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Report to the Landcare Committee
from Andrew Annakin, Divisional Manager, Landcare

Hutt River Floodplain Management Advisory Committee "Design Standard" Recommendations

1. Purpose

To comment on the Hutt River Floodplain Management Advisory Committee's Design Standard recommendations from its 20 September 1999 meeting.

To endorse the Advisory Committee's principal resolution on the Risk Based Design Standard and to recommend this to the Policy and Finance Committee for planning and budgeting purposes in the 2000 – 2010 Long-term Financial Strategy (LTFS).

2. Background

The 20 September Advisory Committee meeting was a decision making watershed representing a year's hard work by the Flood Protection Group. This followed the challenge set through the 1998/99 Annual Plan process to ensure that an implementation programme for the Western Rivers Floodplain Management Plans be available for consideration as part of the 1999/00 Long-term Financial Strategy review process. A recommended Design Standard[1] for the Hutt River is the key outcome from that exercise.

3. Sentiments of the Advisory Committee Meeting

The Advisory Committee discussion on the Design Standard is well covered in the meeting report. The resolutions reflect the public consultation feedback and perhaps also speak for the silent majority of assent. I am comfortable that, within the available budget and timeframe, the consultation was thorough and well targeted.

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[1] The design standard is defined as the maximum flood that can pass with acceptable security through a flood protection system; also called the design flood.

However, given the opportunities to comment via community newspaper inserts, leaflets, and a schedule of meetings, the actual number of responses was small.

Most submissions were from people with a specific interest in the Design Standard, e.g. riverside residents. The consultation feedback does not represent all "beneficiaries" and certainly not the Region. This, of course, was not the intention.

It was emphasised throughout the process that whatever the feedback on the Design Standard, the ultimate decisions on funding and the speed of implementation were for the Regional Council. This was stressed in the consultative material and at Advisory Committee workshops and meetings. Councillor Macaskill spoke directly to this at the two public meetings.

The consultation material has been criticised as complex and predetermining the outcome. While the information given was necessarily of a technical nature, we were careful to ensure that all options were fairly represented, including the "status quo". At the four meetings I attended, the overwhelming desire expressed was for a higher level of protection than exists now. Further, that the appropriate measures be implemented as soon as practicable.

4. The Design Standard Recommendations

The Advisory Committee agreed on a principal Risk Based 2300 cumec[2] Design Standard with the main stopbanks, bridges and other key structures constructed to meet 2800 cumecs.

This decision largely turned on the upper valley system already having stopbanks predominantly to the existing 2800 cumec design standard (set in the 1940s). The Advisory Committee recommends that this 2800 cumec standard apply to the principal system for stopbank height. However, the recommended overall Design Standard provides bank edge protection (against erosion) to the 2300 cumec level.

I have difficulty contemplating stopbanks in the lower valley to the 2800 cumec standard after the recent completion of the Ewen Floodway (2300 cumecs). However, apart from the consistency argument, the Advisory Committee's stopbank recommendation is really about accommodating future system enhancements, e.g. for climate change and the possibility of reduced flood return periods. It is more effective, and economic, to design stopbanks to a single standard, rather than having to revisit the footprint for more height later. The bank edge protection could be upgraded in the future, if required.

The Advisory Committee decision must also be seen against the desired speed of implementation. Our initial assumptions allowed any system upgrades to span the life of the Floodplain Management Plan – around forty years. Typically, the Plan would be reviewed every ten years. The recommendation that stopbanks be built, or upgraded, for 2800 cumecs sits well with this, e.g. to gauge the progress of Climate Change.

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[2] A measure of flow - cubic meters of water per second.

The Risk Based solution[3] identified a number of "hotspots". These occurred where economic compromises were recommended (e.g. reduced protection for the estuary area) or where engineering difficulties arose in achieving the higher Design Standard options, e.g. Belmont (Owen Street) in the lower valley and Gemstone Drive in the upper valley.

In reality, "hotspots" is a misnomer. While important to residents, these are really areas of localised design difficulty rather than points of overall system weakness – compared, say, to the Ava reach. The Advisory Committee generally sought a higher level of protection for the "hotspots" than that recommended by Officers on what was reasonably achievable from an engineering and economic stand point as well as the true risks – to lives. Again, this reflected the understandable self-interest of most submitters.

We took from the Advisory Committee discussion that while the overall inclination was to support the consultation feedback on the "hotspots", it was recognised that elements could be difficult to achieve, even inappropriate. They at least require further investigation and we have recommended this. It must also be noted that these investigations will add further pressure on an already stretched project budget.

The original Risk Based 2300 cumec Design Standard would cost an estimated $72.5 million to implement. With the modifications recommended by the Advisory Committee, the total estimated cost increases to $78 million (an extra $5.5 million).

5. Implementation Period for Proposed Works

The Advisory Committee supported the consultation preference for a 20–25 year implementation period. The closest previously modelled scenario was a $4 million per year capital spend; reflected in the Advisory Committee resolutions. Paul Tryon has now remodelled the new recommended total expenditure from the modified Design Standard and overlaid the 20–25 year window (**Attachment 1**). At $4 million per year, the additional budget requirement simply tags on to the end of the previously modelled implementation timeframe. However, if the programme extended to 25 years, the average required annual expenditure would be around $3 million.

As a guide on overall impact, the $2 million option could be handled within current Flood Protection resources, allowing for the various overlapping processes: design, consent, and construction (including environmental issues), plus the vagaries of flood events. A previously modelled $6 million per annum scenario would significantly impact on resources, more particularly, on the environment, and on security with significant areas of the flood protection system exposed at any one time.

If asked to pick a sustainable level of expenditure for Floodplain Management Plan implementation for the western region, it would be in a range of $2–$3 million per annum.

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[3] The Design Standard investigations and Risk Based recommendations are well covered in the 21 June report to the Advisory Committee (99.357).

Of course, how the Regional Council chooses to respond to the level of expenditure recommended by the Advisory Committee remains a political decision in terms of its Funding Policy, Treasury Management Policy and community preferences against many other priorities. This is why the critical link to the Regional Council's LTFS process was stressed through the consultative process.

Nevertheless, I believe the Advisory Committee process has been a success noting the brief to bring a costed and prioritised Design Standard recommendation to the Landcare Committee in time for consideration through the LTFS.

6. Communication Opportunities

The Advisory Committee outcomes and recommendations were part of a press release (taken up by the Hutt News, **Attachment 2**). Any subsequent recommendations from the Landcare Committee and any directions given will be covered through further press releases, community newspaper features and newsletters.

7. Recommendations

That the Landcare Committee:

(1) Recommend to the Policy and Finance Committee that the Risk Based 2300 cumec Design Standard, modified as recorded in Report 99.541 of the Hutt River Floodplain Management Advisory Committee meeting of 20 September 1999, be adopted for planning and budgeting purposes in the Council's 2000–2010 Long-term Financial Strategy.

(2) Note the Advisory Committee's recommended timeframe of 20–25 years (annual capital spend of $4 million per year) for implementing the Design Standard.

(3) Recommend to the Policy and Finance Committee that the Advisory Committee's Design Standard implementation timeframe (20–25 years, annual spend $3–$4 million per year) be considered along with all flood protection and other Council priorities through the Long-term Financial Strategy review.

(4) Ask the Advisory Committee to request officers to further investigate the recommended local area or "hotspots" Design Standard modifications, with respect to levels of protection, security, consistency and value for money.

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Attachment 1 : Rate Profile for: – 2300 Risk Based Design Standard
– 2300 Modified Risk Based Design Standard

Attachment 2 : Hutt News Article