



Report 2015.317
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Committee Council
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Hutt River City Centre Upgrade Project

Options for Consultation

1. Purpose

To advise the Council on Integrated Concept Design options for the Hutt River City Centre Project and to seek Council approval of two options for community consultation.

2. Exclusion of the public

Grounds for the exclusion of the public under section 48(1) of the Local Government Official Information and Meetings Act 1987 are:

The information contained in this report relates to Greater Wellington Regional Council considering a preferred option combination for flood risk management which may lead to the acquisition of property. Release of this information would disadvantage the commercial position of property owners as it may affect their land value, if it is known that their property may be required for flood protection works. GWRC has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override this prejudice.

3. Consideration by the Hutt Valley Flood Management Subcommittee

The matters raised in this report are to be considered by the Hutt Valley Flood Management Subcommittee (HVFMS) on 25 June 2015 (Report 2015.256). The HVFMS recommendations will be tabled at the Council meeting on 30 June 2015.

4. Background

Greater Wellington Regional Council commenced upgrading the Hutt River flood defences in 2001 to the standards and priorities set out in the Hutt River Floodplain Management Plan (HRFMP).

The next priority of the HRFMP is the Hutt River City Centre Upgrade Project (HRCCUP). The proposed flood protection works in this project include:

- River channel improvements from Kennedy Good Bridge to Ewen Bridge, including waterway improvements at the Melling Bridge.
- City Centre stopbank upgrade from Mills Street to Ewen Bridge.
- Pharazyn Street stopbank upgrade from Melling Bridge to Ewen Bridge.

In June 2013, the Subcommittee considered outcomes of a scoping report for the HRCCUP and endorsed the preparation of an Integrated Concept Design (ICD) that combines components of the Hutt City Council's Making Places Project and NZTA's Melling Intersection Project with the proposed flood protection works. A Management Group and a Working Group were set up to manage the process for preparing the Integrated Concept Design (ICD). In March 2014, the Subcommittee approved the Design Objectives for the ICD. Officers have worked with the Subcommittee on the development of these options with the most recent work being presented to the Subcommittee on the 5 May 2015, to a HCC workshop on 27 May 2015 and a Greater Wellington Regional Council workshop on 2 June 2015. We are now seeking approval for preferred options to proceed to public consultation.

5. Project area

The project area extends from the Kennedy Good Bridge (KGB) to Ewen Bridge. The HRFMP recommends upgrading stopbanks in this reach to a 2,800m³/s capacity.

KGB to Melling Reach

The river channel alignment from KGB to Melling and the stopbank alignment from Mills Street to Melling Bridge were developed through the investigations for the Boulcott/Hutt Project with the outline designs completed in 2009. The hydraulic modelling for the design of this reach has made allowances for limited widening of SH2. Options for enhancing the river corridor in this reach will be further developed during the preliminary design.

Melling to Ewen

The Integrated Concept Designs have focussed on the Melling to Ewen reach where other major public works are programmed. The existing river corridor in this reach is narrow and not wide enough to provide a secure floodway capable of passing the HRFMP recommended flood standard. The flood capacity of the existing Melling Bridge (1 in 65 Year) is well below the HRFMP recommended standard (1 in 440 Year) for the Hutt River. Flood protection options that could provide the recommended standard of protection over a long period of time have been developed through the ICD development process.

6. ICD options

The Working Group, consisting of officers from GWRC, HCC and NZTA and a number of specialist consultants, has developed ten Integrated Concept Design options for the Melling to Ewen Reach. These were developed around

three basic flood protection improvement options. The three flood protection options include an option to work within the existing river corridor (**Minimum**) as envisaged in 2001 and a wider corridor (**Maximum**) consistent with corridor widths available in the reaches immediately upstream and downstream of the project reach. A corridor option between the above two limits (**Medium**) was also considered. The flood protection options occupying areas wider than the existing corridor involve significant land purchase. The key features of the Flood Protection options are provided in Table 1 of the Options Evaluation Report (**Attachment 1**). Table 1 summarising the options is shown below:

Table 1 Summary of ICD Options

Option Type	Option No.	Melling Bridge Replaced	HRFMP standard in 2015	HRFMP standard beyond 2045	Channel Width metres	Minimum Berm Width metres	Adaptation Flexibility within the proposed corridor
Maximum	1A	Yes	Yes	Yes	90	50	Maximum
	1B	Yes	Yes	Yes	90	50	Maximum
Medium	2A	Yes	Yes	Yes	90	25	Medium
	2B	Yes	Yes	Yes	90	25	Medium
	2C	Yes	Yes	Yes	90	25	Medium
	2D	Yes	Yes	Yes	90	25	Medium
Medium	3A	Yes	Yes	Yes	90	0 west	Nil
Minimum	4A	Yes	Yes	No	70	15	Minimal
	5A	Yes	Yes	No	70	15	Minimal
	5B	No	No	No	70	15	Minimal
Status Quo	6A	No	No	No	50	15	Minimal

7. Evaluation

An option evaluation process has been undertaken in three steps to determine the preferred option for consultation. The three steps were:

1. Multi Criteria Analysis (MCA)
2. Value for Money
3. Adaptive Pathways.

7.1 Multi Criteria Analysis (MCA)

The ICD options were evaluated against a set of criteria developed by the Working Group. The selected criteria included attributes for Flood Resilience, Movement, Making Places, Cultural and Environmental issues and were considered within a Multi Criteria Analysis (MCA) framework

7.2 Value for Money (VfM)

The next step was to consider the options against the estimated project costs to derive a 'Value For Money' (VFM) ratio for each option.

The table below, combining Tables 10 & 11 of the Options Evaluation Report in **Attachment 1**, shows the VFM ratio and MCA score for each option and the respective rankings.

Option	Value For Money		Multi Criteria Analysis	
	Ratio	Ranking	Score	Ranking
2C	2.65	1	3.79	3
2A	2.63	2	3.69	4
4A	2.38	3	2.72	7
2B	2.35	4	3.27	6
5B	2.33	5	1.47	10
5A	2.16	6	2.08	9
1A	1.77	7	4.79	1
1B	1.70	8	4.46	2
2D	1.70	8	3.39	5
6A	1.38	10	1.38	11
3A	1.28	11	2.31	8

7.3 Adaptive Pathways

The third step was to take into consideration the estimated changes to the flood frequency over time due to potential climate change. These were used to assess the 'use by dates' for the flood protection options when compared to providing the design standard set in the HRFMP. The 'use by date' is the time when the Level of Service provided by the flood defences will fall below the agreed standard and the timing will vary according to the assumed climate change scenario. Our current analysis indicates that the level of service provided by Minimum options (works restricted to the current corridor), will

fall below the HRFMP recommended standard by 2045 (assuming the bridge is replaced) and that works to maintain the design standard would therefore have to be commenced in about 2035. The Maximum and Medium flood protection options would continue to provide the required 'Level of Service' over a long period of time. Current estimates are that they would provide the desired level of service until 2100 but they are expensive and require property purchase.

NIWA is currently working on updating most recent climate change predictions (IPCC 5th assessment) to the Wellington Region and the Hutt Catchment. It is expected that information from this study will be available by August 2015 and the 'use by dates' will be able to be further refined on receipt of this information.

The Working Group then developed adaptive pathways for managing this changing flood risk and its uncertainty. These pathways included pathways such as starting with a Minimum Option and then going to a Medium or Maximum option in the future dependant on the climate change impacts at that time (Section 3.4 of **Attachment 1**).

An analysis using the total expected costs (including transfer costs) over a long period of time has shown that adaptive pathways can on average deliver more economic outcomes than pursuing a more expensive option from the beginning. Averages can however be deceptive as floods either occur, or they do not occur and the real value of damages is therefore dependent on when a large flood actually occurs.

8. Melling Bridge

The capacity of the waterway under the existing bridge is estimated to be a 1 in 65 Year event. The existing bridge capacity could be increased to a maximum of a 200 Year event by widening the waterway under the bridge. This is still well below the recommended standard.

The full benefit of the proposed flood protection works would not be realised until the Melling Bridge is replaced. The integration of the replacement of the Melling Bridge with SH2/Melling intersection improvements in conjunction with the flood protection works is one of the opportunities presented by the project.

There are a number of efficiencies that can be expected by integrating design and implementation of other works at the intersection with flood protection works. For such reasons, a business case process was initiated by GWRC in partnership with NZTA and HCC. The purpose of the business case is to coordinate an investment programme in the Melling area and identify the range of benefits, including timing of the Melling Bridge which is critical to flooding problem and integral to transport and making places proposals.

A Strategic Assessment completed in 2014 and reported to the Subcommittee in November 2014 has confirmed that there is a compelling case for investment in the current infrastructure at Melling to improve resilience, accessibility and safety of Hutt City.

When considering the intersection area there are also associated improvements that can be made at the Melling Station, which could include repositioning the platform and shelter further south to align with train stopping positions, supplementing the existing 'park and ride' car parking and improving access to the station for pedestrians and cyclists.

Determining the timing of the SH2 Melling intersection improvements as part of a broader package of improvements to the SH2 corridor by NZTA, will assist with integration of the flood protection works.

Out of the ten ICD options investigated, nine of them include a new replacement bridge.

9. Options for consultation

There are two Adaptive Pathways for providing the desired level of flood protection for the Hutt Valley community that are considered viable.

Option A

The first option is to proceed with Option 2C now. This is because this option is shown to provide the best value for money and that there is such a relatively short time between completing Option 4A (currently programmed for 2025) and starting 2C (estimated to be 2035) that it is more practical to simply commence now with option 2C. This option will have a 90 metre wide river channel and a minimum berm width of 25 metres. The proposed promenade works will be combined with the Daly Street stopbank. It is estimated that this option could provide the required level of service (HRFMP recommended standard) over a long period of time (currently estimated to be until 2100). At this point it is estimated that we would have to implement one of the Maximum options to maintain the desired level of service.

Option B

The second option is to implement Option 4A now and then commence implementation of Option 2C in 2035. Option 4C has a 70 metre channel and 15 metre berms but with same promenade arrangements as for Option 2C so it gives certainty for the River Corridor/City Boundary now and allows the Making Places work to progress. Current analysis shows that this option may not be able to provide the required level of service beyond 2045 and so implementation of the next stage, Option 2C, would have to start in 2035 to allow it to be completed by 2045 as required to maintain the desired level of service. The option would then have a projected life through to 2010. At this point it is estimated that we would have to implement one of the Maximum options to maintain the desired level of service.

In considering the two above options we also have to consider how they are bracketed at either end of the spectrum by other options. At the upper end the MCA work undertaken by the working group indicated that one of the Maximum Options (1A) is the best option in the long term. When Value for Money and the opportunity for Adaptive Pathways is taken into consideration however the two options above are considered better. Given the uncertainty

over the amount and rate of climate change, the cost and the social disruption of these Maximum options, they are not recommended as a preferred option to proceed to consultation with. Having said that, however, it does need to be recognised that current predictions are that Option 1A will be required by 2100 and consideration needs to be given to what sort of recognition needs to be given to this now through policy options.

At the other end of the scale, consideration may need to be given to reconsidering the Level of Service agreed to in the HRFMP because of affordability. This gives a status quo option (Option 6) or maximising the existing floodway capacity within the current corridor but without replacing the Melling Bridge (Option 5). Given the potential value of damages resulting from a major flood (estimated to be in excess of \$1Billion just for the direct damages and excluding the social disruption costs to the Hutt and regional communities) we have not recommended this as an option for consultation. At the time of developing the HRFMP the overwhelming feeling was that the social cost of a major flood through the Hutt Valley was so high that the minimum level of service considered appropriate was 1 in a 440 year return period.

The above outcomes were presented to the workshops of the HVFMS, Hutt City Council and Greater Wellington regional Council's Strategy and Policy Committee in May/June 2015.

10. Where to from here?

An outline consultation programme to complete the process of selecting the preferred option is given below but will need to be adjusted depending on the final recommendation from this meeting. Also of note is that we would not commence any public consultation until August 2015 when the HVFM Subcommittee has had time to more comprehensively consider the consultation messages that need to be included.

- 25 June 15 HVFMS recommends options for community consultation
- 30 June 15 GWRC approves options for community consultation
- Mid July 15 Further consultation with PNBST and Ngati Toa Rangatira
- July 15 HVFMS workshop/meeting to approve the consultation strategy and consultation materials
- August/Sep 15 Community Consultation
- Sep/Oct 15 HVFMS Workshops/Meetings to review community feedback and develop a preferred option
- Nov/Dec 15 HVFM Subcommittee/GWRC approves a preferred option for further consultation. This consultation round may simply be to inform the community of the preferred option if there has not been any major change as a result of the consultation. If the consultation resulted in a more

substantive adjustment to the preferred option then this second round of consultation would need to be more extensive and the decision time would extend into 2016.

11. Communication/Consultation

No consultation on the preferred option is proposed at this stage. The flood issue has received wide publicity through newspaper articles and media releases. Newspaper articles and a student survey were used to raise community awareness of the existing flood risk and impacts from the predicted climate change. A wide range of communications, marketing and engagement tools will be used during the community consultation to ensure that a robust and transparent consultation process is undertaken. A consultation strategy including consultation material will be presented to the Subcommittee on 30 July 2015 for approval before commencing any community consultation.

12. The decision-making process and significance

Officers recognise that the matters referenced in this report have a high degree of importance to affected or interested parties.

The matters requiring decision in this report have been considered by officers against the requirements of Part 6 of the Local Government Act 2002 (the Act). Part 6 sets out the obligations of local authorities in relation to the making of decisions.

12.1 Significance of the decision

Part 6 requires Greater Wellington Regional Council to consider the significance of the decision. The term 'significance' has a statutory definition set out in the Act.

Officers have considered the significance of the matter, taking the Council's significance and engagement policy and decision-making guidelines into account. Officers recommend that the matter be considered to have low significance.

The Council decision requested below is to recommend options for consultation only. This is to provide opportunities for the Hutt Valley community and the directly affected parties to provide feedback on the options before the Council decides on a preferred option.

Officers do not consider that a formal record outlining consideration of the decision-making process is required in this instance.

12.2 Engagement

Engagement on the matters contained in this report aligns with the level of significance assessed.

13. Recommendations

That the Council

1. Receives the report.

2. *Notes the content of the report.*
3. *Notes that river channel alignment from KGB to Melling and the stopbank alignment from Mills Street to Melling have been previously developed but the river corridor enhancements will be investigated further during the preliminary design.*
4. *Notes that the Melling Bridge needs replacement to provide the HRFMP recommended standard of protection to the Hutt CBD and the central residential areas.*
5. *Notes that 'Minimum' Options (4 or 5) built within the existing corridor would not to provide the agreed level of protection over a long period of time because of potential impacts of predicted climate change.*
6. *Notes that the Working Group will develop Policy Options to complement the selected physical works options to provide a high level of flood security to the Hutt CBD and the central residential area.*
7. *Notes that the Working Group will seek Subcommittee approval of the Consultation Strategy before commencing any community consultation.*
8. *Approves ICD Options '2C' to be called Option A and 'combined 4A progressing to 2C in 2035' called Option B for community consultation.*

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Attachment 1: Option Evaluation Report