



Report 06.529
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Committee Hutt River Advisory Committee
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Boulcott/Hutt stopbank feasibility study: Option evaluation outcomes

1. Purpose

- To advise the Advisory Committee on outcomes of the stopbank alignment options evaluation.
- To obtain the Advisory Committee endorsement of the proposed Round 2 consultation process and programme.

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

In November 2005 and March 2006, the Advisory Committee endorsed the scope and programme for the Boulcott/Hutt stopbank feasibility study. Round 1 consultation was completed in May 2006, and gave the community and stakeholders opportunities to comment on the selected alignment options and the evaluation methodology. Following Round 1 consultation the three basic alignments were refined and issues raised by the community were incorporated into the evaluation methodology.

4. Stopbank alignments

Attachment 1 shows the three basic alignments chosen for the study. The 'Blue', 'Green' and 'Red' alignments follow the eastern boundary, centre and the western boundary of the golf courses respectively. South of the golf courses, all three options follow the existing stopbank on the boundary of the Safeway Storage complex. A flood wall around the Safeway Storage complex was investigated as an extension to the 'Red' option.

3 sub-sections

For evaluation purposes, the total alignment length was divided into 3 sub-sections; Hutt, Boulcott and Safeway as shown in **Attachment 1**.

The Hutt and Boulcott sections are fully located within the respective golf courses. The Hutt golf course is privately owned land while part of the Boulcott golf course is on GWRC land. The existing stopbank in the Safeway section is on GWRC land.

These sub-sections can be combined in 27 different ways to form a stopbank alignment from Mills Street to Kennedy Good Bridge (KGB). Some combinations are not practical.

5. Feasibility cost estimates

Attachment 2 provides summary costs for each sub-section of each alignment option. These feasibility level costs, prepared by MWH NZ Ltd, are on the basis of a desktop study to compare the construction costs of the stopbank alignment options. The 'golf friendly' stopbanks include works required to incorporate golf course features into the stopbank enabling golf courses to function after the construction. The total costs for any alignment range from \$14 million to \$22 million.

6. Alignment option evaluation

Any of the options would protect the residential areas and the Hutt CBD to a 440 year standard. However, the project team in consultation with the community and stakeholders has identified a number of issues that need to be considered when making a decision. The challenge in this project is to select a preferred alignment that balances the benefits to the local community and golf clubs with the sustainability and project costs. A Multi-criteria analysis that would take into consideration the various advantages and disadvantages of each option across a wide range of attributes was used to evaluate the options.

7. Multi-criteria analysis (MCA)

Section 3 of **Attachment 2** provides details of the MCA process and the outcomes. The process, carried out by the project team co-ordinated by MWH NZ Ltd, included;

- Refining alignment options and preparing feasibility cost estimates for each option.
- Developing a set of attributes to incorporate all issues identified by the project team and the community.
- Scoring each option against each attribute and assigning weightings for attributes.

Section 4 of **Attachment 2** shows the list of issues to be considered and confirmed through public consultation and how they were amalgamated into the 9 attributes.

7.1 Attribute Scoring

Section 5 of **Attachment 2** shows how the project team scored the sub-sections of each option against the attributes. Scores were on a scale of 1 to 5 (1=Poor, 5=good).

Hutt Section

In the Hutt section, the Blue option scores high against all attributes except for 'the impacts on adjoining property'. However, the impact on adjoining property for the 'Hutt Blue' option is not as significant as for the 'Boulcott Blue' section. The stopbank height in the Hutt section is generally below 1 metre. The Red option had the poorest scores against most of the attributes.

Boulcott Section

All 'golf friendly' options in this section are expensive and all of them were assigned a score of 1 against the cost attribute. In this section the Red and Green options scored almost equally against all attributes and the total weighted scores are higher than that for the blue option.

Safeway section

Options for this section are limited because of the location of the Safeway storage complex in the floodway. The 'Green' option with the high point on the road shifted north causes less disruption to access to private properties than the 'Blue' option. This option scored high against most of the attributes. Although the cost of the 3.5 m high floodwall option between Safeway and sub-station appears to be the lowest at this stage, we believe that these costs are likely to increase once foundation conditions are known.

7.2 Attribute weightings

Section 6 of **Attachment 2** shows the weightings assigned to each attribute by the project team. 'Sustainability' and 'project costs' were given the highest weighting. Sustainability reflects the ability to respond to the future changes to the river system. The next highest weighting was given to the 'Upstream and down stream effects' which reflects any adverse effects on Belmont and other residential areas. 'Short term construction impacts' were assigned the lowest weighting.

7.3 Evaluation outcomes

The table below shows a summary of the total weighted scores for each option in each sub-section. A higher score means a better option.

Sub section	Option	Total weighted score	
		Golf Friendly	Engineering
Hutt	Red	2.6	2.6
	Blue	4.3	4.3
	Green	3.6	3.4
Boulcott	Red	3.1	3.7
	Blue	2.9	2.9
	Green	3.2	3.6
Safeway	Red	3.0	3.0
	Blue	3.4	3.4
	Green	3.9	3.9

These scores favour a combined stopbank alignment including ‘Hutt Blue’, ‘Boulcott Red’ or ‘Boulcott Green’ and Safeway Green. The total feasibility cost of this alignment option would be in the range of \$15 million to \$19.4 million.

Section 7 of **Attachment 2**, shows the ‘total weighted scores’ and ‘rankings’ for 27 possible combinations. An addendum to **Attachment 2** shows the sensitivity of outcomes to the Attribute weightings.

8. Comment

The project costs and the potential impacts of the stopbank upgrade on the Boulcott golf course are the two key issues arising from the feasibility study. At this stage, the project costs of a feasible alignment range from \$15 to \$19.4 million. The total budget available is \$6.3M. If the costs remain at this level, it would have major impacts on the GWRC’s implementation programme affecting the affordability and timing. However, we believe that project costs can be further refined following a more detailed design of the preferred alignment. GWRC will require this information to make decisions on affordability and implementing time frames.

At this stage, we propose to proceed with Round 2 consultation to select the preferred alignment. Once the preferred alignment is known on 30 November 2006, we will undertake a more detailed design on the preferred alignment to assess impacts on private properties and prepare more refined cost estimates.

In summary the process from here is;

- On 28 September 2006, the Advisory Committee will be asked to endorse the evaluation outcomes for consultation with the community and stakeholders.
- On 30 November 2006, the Advisory Committee will be asked to consider Round 2 consultation outcomes and recommend a preferred alignment to the Landcare Committee subject to more detailed design and a review of costs and affordability.
- Preliminary (more detailed) design of the preferred alignment to confirm construction and property impact issues and prepare more refined cost estimates on which a decision can be made. This will involve ground survey and geo-technical investigations along the preferred alignment. We expect this work would take six months to complete (June 2007).

Report PE 06.530 of this Order Paper provides details of the land and compensation issues arising from the feasibility study.

9. Round 2 consultation

Round 2 consultation will begin in October 2006 and will include;

- A newsletter with a brief description of the process and outcomes of option evaluation distributed to the local community including Belmont and stakeholders.
- On going meetings with the two golf clubs.
- A separate meeting with adjacent residents from Allen Street to Stellin Street to discuss the impact of the Blue option on their properties.
- A letter to the Hathaway Avenue residents advising them of alterations made to the green alignment following previous consultation with those residents.
- A public meeting where interested and affected parties can comment on the robustness of the option evaluation.
- Meetings with Safeway, TransPower and Hutt City Council officers

The outcomes of Round 2 consultation, with a recommendation on an alignment option, will be reported to the 30 November 2006 Advisory Committee meeting

10. Communication

A newsletter was distributed in July 2006, advising the residents and stakeholders on the outcomes of Round 1 consultation. Round 2 consultation will provide opportunities for residents and stakeholders to comment on the option evaluation outcomes. We will keep all interested parties and residents updated on the project progress through newsletters and individual correspondence.

11. Recommendations

That the Committee:

1. *Receives the report.*
2. *Notes the content of the report.*
3. *Notes that the Multi-criteria analysis favours a 'Hutt Blue', 'Boulcott Green' or 'Boulcott Red', and 'Safeway Green' alignment.*
4. *Endorses Round 2 consultation process and programme.*
5. *Notes that the feasibility cost estimates are significantly higher than the available budget and that further work will be undertaken to refine the cost estimates of the preferred alignment once that alignment is endorsed on 30 November 2006.*

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Attachment 1: Stopbank alignment option plan

Attachment 2: Multi-criteria analysis – Summary document