



Report 09.141
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Committee Hutt River Advisory Subcommittee
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Maoribank riverbed investigations

1. Purpose

- To update the Subcommittee on progress made with the Maoribank riverbed investigations.
- To obtain the Subcommittee's recommendation to implement the programme of mitigation measures.

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

At the September 2008 meeting, the Subcommittee was presented with a risk assessment of the Maoribank riverbed degradation (section 7, report 08.660). This risk assessment was completed as the first stage of the investigations into the riverbed degradation. The investigation report described the risks to the Maoribank reach, the process followed and the outcomes of the risk assessment. The risk assessment identified three areas that are at high risk from erosion damage; the Totara Park stopbank, Harcourt Park and the State Highway 2 berm. In summary, the reach from the Maoribank bend to the Norbert Street Footbridge is at high risk from erosion damage within the next five years and the reach from Totara Park Bridge to the Maoribank bend is at high risk from erosion damage within the next 20 years.

4. Mitigation options

During the second stage of the study, mitigation options were investigated separately for each reach and developed to provide the Hutt River Floodplain Management Plan (HRFMP) specified 440 year flood protection. **Attachment 2** provides a summary of the technical report.

4.1 Maoribank bend to Norfolk Street Footbridge

This is the most constrained reach of the Hutt River, with flood protection infrastructural assets, private property and services very close to the river. This reach was identified through the stage one risk assessment as being at high risk from erosion damage within the next five years.

Mitigation options investigated, included:

1. Relocation of the Totara Park stopbank. \$9.3 million (including property purchase).
2. Sheet piling of the left and right banks. \$8.5 million.
3. Rocklining of the left and right banks. \$7.5 to \$10 million (dependent on tonnage of rock placed).
4. Construction of a 'holding measure' within the next five years to secure the bank edge and later carry out additional works to upgrade the holding measure to meet the minimum HRFMP standard. The holding measure would involve infilling the erosion 'gut', constructing a rock ramp upstream of the bend and strengthening the existing structures at a total cost of \$1.69 million. Further works could then be programmed within the existing HRFMP programme to continue to strengthen the edge protection. The work already in the HRFMP includes building another rock ramp near the foot bridge and infilling an erosion gut below the bend at a total cost of \$980,000.

While the risk assessment has identified the need for works in this reach as high, they are still not as urgent as other works already programmed for the Hutt River such as the Boulcott Stopbank and the City Centre Reach upgrade. We have therefore recommended Option 4 as the costs are within what is already budgeted in the LTCCP and has the flexibility to be implemented in two stages. The proposed stage 1 works, the holding measure, will also form part of the stage 2 works required to provide the minimum HRFMP standard.

4.2 Totara Park Bridge to Maoribank bend

This reach was identified through the stage one risk assessment as being at risk from erosion damage within the next 20 years.

The widening of the river channel to the design channel alignment was investigated as part the initial HRFMP investigations; this work was revisited and quantities and rough order costs determined. The development of this channel would involve the removal of all existing vegetation along the right bank, and the re-establishment of a new buffer zone on the grounds of Awa Kairangi Park. Costs were in the region of \$2.8 million with commercial recovery of the excavated gravel material and \$6.4 million without recovery. A new rock lining would also be required to protect the right Totara Park Bridge abutment, and is included in these costs. Priority of this work will be determined by the HRFMP.

Continued strengthening of the existing State Highway 2 rockline and reinforcement of the State Highway 2 roadway embankment through vegetative methods was also investigated. Costs were in the region of \$280,000 and \$60,000 respectively and will be implemented through operational work programmes.

These maintenance works will be jointly funded by GWRC and the NZ Transport Agency under the provisions of the River Works Agreement (RWA). The RWA is due to expire in 2011. We are currently in discussion with NZTA to extend the agreement for another term.

4.3 Recommended mitigation measures

The recommended mitigation measures are outlined below, in order of priority, for the Maoribank bend to Norfolk Street Footbridge reach. These measures are shown on **Attachment 1**. These measures are proposed to hold or secure the bank edge until such time as the full upgrade can be undertaken within the priorities established in the HRFMP.

Year	Structural mitigation option	Cost
2009/2010	Infill 'gut' at XS 2300	\$140,000
2013/2014	Construct rock ramp at XS 2330	\$1.4 million
2014/2015		
2014/2015	Underpin existing right bank lateral basket work	\$150,000
Total required for urgent works		\$1.69 million
Beyond 2014/2015	Construct rock ramp at XS 2370	\$770,000
Beyond 2014/2015	Infill 'gut' XS 2260	\$210,000
Total required to ensure minimum HRFMP standard is achieved		\$980,000
Grand Total		\$2.67 million

5. Budget

A budget of \$1.5 million is provided for in the draft LTCCP 2009/2019, spread over the 2013/2014 and 2014/2015 financial years. We believe we will be able to accommodate the recommended urgent works expenditure of \$1.69 million (an additional \$190,000) within this LTCCP period by some adjustments to other works programmes. The further expenditure of \$980,000 will be able to be programmed in at in future LTCCP rounds in 2012 or 2015.

Funding for the Totara Park Bridge to Maoribank bend works of \$2.8M will also be programmed in future LTCCP rounds within a priority determined by the HRFMP, with the exception of the State Highway 2 rockline. The continued strengthening of the State Highway 2 rockline will be done as

required, and will continue to be funded from operational budgets and NZTA contributions. The work to strengthen the State Highway 2 embankment through vegetative means would also be funded from operational budgets as part of the ongoing environmental enhancement of the Hutt River.

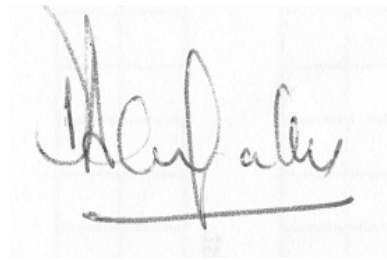
6. Recommendations

That the SubCommittee:

1. **Receives** the report.
2. **Notes** the content of the report.
3. **Recommends** to the Catchment Management Committee that the mitigation measures be implemented in accordance with the recommended programme.

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Attachment 1: Plan of proposed mitigation measures.

Attachment 2: Executive Summary Hutt River Maoribank erosion study – Stage 2 Risk Mitigation.