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Report to the Landcare Committee
from Phillip Purves, Senior Engineer, Flood Protection Group

Mangaone Stream Flood Hazard Assessment

1. Purpose

To advise the Committee of the outcome of the Mangaone Stream Flood Hazard Assessment investigations.

2. Background

The Mangaone Stream is subject to flash flooding which has caused relatively frequent disruption in the Te Horo area over the years, including closure or part closure of State Highway 1. The Kapiti Coast District Council (KCDC) has often sought advice in regard to the flood risk associated with specific development proposals and a number of residents in the area have approached the Council over recent years with concerns about flooding. As we expected these concerns to increase with continuing development in the catchment, we included a flood hazard assessment for the Mangaone Stream in the Flood Protection Group's programme of floodplain investigations.

Flooding from the Mangaone Stream can cover an extensive area, though overflow depths are generally quite shallow. Such flooding is very difficult to model, as some areas can be subject to flood depths that are only just comparable to the modelling accuracy, so flood extents cannot be determined from hydraulic modelling results alone.

3. Flood Hazard Results

Design flood levels have been determined from hydraulic analysis for several flood risk scenarios. Flood hazard maps have been produced to show predicted flood levels together with the general extent of flooding for the various return-period flood events. Flood depth contours are outlined on the flood maps, though these are generally for less than 0.5 metres depth beyond the main channels.

The consultants' assessment of the main channel erosion potential has indicated that a general erosion hazard corridor of 20 metres width should be defined on each side of the stream. In areas of particular instability, they suggest that this figure be increased by two to three times.

4. Use of the Flood Hazard Information

We will provide KCDC with the flood hazard information to assist with the consideration of future building and landuse development proposals in the area. It is important, therefore, that the flood extent maps represent the known flood risk as accurately as practicable.

Hence, we intend to retain the flood maps in draft form until such time as the flood extents for the marginally floodable areas have been corroborated. The necessary checks will also include detailed consideration of the flood predictions in the vicinity of the State Highway and overflow channel system.

Some interpretation of the flood hazard information will always be needed in particular instances, but it is our intention to ensure that the potential risk is not unduly ignored in the mapped flood extents.

5. Community Connection

A Press Release was issued in March 2001, advising that the Regional Council had let a contract for the preparation of the Mangaone Stream Flood Hazard Assessment, and asked anyone concerned about flooding to make their concerns known. The consultants also made direct contact with all landowners adjacent to the stream, where ground survey work was to take place.

We intend to reconcile individual flooding problems with affected landowners prior to finalising the flood hazard maps and will arrange for community-wide consultation on the flood hazard results. At this stage it is intended that community consultation will occur later this year.

6. Budget Issues

A rebudget of \$20,000 to 2001/02 was approved to allow for the completion of the Mangaone Stream study early in this new financial year. This amount was to cover the consultants' final invoice and associated staff time within the Flood Protection Group.

Detailed costing of the flood map corroboration work has not yet been carried out, but it is likely that this work can be completed with relatively minor additional expenditure above the agreed \$20,000 rebudget. We expect any additional costs to be well below the savings already made on the overall project.

7. **Recommendations**

That the Landcare Committee:

- (1) Receive the report and note the general extent of flooding identified by the Mangaone Stream Flood Hazard Assessment.*
- (2) Note that refinements are to be made to the flood hazard maps.*
- (3) Note the Flood Protection Group's intention to consult with the community by Christmas 2001, in collaboration with the Kapiti Coast District Council.*

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