



Report 09.287
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Committee Catchment Management Committee
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Waikanae Floodplain Management Plan 10 year review – progress report

1. Purpose

To update the Catchment Management Committee on progress made with the Waikanae Floodplain Management Plan 10 year review.

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

The Waikanae Floodplain Management Plan (WFMP), completed in 1997, recommends structural and non-structural measures to reduce the flood risk to the Waikanae community. Greater Wellington has adopted a 40 year time frame to fully implement the WFMP with reviews proposed every 10 years.

The purpose of the first 10 year review is to evaluate the performance of the WFMP to date and assess whether there is any need to change the outcomes and implementation process.

Initially the review will be carried out in 2 stages. Stage 1 includes reviewing the hydrology and hydraulics of the Waikanae River and evaluating the effectiveness of the completed structural, river management and non-structural measures contained in the FMP. Stage 2 involves a detailed analysis of the outcomes from Stage 1 to determine whether there is any need to change the methods and procedures for implementing the WFMP.

The proposed scope, process and timeframe for the 10 year review of the WFMP were previously detailed in Report 09.04 and endorsed by the Catchment Management Committee at their meeting on 3 February 2009.

4. WFMP Review– Progress

Stage 1 of the review is substantially complete. A brief summary of the hydrology and hydraulics is contained in Attachment 1.

Stage 2 has commenced, with a series of meetings and workshops held by the project team to interpret the findings from Stage 1. Once this is complete, a detailed report will be prepared on the performance of the WFMP during the last 10 years, inclusive of recommendations for future works. This stage will include consultation with interested and affected parties through newsletters and meetings.

5. Key Findings of Stage 1 of the WFMP review

Good progress has been made in implementing the WFMP in the last 10 years and the project is on track for completion by the target date of 2040. By June 2008, the project was 42% complete providing 68% benefits in terms of total damages saved. Attachment 2 provides summary progress tables.

An initial summary of the work methodology and effectiveness are detailed in Attachment 3 of this report. The main highlights are:

5.1 Hydrology/Hydraulics

The hydrologic investigations completed by NIWA included reviewing the 100 year flood design standard, using the additional river flow information available since 1992 and estimating the potential climate change impacts on the design standard. The estimate for the 100 year return period flood flows has remained the same.

The climate change impacts on the 100 year flood are estimated to be an increase in the order of 10% and 20% in 50 and 100 years respectively.

The flood levels along the river channel were estimated using an improved hydraulic model. This model was calibrated using the 2005 flood. Results show that river channel flood levels have increased by up to 500mm above El Rancho and up to 900mm below El Rancho, when compared to the 1992 results. The effects from climate change would result in a further increase of flood levels up to 200mm by 2040 and up to 700mm by 2090. Stage 1 investigations did not include any hydraulic modelling of the floodplain. This was last reviewed in 2002 as part of updating flood hazard information in KCDC's plan change 50.

5.2 District Plan measures

Good progress has been made in mitigating flood hazard through district plan measures. The Waikanae flood hazard was initially included in the Kapiti district plan in 1995 and later amended in 2002 to include revised flood hazard categories and to reflect benefits from the completed structural works.

Between 1995 and 2009, 83% of all (habitable) building consents issued in a flood hazard zone included a minimum floor level condition. Of these 74% are

specified to the 1 in 50 year level (by the building standard NZS3604) and 9% are specified to the 1 in 100 year level. In addition to these figures, GW has responded to many hundreds of queries on flood hazard information to Kapiti Coast District Council, developers and residents.

5.3 Stopbanks and River Management works

All river management works performed well, without any significant damage, during the 80 year flood that occurred in January 2005. All stopbanks were high enough to contain the 2005 flood except for the Otaihanga floodwall. The wall was overtopped by floodwater getting behind the flood wall through the local stormwater network and by overtopping from the river side. The 2005 flood showed that with certain combinations of mouth position, spring tides and storm surge, flood levels can be higher than have been designed for. The design levels in Otaihanga were based on a 100 year flood with 20 yr storm surge and the mouth exiting directly to the sea. We will now have to allow for a worse combination of events in our modelling and the setting of design heights for stopbanks than in the past.

5.4 Land purchase and environmental enhancement

The total land area in public ownership in the river corridor has increased from 71.45% to 76.56%. Land purchase has taken place primarily as a result of implementing the capital works programme.

Environmental enhancement of the river corridor has been achieved by the preparation and implementation of an environmental strategy, establishment of a close working relationship with the “Friends of the Waikanae River”, care groups and the development of planting plans. Achievements include the planting of over 50,000 native trees, access path improvements and construction of a footbridge across the river.

6. Issues for Stage 2

Key issues to be considered in Stage 2 of the review include:

- Dealing with climate change impacts on structural works and development in floodplain
- Improved (2 dimensional) hydraulic modelling of the floodplain
- Amending the district plan to further control the development in the floodplain by increasing the permitted floor level from 50 year to 100 year
- Pursuing river corridor land purchase
- Gravel aggradation in the tidal reach and upper catchment erosion control
- River mouth management

7. Programme

The current programme for completing Stage 1 of the WFMP review by March 2009 has been delayed mainly by complications with the revised hydraulic model results. The revised programme is as follows:

Waikanae FMP review	Task	Completion date
Stage 1	Review and evaluate the existing FMP	May 2009
Stage 2	Analysis, consultation and reporting	August 2009
Stage 3	Implementation of agreed changes	To be agreed

8. Communications

Formal consultation on the WFMP review will commence shortly. A newsletter providing the outcomes of the review will be distributed to interested and any affected parties. Much of the community consultation will be carried out with Friends of the Waikanae River and separate meetings (if required) will be held with, KCDC, Iwi, and DoC.

9. Recommendations

That the Committee:

- 1. Receives the report.*
- 2. Notes the content of the report*

Report prepared by:

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Attachment 1: Key findings of Stage 1 of the WFMP review

Attachment 2: Plan achievements to date

Attachment 3: Work methodology and effectiveness