

Report to the Hutt River Floodplain Management Advisory Committee
from Daya Atapattu, Project Leader Hutt River Floodplain Management Plan

Hutt River Floodplain Management Plan : Project Leader's Report

1. Purpose

To update the Advisory Committee on the status of investigations for the Hutt River Floodplain Management Plan (HRFMP).

2. Background

Investigations under the combined Phases 2 and 3 of the accelerated HRFMP, commenced in August 1998. The status of investigations in the last report to the Advisory Committee, December 1998 was:

- Establishment of consultative and decision making framework complete.
- Scope and programme for HRFMP complete.
- Identification of draft objectives and generic options for HRFMP complete.
- Scoping study for flood defences investigations complete.
- Hydraulic models review and channel management investigations commenced.

The investigations on all major activities are currently on track for adopting a design standard by June 1999. Investigations on the Environmental Strategy and non-structural options are also proceeding, to be completed by June 2000.

A detailed explanation of the work involved and progress made in the river channel management investigations is reported separately at this meeting. The detailed outcomes of the stopbank upgrade investigations and options evaluation will be reported at the next meeting.

The status of the investigations of the project components is described below.

3. Consultation Process

The first newsletter providing background to the project and seeking feedback on the draft objectives and options was published on 23 March 1999. The next newsletter with information on a Design Standard is due in early May 1999.

Several meetings were held as a part of the consultation process. The project leader and the public involvement consultant met with the combined Rotary Clubs on 3 March 1999. The chairperson of the Wellington Regional Council's (WRC) Landcare Committee met the Works and Services Committee of Upper Hutt and Councillors of Hutt City on 24 and 25 March 1999 respectively.

The progress and scope and strategy on consultation are detailed in Report 99.148 on this order paper.

4. Project Objectives and Options

The draft project objectives and a list of broad adjustment options were endorsed by the Advisory Committee for public consultation in December 1998. They are included in the newsletter published on 23 March and public comments requested by 7 April 1999.

5. Design Standard

Investigations for the design standard are proceeding with the various options and corresponding cost estimates due for completion by end of April 1999. The evaluation of options will be completed in early May and recommendations on the Design Standard will be reported to the Advisory Committee on 28 June 1999. The process for achieving a design standard is detailed in Report 99.147.

The following summarises the status of investigations for the design standard.

5.1 Review of Technical and Economic Models

Mathematical models were developed during Phase 1 of the HRFMP to assist in options investigations. The software and hardware platforms for these models have changed and the models need updating to reflect the changed circumstances and to simulate flooding under the four options considered. The required improvements are being carried out by Richard Minson who has returned to the Flood Protection Group for this purpose. The present position of proposed improvements is:

Model	Description	Present Position
Mike 11 River Channel	Simulates floods in the river corridor and provides estimated water levels for various flooding scenarios	Complete
Mike 11 Floodplain	Simulates flooding on the floodplain and provides flood levels at identified locations	In progress
MIKE 11 GIS	Produces flood extent maps, and flood depths at identified locations on the floodplain	In progress
FLODAM	Uses depths from MIKE11 GIS model to estimate damages under various flood scenarios	Complete and needs to be tested

5.2 Development of Structural Options

The structural investigations will identify options and costs for improving the existing stopbank system, to meet the requirements for each design flood considered. These investigations are being carried out by Beca Carter Hollings and Ferner Limited under the management of Malcolm Abernethy, Senior Engineer, Flood Protection Group.

Deficiencies in the existing system in relation to geometric, hydraulic, stability and seepage conditions have been identified. The locations of utilities have been mapped. The consultant has prepared a range of solutions, which can be applied to upgrade the flood defences. The consultant is presently applying the developed solutions to meet each upgrade option considered. Detailed cost estimates for each option will be completed by 16 April 1999.

5.3 Channel Management Options

Channel Management investigations will identify the options and costs for improving the river channel to meet the requirements for each design flood considered. Stable river channel alignments, edge protection measures and their application to the range of design floods will be considered through these investigations. WRC Assistant Engineer, Mark Healey, with advice from consultant Gary Williams, carries out the investigations.

Identification of stable alignments and protection measures has been completed. The application of protection measures to each of the design flood options and cost estimation is in progress. The target date for completing the estimates is the end of April 1999. A detailed explanation of the work involved and progress made is contained in the Report 99.137.

5.4 Other Flood Mitigation Measures

These investigations will assess other methods for reducing flood flows and lowering flood levels in the river and on the floodplain. At present, the investigations will be limited to detention reservoirs in the upper catchment and the raising or widening of bridges and culverts through the railway embankment.

Investigations will be at pre-feasibility level to assess effectiveness, produce rough order of cost estimates and prepare brief statements of environmental effects. Consultants, Connell Wagner Limited, were appointed for this study and the estimates will be available by the end of April 1999.

5.5 Options Evaluation for Design standard

The design floods considered for the design standard will be evaluated using a number of criteria, which include; total costs, saved damages and environmental and social effects. The costs of saved damage and residual flood damage for each option are being estimated at present. Capital cost estimation is also proceeding for each of the components discussed above. The costs of operating and maintaining, and to repair flood damage will also be considered for evaluation. The assessment of environmental effects of each upgrade option is in progress and will be completed by the end of April. The design standard evaluation will be completed by early May 1999.

6. Non-structural Options

The aim of these investigations is to identify measures that can be adopted in areas liable to flood to minimise the damages and their impacts. A working group was set up with officers from WRC, Hutt City Council and Upper Hutt City Council to overview this work. The working group is presently considering measures that may be appropriate in Hutt Valley.

A consultant will be appointed to review and report on approaches and practises in other countries. The procedures adopted in other areas of New Zealand will be reviewed within the Flood Protection Group. Specific measures relevant to the Hutt Valley will be developed and collated after adopting the design standard in June 1999. WRC Resource Planner, Alistair Cross, directs these investigations.

7. Environmental Strategy

The Environmental Strategy will set a vision for the Hutt River Corridor and its immediate connections. The investigations will identify and recommend measures for preserving and enhancing the Hutt River environment, in a way which is compatible with flood protection objectives. The strategy will also provide a framework, which will ensure that flood protection environmental initiatives are contributing to wider environmental goals. A working group for the Environmental Strategy has been set up and has now met twice. Members of the working group include representatives from Iwi, both Hutt and Upper Hutt City Councils, Department of Conservation, WRC (Regional Parks, Environment Division and Flood Protection) and Fish and Game.

Existing sites of importance for cultural and heritage values, recreation and ecology have been located and marked on aerial photographs. Work to identify issues that the Environmental Strategy will address, and opportunities for environmental enhancement, has begun. Issues raised to date include conflicting uses, responsibility for maintenance, vandalism and litter. Resource Planner, Alison Newell, directs these investigations.

8. Construction

8.1 Nash Street

Design of the Nash Street Protection Works was completed in January. Resource Consents for construction have been granted. Supply of rock to the Nash Street site (for construction of the seven rock groynes) is well underway and will be completed by the end of April. Dixon and Dunlop have been appointed to the construction contract, construction will start in early April and will be completed by June 1999.

8.2 Flood Damage Repairs

Flood damage repairs and capital improvement works for the Hutt River worth \$2.2 million were approved by the WRC in December 1998. The repair works are progressing well and the target for completion of all works is June 2000. Report 99.162 gives a full outline of progress to date.

9. Recommendation

That the Hutt River Floodplain Management Advisory Committee receive this report and note its contents.

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