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Committee Hutt River Advisory
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Boulcott/Hutt stopbank feasibility study: Preferred alignment

1. Purpose

- To advise the Advisory Committee of the outcomes of the Boulcott/Hutt feasibility study Phase 2 investigations.
- To recommend to the Advisory Committee a preferred alignment for the Boulcott/Hutt stopbank.

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

3.1 Phase 1 Studies

Phase 1 of the feasibility study to determine a preferred alignment was completed in October 2006. In this phase, three conceptual alignments were considered and analysed by a Multi Criteria Analysis (MCA). The MCA process favoured an alignment which follows the eastern boundary of the Hutt golf course and then through the middle of the Boulcott course to join the existing alignment at Connolly Street. This alignment is currently known as the 'Green' alignment.

In November 2006, the Advisory Committee considered the MCA favoured alignment and submissions from the two golf clubs and decided that more information on the design and costs was required before a preferred alignment was selected.

3.2 Phase 2 Investigations

Phase 2 of the investigations commenced in March 2007, with the Advisory Committee endorsing three alignments, Red, Green and Blue, for further study. Phase 2 investigations were completed in August 2007 and the detailed information from Phase 2 presented to an Advisory Committee workshop on 13 August 2007.

3.3 Advisory Committee Workshop – 13 August 2007

The presentations to the 13 August 2007 workshop included;

- Programme and background information
- Engineering and planning issues
- Land and compensation issues
- An overview of economic and amenity assessment
- Total project cost estimates

The Committee consensus at the workshop was that sufficient information is now available for a decision on the preferred alignment to be made at its next meeting on 6 September 2007.

4. Description of the three Alignments

In phase 2, the design of the three alignments (Red, Green and Blue) was advanced for further assessment and to refine the costs. The stopbanks on all three alignments were designed to meet the HRFMP recommended 440 year flood standard. The following is a brief description of each of those alignments. A plan of the Red, Blue and Green alignments is contained in **Attachments 1, 2 and 3** respectively.

All three alignments are common at the downstream end from Mills Street to Connolly St. The existing stopbank will be raised by about 1.5 metres and strengthened. Connolly Street needs to be raised at the stopbank crossing and also realigned to provide safe access to Safeway and Transpower sites. The discussion of each alignment below therefore only refers to the section upstream of Connolly St.

The proposed stopbanks are a mix of ‘engineering’ and ‘golf Friendly’ stopbanks. The ‘engineering’ stopbanks will have 3.5 to 1 batters and 4 metre top width. The ‘golf friendly’ stopbanks incorporate golf course features onto an ‘engineering’ core and could be up to 0.5 metre higher than the design crest level of the ‘engineering’ stopbank. The ‘golf friendly’ stopbank designs applicable to each course were developed by the golf course architect in consultation with the two golf clubs.

4.1 Red alignment

The Red alignment is an engineered stopbank following a route on the landward side of Harcourt Werry Drive from Connolly St up to Kennedy Good Bridge. **Attachment 1** shows the footprint of the proposed ‘engineering’ stopbank on the Red alignment. The 3 to 4 metre high stopbank located close to the river in an area of fast flowing water will require river edge protections and stopbank surface lining to protect from erosion. The proposed stopbank fully utilises the GWRC owned land in the Boulcott golf course and the former Rentokil property. It will also require acquiring about 4.4ha of land from the HGC and about 0.15ha of land from the BGC.

The Red stopbank, exposed to frequent flooding and fast flowing water, will have a higher failure risk during an extreme event, and will also have higher long term maintenance costs when compared to other options located away from the river. The Red stopbank cuts off a significant ponding area and will lead to development pressure behind the stopbank limiting options available for future capacity increases. The need for future capacity increases could be driven by climate change, river changes such as increased aggradation or simply a demand for the higher standard of protection.

The stopbank will cut across 6 holes of Boulcott’s, 9 hole golf course making it unviable. The stopbank will also affect 6 holes of the Hutt golf course making it shorter. The Hutt course will also lose the existing practice fairway on the western boundary. The Red stopbank, however, will provide a high standard of protection to about 44ha of privately owned golf club land in the floodplain.

A sub option considered for the red alignment involved shifting the stopbank closer to the river and the 80 metre erosion hazard line. This would involve realigning about 600 metre of Harcourt Werry Drive and relocating a power cable and a fibre optic cable along the same length. The cost of doing this work was another \$1.0m and was not considered further.

4.2 Blue alignment

The Blue alignment follows the eastern boundary of both golf clubs adjacent to the residential housing and is constructed in a way that allows the stopbank to have some elements of the greens and tees on it. **Attachment 2** shows the footprint of the proposed ‘golf friendly’ stopbank on the Blue alignment.

The proposed works include extensive earthworks to incorporate 6 greens and 6 tees in the Boulcott section and one green and 4 tees in the Hutt section. The works include raising the ground levels by about 1.5 metre and widening the existing stopbank from Connolly Street to Hathaway Avenue, and construction of a new stopbank, about 3.5 metre high, from Hathaway Avenue to the Hutt clubrooms. The stopbank is about 1.5 metre high around the Illot Pond and less than 1 metre high from Illot Pond to Stellin Street. The Boulcott clubrooms have to be shifted to provide room for stopbank construction and the clubrooms will be raised at the same time to be above the 100 year flood level. The land required for the ‘engineering core’ of the golf friendly stopbank will be acquired by way of an easement. A concept plan for the stopbank around the Hutt clubrooms was developed in consultation with the HGC. The filling

required from Illot Pond to Stellan Street is minor and will be worked around most of the tees and greens without damaging them.

The Blue alignment also includes a low bank on the western boundary of the Hutt course to reduce the frequency of overflows from the Hutt River causing erosion damage and depositing debris. However, flood water will still backup from the downstream end of the course.

The Blue stopbank is well away from the river, fully utilising the existing floodplain, and has a lower failure risk during an extreme event than the Red stopbank. This is the only alignment that will enable both golf courses to continue play while retaining their separate identities. The stopbank will have a significant impact on the neighbouring residents from Connolly Street to Hathaway Avenue.

4.3 Green Alignment

The green alignment crosses the Rentokil site and then passes through the middle of the Boulcott Club land until it reaches the boundary with the Hutt Golf Club. At this point it follows the eastern boundary of the golf course adjacent to the residential land as with the Blue alignment.

Attachment 3 shows the footprint of the proposed stopbank on the Green alignment. The section of the stopbank within the Boulcott course will be an 'engineering' stopbank with the height varying from about 5 metres at the southern end to about 3.5 metres near the Hutt boundary. The Hutt section is the same 'golf friendly' stopbank as for the Blue alignment. The Green alignment also includes the low bank on the western boundary of the Hutt course to reduce the frequency of overflows from the Hutt River.

The land required for stopbank construction in the Boulcott course could be acquired by way of an easement or by purchasing the footprint and all of the land to the west of the proposed stopbank. An easement will be sought in the Hutt course as for the Blue alignment.

This alignment will almost fully utilise the existing floodplain and the flexibility to increase the stopbank capacity in the future will be retained. The stopbank as shown will provide a high level of protection to about 1.5 ha of land in the Boulcott course including the clubhouse. However, the stopbank will have a major impact on the Boulcott course. If the club continue to use the golf course, golfers will have to play over the stopbank on 6 holes. Minor modifications could be done to the stopbank and a few selected tees to make play less difficult. This stopbank is located away from the Boulcott residential boundary and so will have less impact on neighbouring properties.

4.4 Construction

The stopbank construction within the golf courses has to be staged and temporary greens and tees have to be constructed to enable play to continue during construction. A well established grass cover will be necessary before play can commence on any of the disturbed areas. The construction period for each alignment is about 3 years but would only affect each individual club for

2 years. Temporary works could be minimised if clubs agree to share facilities during the construction period.

The main access for construction would be from Harcourt Werry Drive. Depending on the alignment chosen, between 120,000 m³ to 200,000 m³ of fill will be imported to the site from the river channel or from local quarries.

4.5 Project costs

The total estimated project costs for each alignment are;

- Red alignment \$11.8 million
- Blue alignment \$15.2 million
- Green alignment \$10.1 million

These costs have come down from the rough order costs of \$15 million to \$19 million reported in phase 1.

The above are estimated total costs and include supplying fill materials, constructing stopbanks, Connolly Street roading works, relocating and improving services, golf course surfacing, stormwater upgrades, land and compensation, and temporary works.

Most of the \$ 5 million difference between the Blue and Green alignments is in the earthworks, golf course surfacing and compensation costs. The earthwork quantities to make the stopbank golf friendly for the Blue alignment in the Boulcott section are almost double that required for the Green option. The Blue alignment will involve reconstructing 7 greens and 11 tees whereas the Green will involve only 1 green and 5 tees. The Green option includes the purchase of about 7 ha of land from the Boulcott Golf Club but does not include any compensation payments to the BGC during construction and recovery periods. Both Green and Blue options include compensation costs to the HGC.

The Red alignment includes the costs of purchasing 4.4 ha of land from the HGC and compensation costs. It does not include any land purchase or compensation costs for the BGC.

4.6 Land

GWRC currently owns the footprint of the existing stopbank from Mills Street to the Rentokil property. GWRC has also recently purchased the property at 59 Connolly Street to provide space for the proposed stopbank improvements outside Safeway.

The Boulcott golf course occupies a total land area of 10.7 ha of which GWRC owns 2.4 ha. The BGC occupies the GWRC land under licence which expires on 30 June 2009. The Hutt Golf course occupies a total land area of 39.7 ha fully owned by the HGC.

Both golf courses are in land zoned 'general recreation' in the Hutt City district plan. The district plan also identifies the flood hazard from the Hutt River. About 70% of the Boulcott course lies in the primary river corridor where fast

flowing and deep water prevails during major floods and balance of the land is within the secondary river corridor.

5. Consultation

The consultation undertaken as part of the feasibility study has been extensive. From these discussions it is clear that no alignment suits all affected parties and compromise will be required. **Attachment 4** contains a summary of the consultation undertaken to date.

From the perspective of the residential property owners their desire appears to be to have the stopbank as far as possible from their boundaries which is therefore a preference for the Red alignment. The Green alignment could also satisfy most concerns as the stopbank is away from their boundaries where it is at its highest.

The Boulcott Club preference is for the Blue alignment but if faced with the Green alignment they would want to consider options for playing over the stopbank. The Hutt Club can live with the Green or Blue alignment but has concerns about the affects during construction on membership. The Red option as proposed was not desirable to Hutt Club as it meant a loss of 4.4Ha of their land reducing the size of the course.

5.1 Golf Club amalgamation

The proposed stopbank works provide an opportunity for the two clubs to consider a merger resulting in a superior 18 hole course with additional facilities. The Blue alignment is designed for the clubs to retain their separate identities and would not necessarily facilitate a merger. With the Red alignment, the community will have to spend an extra \$1.7 million. However, there is also additional costs to re-configure the golf course into a better 18 hole facility and who would pay for this is not yet determined. The Green option provides opportunities for the two golf clubs to amalgamate and fund the course improvements themselves.

A combined meeting, initiated by the two golf clubs, was held on 28 August 2007 to discuss amalgamation issues. The representatives from both clubs request a deferment of the decision on the preferred alignment by six months to discuss amalgamation options with the full membership. The preference from both club representatives is to now amalgamate with the Red alignment.

5.2 Other stakeholders

Safeway requested that the new stopbank go around its property and the Transpower site. Safeway was advised that a structure protecting both the Safeway and Transpower sites is not viable. Safeway currently has its own arrangements to protect up to a 100 year flood in the Hutt River and developed the site knowing this risk. Transpower is currently implementing a long-term programme to flood proof the site and has no concerns with the proposed stopbank alignment.

The effects from any of the alignments upstream and downstream are considered insignificant and there was no specific feed back from any of the residents in these areas.

6. Assessment of Impacts

The assessment of the impacts of such a project has been a particularly difficult exercise. An impact assessment on properties is contained in **Attachment 5** to this report in the form of PowerPoint slides presented by Peter O'Brien at the work shop on 13 August 2007. This presentation gave a bullet point account of the impacts of each of the options. **Attachment 6** contains an Options Assessment summary followed by an initial Multi Criteria Analysis (MCA) of the Phase 2 investigations, along with the attributes used as part of the analysis. The MCA analysis clearly identifies the Green alignment as being the favoured option when considering all of the different aspects of the project. Further analysis will be undertaken as part of the detailed design and consent process.

7. Where to from here

The proposed timeline up to completing construction is given below.

6 Sep 2007	HRAC recommends a preferred alignment to the Landcare Committee
19/27 Sep 07	GWRC adopts the preferred alignment
Nov 07 – Dec 08	Detailed design and resource consents, complete property negotiations
Jan-June 09	Tender procedure
July 09 – June 12	Construction

8. Summary

The purpose of the Boulcott/Hutt stopbank is to protect Hutt City from the affects of a large and damaging flood and is considered to be of a regional benefit because of the significant reduction of flood risk to a large community.

When considered from this perspective the Green alignment is favoured because it provides a sustainable and secure alignment at the lowest cost. The main negative impact of the Green alignment is however that it is likely to lead to the closure of the Boulcott Golf club affecting some 430 members. The Bloulcott Golf Club would however be left with significant assets which could be used to mitigate the affects of this by merging with the Hutt Golf Club next door to develop a superior 18 hole golf course. This initiative can only be achieved through a willing cooperation of the two clubs but Council could play a role if necessary.

When considering the regional benefits of improved flood security, the sustainability of the option, the minimal impacts of neighbours and the potential to mitigate the affect on Boulcott Golf Club, the Green alignment is the preferred option. Initial multi criteria analysis (MCA) work undertaken as part of the investigation supports this conclusion.

The Blue alignment also provides a sustainable and secure alignment and it enables both clubs to retain their own identities. However, it is also the most expensive option and has adverse effects on the neighbours.

The Red alignment is the least sustainable and secure alignment and is about \$1.7 million dearer than the Green alignment. The Boulcott course cannot continue in the current form and 6 holes of the Hutt course will also be affected. However, the Red alignment would provide a very high level of protection to about 44 ha of privately owned golf club land, which would lead to development pressures on the floodplain not desirable from a floodplain management approach.

9. Communication

Following the Advisory Committee meeting on 6 September 2007 a newsletter will be distributed advising the community and stakeholders on the decision of the preferred alignment. Ongoing discussions with the two golf clubs will continue.

10. Recommendations

That the Committee:

1. ***Receives the report.***
2. ***Notes the contents of the report.***
3. ***Recommends to the Landcare Committee that officers should proceed with the detailed design and obtaining statutory approvals for the Boulcott/Hutt stopbank on the basis of the Green alignment***
4. ***Requests officers to work with the Hutt and Boulcott Golf Clubs to maximise opportunities for retaining/developing high quality golfing facilities on the basis of the Green alignment.***

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Attachment 1: Red alignment
Attachment 2: Blue Alignment
Attachment 3: Green Alignment
Attachment 4: Phase 2 consultation summary
Attachment 5: Property Impact Assessment
Attachment 6: Options Summary Assessment