is crucial for the flood protection provided to the Otaki township. The stopbank had been upgraded to a 100yr standard under the OFMP. Heavy rock lining had been carried out and was being extended to cover the full length of the right bank bend in order to stabilise the river alignment at this location.

The stopbank was being maintained in a good condition. The stopbank had been fenced out and no public or vehicle access was allowed except for maintenance purposes which was good. Some minor surface rutting was observed in some parts of the stopbank apparently due to cattle crossing. It was learnt that there was an obligation on the part of the Regional Council under an agreement reached with the adjacent landowner to allow cattle to graze the stopbank. However the review team consider it desirable to limit access to cattle during winter in view of potential damage to the stopbank in the long-term.

Reviewers condition rating for the stopbank is 2.

3.2 Upper Rahui RB

This was a Capex project completed under the Otaki Floodplain Management Plan. The completed works consisted of realignment and reconstruction of the stopbank further inland, widening of river channel through gravel extraction, construction of debris fences and planting of willows for edge protection. At present however there was no gravel extraction allowed because of concerns for bed degrade. The shrub willows planted had established well and appeared to have worked well in catching silt. At the time of inspection willow poles had been planted in front of the shrub willows with the intention to establish a buffer of willow trees.

Completed works were in good condition. Some flood debris on the beaches needs to be removed. Reviewers are happy with the overall maintenance standard of the assets at this location. Review team condition rating for debris fences and planting is 2.

3.3 Below Winstones RB - Toe rock lining

This is another Capex project completed under OFMP. There had been extensive bank erosion at this site in 1998 floods. The eroded bank had been reclaimed by filling with river gravel and 360m length of bank edge protected with toe rock lining.

Rock lining was in a good condition and no urgent maintenance was required. Minor slumping of rock was observed at one location but this should be easily corrected under the annual maintenance programme. Reviewers condition rating for this asset is 2.

3.4 Rangiuuru Floodgates RB

The new culvert and twin aluminium flood gates had been constructed to alleviate flooding concerns during high tide for the houses in the vicinity. The old timber floodgates which were still operating had been found to be inadequate during high tide to drain the area resulting in flooding and inconvenience for the residents in the area. The new floodgates, the old floodgates, the handrail and the surrounding area were being maintained in an excellent condition.

Reviewers condition rating for this asset is 2.

4. Summary

Three sites in Waikanaie scheme and four sites in Otaki scheme were inspected. These sites were randomly selected from the asset inspection sheets. Inspection of these sites is considered to provide a representative overview of scheme maintenance standards. Scheme inspection sheets, and maintenance checklists were also provided.

A new feature this year was the revised asset inspection sheets which provided a comprehensive coverage of asset maintenance inspection/observation and recording. The revised sheets were a significant improvement since they provided space for the recording of not only the observations but also the action decided. The information gathered under the newly introduced asset maintenance sheets would facilitate monitoring of asset maintenance. They provided details of the inspection date, the name of the inspecting officer and certification of action taken by the asset manager.

Significant progress had been made with the implementation of Floodplain Management Plan Capital Works in both Waikanae and Otaki rivers. Overall adequate resources are being applied to maintain scheme assets. The opinion of the review team is that the assets are being maintained to an adequate standard.

5. Photographs of sites visited

5.1 Sunny Glen rock groynes



5.2 Maple Lane rock groynes



5.3 Kauri Puriri stopbank



5.4 Upper Rahui - Shrub willows



5.5 Below Winstones RB - Toe rock lining



5.6 Rangiuuru Floodgates

