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Report to the Landcare Committee
from Geoff Dick, Manager Flood Protection

Waitohu Flood Hazard Assessment

1. Purpose

To seek the Committee's endorsement of the scope and programme for the proposed Waitohu Flood Hazard Assessment, and to recommend an increase in the project budget from \$95,000 to \$120,000.

2. Background

Council's current 10 year plan "*Towards a Greater Wellington 2000–2010 : 2002 Update*" provides for the assessment of the flood hazards from a number of smaller rivers and streams. This work follows the completion of FMPs for the Hutt, Otaki and Waikanae Rivers.

To date, we have completed assessments of flood hazards from the Wainuiomata River and the Mangaone Stream. The proposed Waitohu investigation, outlined in this report, is the next project in the series. The Council's plan also includes provision for investigation of the flood risk in the Mangaroa Valley in 2004/05, and the Pinehaven Stream in 2006/07.

This Council inherited responsibility for the management of the Waitohu Stream from the former Manawatu Catchment Board following local government reorganisation in 1989. Prior to 1989 the Waitohu Stream was part of the former Otaki River Scheme, and was managed in accordance with Scheme objectives set down in 1948. The Otaki Scheme was last reviewed in 1983. Since Council assumed responsibility for the Waitohu Stream in 1989 we have continued to manage the Waitohu Stream in accordance with the former Otaki Scheme proposals. Management has consisted mostly of an annual channel maintenance programme with an expenditure of about \$25,000 per annum.

The Otaki FMP completed in 1998 does not include policies for the future management of the Waitohu Stream and its flood risk, except where the flood risk interacts with the Otaki River floodplain such as at Convent Road and in Rangiuru. However, Council approved a review of its management of the Waitohu stream following consideration of Report 01.202: Kapiti Minor Watercourses - Status Report by the Committee in March 2001. This flood hazard investigation is therefore potentially the first stage in Council formulating a new plan for managing the Waitohu Stream.

3. The Existing Situation

Flood Protection staff have become aware of a number of management issues since Council assumed responsibility for the Stream 13 years ago. Management issues include:

- limited flood capacity of several bridges crossing the Waitohu Stream.
- landowners' concerns over river bank erosion in the middle reaches.
- flooding of State Highway 1, and downstream farmland.
- an apparent build-up of gravel in the channel below the Main Trunk Railway line that is considered to exacerbate the flood risk in the immediate vicinity.
- flooding of houses in the Convent Road area. There have been at least four flood events that have significantly affected properties in this area since 1989.
- ongoing debate over the need for guidelines for mouth cutting.
- the emergence of the Waitohu Stream Mouth Care Group.

Before these issues could be addressed a better understanding of the flood hazard, gravel and alignment management issues, and the community's aspirations is required.

It should be noted that some preliminary investigation work was completed as part of preparing the Otaki Floodplain Management Plan. Nonetheless, this flood hazard assessment is the first detailed review of the hazard and of the historical management approach for the stream.

4. Project Outputs

The key proposed outputs of this project are:

By 30 June 2003 (interim targets):

- Updated flood hazard maps for the Waitohu floodplain.
- Hydrological and hydraulic models that can be used for flood warning, improvement works design (if appropriate) and assessment of any resource consent applications.

By June 2004 (project completion):

- A summary report outlining the nature of the flood and erosion risk, a review of current management practices and the communities aspirations for the future management of the Waitohu Stream.

Note the summary report will **not** consider options for addressing the identified flood and erosion hazards. However, depending on the findings of the investigations and the community reaction to the findings, the report may recommend that further phases be initiated to identify, assess, adopt and implement options.

5. Project Tasks

The project tasks are summarised in **Attachment 1** to this report. Key investigation topics include:

- stream cross-section survey. This will update the cross-sections last surveyed in 1992.
- the collation and summarising of available information on historical flood events and on the historical management of the stream. The archive produced will be used as a reference document for other tasks.
- hydraulic modelling of the stream/floodplain and preparation of flood hazard maps. Although the existing computer model developed for the Otaki floodplain covers the Waitohu area, it is at a broader scale. The model that will be built in this assessment will be at a more detailed scale and will also incorporate updated data.
- hydrological assessment. A model of the flood hydrological system will be produced and be used to estimate design flood inflows.
- sedimentation and river morphology assessment. This will provide an understanding of sediment transport and supply, an appreciation of erosion patterns and assess the stream's responses to floods and river works.
- assessment of actual and potential flood/erosion damages. This will help provide an appreciation of the scale of the flood risk.
- consultation with the community and identifying relevant environmental issues (see below). This will help identify values and aspirations with respect to the management and use of the stream, and adjacent floodplain, and will help identify issues that may impact on options for management of the flood hazard.

6. Consultation

Proposed consultation tasks include:

- a press release on the scope and programme of the flood hazard assessment.
- individual stakeholders meetings. Meetings will be held with iwi, landowners, stakeholder groups and agencies to explain the scope and programme of the flood hazard assessment, to confirm or identify issues and to identify further information sources.
- letters to landowners regarding the cross-section survey, where access is required.
- a community meeting, involving all stakeholders, in the latter stages of the assessment to present preliminary findings.
- release of the final summary report on the investigations, following its presentation to the Landcare Committee and its adoption by Council.

7. Programme and Budget

The table in **Attachment 1** shows the budget and timing for key deliverables.

The project was originally scoped in 1995 when the budget was established. Given the time lapse it has been necessary to re-scope the project and prepare a new estimate. The key changes from the scope prepared in 1995 are:

- the addition of a consultation component.
- the preparation of a management history archive, and;
- a more extensive assessment of sedimentation and river morphology.

The consultation is necessary to ensure that all issues are identified, and that the project and its findings have the support of and is fully appreciated by the community. The archive document will provide a useful reference for the investigations – in particular river management history, sedimentation and river morphology, hydraulic modelling and mapping, and the damage and loss assessment. The information will also prove vital for public presentation of the Waitohu flood and erosion hazards.

The sedimentation/river morphology assessment has been increased in scope in recognition of the ongoing gravel build up in the stream, the concern by landowners over erosion and the ongoing debate over the management of the mouth.

The project budget will need to be increased to accommodate the increased scope of the work. An extra \$25,000 would be spent during the 2003/04 year as shown in the table below. The expenditure in this current financial year would remain unchanged.

Waitohu FHA	Total Cost '000	2002/03	2003/04
Existing Budget	95	65	30
Proposed Budget	120	65	55

8. Communication

It is proposed that a press release be prepared to advise the community of the Waitohu investigation immediately following the Committee's consideration of the report.

The Committee should also note the proposed consultation elements included in the project.

9. Recommendations

That the Committee:

- (1) **Receive** the report.
- (2) **Note** the contents of the report.
- (3) **Endorse** the scope and programme for implementing the Waitohu Flood Hazard Assessment project.
- (4) **Note** that the draft LTCCP will include an increase in the 2003/04 budget to provide a total project budget of \$120,000.

Report prepared by:

Approved for submission:

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Attachment 1 : Waitohu Flood Hazard Assessment Task Schedule