Report No:	RCN11-09-02
File No:	
Date:	14 September 2011
Decision Required	

REPORT SUMMARY

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Report to: Full Council
Meeting Date: 22 September 2011
Report Author Sarah Downs, Project Planning Officer
Subject: **Motueka Flood Control Project RCN11-09-02**

EXECUTIVE SUMMARY

The report reviews the consultation feedback that has been received in stage 'c' of the Section 78 process of the Local Government Act 2002.

The report reviews the information gathered to date and recommends a preferred option for the Motueka Flood Control Project to be put into the Draft Long Term Plan 2012-2022.

RECOMMENDATION/S

That the report be received and the resolutions adopted.

DRAFT RESOLUTION

THAT the Tasman District Council:

1. **Receives the Motueka Flood Control Project RCN11-09-02; and**
2. **Approves the selection of refurbishing the stopbanks as the preferred option to go forward to the Draft Long Term Plan 2012–2022 for further consultation; and**
3. **Approves further work to be continued on the rating impact of this decision; and**
4. **Approves that separate consultation will take place with the IWI on the preferred option; and**
5. **Includes the Brooklyn Stream in the preferred option.**

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1. Purpose

1.1 The purpose of this report is to inform Council of the feedback received from the public meetings held on 23 and 25 August 2011 along with the submissions Council staff have since received.

1.2 Additionally, the project team recommend a preferred option on the Motueka Flood Control project to take forward to the Draft Long Term Plan 2012-2022.

2. Background

2.1 The project involves investigating flood control options to provide an affordable scheme for the Motueka River that meets the risks that the community is prepared to accept with regard to flood protection.

2.2 Tasman District Council's Ten Year Plan 2009-2019 identified the need to reconstruct the current stopbanks on the Motueka River to provide better flood protection to the Lower Motueka Valley. Council has more recently considered the problem and the objectives for the project.

2.3 Council concluded that there was a need to determine the best practicable and affordable flood control option. Council has also undertaken consultation with the community on this matter and on the issues that need to be considered when identifying the possible options for providing improved flood protection.

2.3 The practicable options that have been considered and evaluated are:

- Option 1 – Rebuild stopbanks
- Option 2 – Refurbish existing stopbanks
- Option 3 and 4 – Build spillways
- Option 5 – Build secondary stopbanks
- Option 6 – Status Quo – do nothing

2.4 Although the stopbanks have prevented major flooding in the past, they do not meet modern standards. It is known that the construction methods used did not

provide adequate compaction of the central core of the banks. Recent investigations have shown that the current engineering fitness of the stopbanks is such that they would not hold up under sustained or repeated flooding events. It is, therefore, considered that in their current state they do not provide adequate protection to local residents and their assets. The current stop banks are designed to a 2% AEP (1 in 50) which will be insufficient as time passes.

2.5 Council had previously resolved to follow the process outlined in Section 78 of the Local Government Act 2002. Under the process consideration of community views must be given at the following stages:

a) The stage at which the problems and objectives related to the matter are defined;

b) The stage at which the options that may be reasonably practicable of achieving an objective are identified;

c) The stage at which reasonably practicable options are assessed and proposals developed; and

d) The stage at which proposals of the kind described in paragraph above are adopted.

2.6 The project is presently at the end of stage 'c'. In the last Engineering Services Committee meeting on 4 August 2011, Council agreed to continue further investigations of three practicable options, which would go out for public consultation. These three options are:

- Status Quo – do nothing
- Refurbish the existing stopbanks
- Rebuild the stopbanks.

2.7 This consultation was carried out at public meetings on 23 and 25 August 2011 at the Memorial Hall, Pah Street, Motueka. The consultation period lasted until 7 September 2011. The analysis of this feedback is to be reported back to Council with a recommendation of a preferred option.

2.8 This preferred option will be fed into the Long Term Plan process as stage'd' in the Section 78 of the Local Government Act.

3. Present Situation/Matters to be Considered

3.1 Twenty six people attended all three meetings in total, not including Council staff, Councillors or members of the community board. The two day time meetings gave the public the opportunity to discuss issues one on one with

Council staff. The evening meeting was more formal with a presentation on the objectives and findings on the project to date. There was the chance for members of the pubic to ask further questions of Council staff. Mayor Richard Kempthorne chaired the evening meeting.

3.2 The main issues that were brought up at the public meetings were the affordability of the project to the Motueka ratepayers. This was also linked to the potential upgrade of the water reticulation scheme. Considerable discussion took place on how much the whole district should pay towards the cost of new stopbanks.

3.3 It was noted the low numbers attending these meetings and whether Council was receiving a satisfactory level of feedback to make an accurate analysis of what the community wish to see happen. There were still a few comments about gravel extraction but there appeared to be a greater acceptance that while gravel extraction is essential it is not a standalone option.

3.4 One member of the community who had been present at previous consultation meetings and had submitted a suggestion previously, brought up the idea of using sheet piling on the stopbanks as a method of flood control. While this is a plausible option, on further investigation, the cost of this would be in the region of $53 million to $76 million. (This is based on 15.6km length of stopbank, using six metre long sheets at the 2010 prices of $570 - $813 per m2). The costs associated with this option make it unaffordable.

3.4 Forty two written submissions have been received in total. Again, this is not a sufficient total to give an accurate and significant analysis of the community feedback. The results showed:

- Status Quo (do nothing)– 31%
- Refurbish the existing stopbanks – 50%
- Rebuild the stopbanks – 12%

3.5 7% of submissions stated they wished for gravel extraction to be the preferred option, but those who chose the status quo option also requested for gravel extraction to be considered along with improved river maintenance.

3.6 Affordability was the main issue raised in the submissions (32%), indicating that if either the Refurbish or Rebuild options were chosen by Council, that consideration would be given to how the scheme would be paid for.

3.7 Approximately 10% of submitters were happy with the process and 8% thought Council should make a decision and get moving with the work as the community could not afford to have flood protection.

3.8 While gravel extraction was preferred by 7% of submitters as a standalone option, considerable numbers (20%) did agree that there was a greater need

for gravel to be relocated around the river channel rather than removed. It was felt that the gravel could be used to protect the areas of stopbank that are more exposed to erosion.

3.9 Significantly, 62% (50% + 12%) considered that there was a need for improvements to be made to the existing stop banks to be done to protect the township. This was opposed to 31% wanting the status quo. Two of the submitters showed some confusion and selected more than one option. In both cases, the Status Quo option was recorded but it also needs to be noted that the underlying impression was that something needed to be done but affordability was an issue.

3.10 One submitter, who also attended the public meetings, from the Peach Island area, felt that if the refurbishment of the stopbanks on Peach Island was taken out of the project (as outlined in the technical report received by Council on 4 August 2011), it was imperative that this money should be used for the protection of the Brooklyn catchment stopbanks. He also added that it was important to consider the opening up of the spillway channel that flows around the road boundary side of Peach Island. It should be noted that as part of all the options some channel improvements are planned for the west channel around Peach Island.

3.11 The technical report has been subject to a Peer Review by Aurecon. Aurecon's report concluded that MWH's report "provided a reasonable overview of the preferred proposal and options". However, it was felt that there were areas in the report that could be "reviewed or extended for further analytical documentation in order to provide more transparent and robust justification for and understanding of, the works."

3.12 The peer review along with other advice provided by Council staff will form part of the detailed design phase of the project if a capital project is to proceed. The important note is that the peer review information did not raise anything that changes the fundamental design of any of the options.

4. Financial/Budgetary Considerations

4.1 The final preferred option will be fed into the Long Term Plan where there will be a budgetary consideration. Rating options will need to be investigated further once this preferred option has been chosen. Initial discussions have taken place on 15 September 2011 to possible rating options and areas.

5. Options

5.1 **Status Quo**. This option involves doing nothing apart from normal river maintenance. The cost for this is estimated at $2.3 million and would be an

annual cost. The value of the residual risk is $43 million. The benefit cost ratio is 0.

5.2 **Refurbishment of the existing stopbanks**. This option at present looks at the stopbanks from Woodman's Bend. It excludes Peach Island, Kiwifruit and Hurley land, as well as the stopbanks alongside the Brooklyn Stream. The length of the area to be considered for refurbishment is 15.6km. Refurbishment is the addition of fill materials to the existing stopbank to raise the crest level and/or widen the stopbank. The benefit cost ratio is 1.5 (for every $1.00 spent gives back the equivalent of $1.50). The total project cost is $11.6 million. This option would be sufficient to withhold the 1% AEP design flood event (2090).

5.3 **Rebuild the stopbanks**. This relates to the total rebuild of the full length of the stopbank (4m wide crest and 1m vertical to 2.5m horizontal slope on the town side, 1:3 on the river side). This option also excludes Peach Island and the Brooklyn Stream stopbanks. The benefit cost ratio is 1.34. The total project cost is $15.2 million. The protection would be at modern design standards and offer the best protection for the 1% AEP design flood event (2090). However, there is the possibility of a breach occurring when sections of the stopbank are removed during the rebuild process.

5.4 All the above options include **gravel extraction** as part of the process. This has been estimated at $2 million and has been included in the total project costs. As indicated in the previous report RESC11-08-05, gravel extraction does provide some benefits:

- The reduction of overtopping;
- Reducing the need to quarry outside the stopbanks; and
- Could be undertaken in conjunction with sourcing materials (e.g. silt) for the stopbank upgrades.

Disadvantages of gravel extraction are:

- The natural protection to the foundations of the stopbanks buffer zone would be reduced;
- It will increase the risk of under seepage;
- Does not address the problem that areas of the stopbanks are weak;
- Gravel should not be extracted from the active channel as this will affect groundwater;
- Trees lining the banks of the river will not be able to be moved as they shade the river and provide some bank protection in flood events;
- Gravel extraction below the bridge at SH60 would be ineffective in reducing the flood effects at high tide when the peak creates the greatest risk; and

- It will be an ongoing project as more gravel will be moved downstream in flush events. This means ongoing river works will be required which is costly.

5.5 A final option would be to include the **Brooklyn Stream** stopbanks as part of the project at this stage. The extra cost would be approximately $1.5 million. To exclude the Brooklyn Stream stopbanks could affect the number of ratepayers in the direct benefit zone. Hydrology reports also indicate that if there was to be an event in the Motueka river catchment, there is a high possibility of it also happening in the Brooklyn. In 1976, the Brooklyn had a flood event, which was caused by a tree trunk being washed down the stream by the floodwaters. It then got stuck and caused the water to dam up and overtop the stopbanks. The effect was felt over the Riwaka Township.

5.6 If there was an event on the Brooklyn Stream catchment and the issue of failing stopbanks had been excluded from this project, the potential fallout could prove costly. Earlier consultation showed that there was considerable concern from Brooklyn residents about flooding. There are also a number of assets within the catchment that need to be protected, such as the school and the research institute.

6. Pros and Cons of Options

6.1 **Status Quo** – The cost of river maintenance including relocation of gravel is insignificant to the community. However, the value of the residual risk is incredibly high. To take the do nothing option is to accept a high level of risk that could cost the community considerably more if a flooding event did take place. A number of the community prefer this option as they believe that the other options are not affordable or they are willing to take the risk of an event not happening to the level of the design flood. The key issue is that the analysis of the current stop banks is that they will fail after long flood duration or repeated events.

6.2 **Refurbishment of the existing stopbanks** – The refurbish option is the preferred one from community feedback in the latest round of consultation. A similar percentage (49%) was in favour of refurbishment at stage ‘b’ of the Section 78 process as well. It is an expensive option but will be designed to protect the community and offers the best cost benefit ratio.

6.3 **Rebuild the stopbanks** – This is the best protection design for the community but is the most expensive for the community to pay for. There is also the possibility of a flood event taking place whilst the stopbanks are in the construction phase as there will be ‘holes’.

6.4 **Gravel Extraction** – The benefits of gravel extraction are considered a possibly when considered with either the refurbish or rebuild options. However, as a standalone option, gravel extraction would prove costly over a long period of

time as it would not be a one-off project, owing to the natural processes of a river channel. Gravel extraction also does not solve the problem of water lying against the stopbanks for a long period of time in a flood event, which is what will ultimately cause the failure to occur.

6.5 **Inclusion of the Brooklyn Stream stopbanks** – To include these stopbanks into the project will increase the cost by approximately $1.5 million. To exclude the required work on these stopbanks may mean that a considerable number of the Brooklyn residents will only fall in the indirect benefit zone in terms of the targeted rate, so the Motueka project would become less affordable for those deemed to be in the direct benefit zone. To include the Brooklyn Stream stopbanks at this stage would also be more affordable for the Brooklyn community. If the Brooklyn Stream stopbanks are excluded, the question needs to be asked as to whether they become a project in their own right.

7. Evaluation of Options

7.1 The opinion of the project team is that in their present condition, the stopbanks would not withstand the pressure of water lying against them for an extended period of time during a flood event. Gravel extraction may relieve some of the pressure of the water flowing through the channel, but it will not affect the amount of water in a flood event. Gravel extraction could potentially expose the stopbanks further to erosion and therefore make them more vulnerable. Gravel extraction and relocation does have merits and therefore could be considered as part of the general river maintenance works. There are ongoing costs associated with gravel extraction and Council needs to be aware that a lot of the existing gravel areas along the river channel will have land ownership issues that must be considered.

7.2 Both the refurbish and rebuild options offer the Motueka community better protection in the event of a flood. Modelling has shown that if there was a breach in the stopbanks that the impact of a flood event could be greater than if there was no stopbanks. Whilst modelling has shown the impact of flooding in certain locations along the stopbanks, there are no assumptions as to where the stopbanks are most likely to fail. The refurbish and rebuild options give a positive benefit cost ratio to the community. The advantage of the refurbish option over the rebuild is that it is less expensive and does not have the risk of a flood during construction attached to it.

7.3 Council needs to be aware that there is a number of land ownership issues associated with the stopbank project. The Iwi owns approximately 80% of the riverside land and therefore will be directly impacted by any decision made. Once a final preferred option has been selected, it is imperative that the Iwi are consulted with separately. A cultural impact assessment will be required.

7.4 Affordability has been strongly emphasised by the community throughout this project and this does need to be taken into account in any decision making. By

selecting the refurbish option as the preferred choice, this would be taking the cost of the construction into account but also the sustainability of the Motueka community. Council must consider the level of risk they are prepared to take.

7.5 In the report RESC 11-08-05, Council were informed of the rating impact based on the 2009 LTCCP model. This showed that those who were directly impacted would pay an extra $330 per annum for the rebuild option, and an extra $250 per annum for the refurbish option (this would be the peak payment in 2018/19). Those indirectly impacted would pay $130 extra per annum for the rebuild option and $100 extra per annum for the refurbish option (again peaking in 2018/19).

- Direct benefit is defined as “feet wet” or “isolated”.
- Indirect benefit is defined as anyone who is inconvenienced or unable to access services. This may be affected by urban drainage systems. Where future service may also be needs to be considered.

7.6 The rating model used in the above assumed a funding split of 60% direct, 30% indirect and 10% rest of the District.

7.7 Further consideration does need to be given when a preferred option is selected as to how the cost of the project is afforded by the community and what share of direct and indirect benefits are paid and by whom.

7.8 Further design work will need to undertaken once the preferred option has been selected. The Peer Review identified the potential need to increase the level of freeboard on the stopbanks. The consultants, MWH have estimated that for an extra $200,000 that this could be achieved.

8. Significance

8.1 This is a significant decision according to the Council’s Significance Policy because the project will have a considerable impact on a large number of residents and ratepayers in the Motueka area and across the district. Depending on the preferred option, the project could cost over $10 million.

8.2. As stated in paragraph 2.5, Council has previously resolved to follow Section 78 of the Local Government Act. The consultation on this project will also enable public submissions as part of the special consultative procedure of the 2012 Long Term Plan.

9. Recommendation/s

9.1 That the report be received and the resolutions adopted.

10. Timeline/Next Steps

10.1 A newsletter will be sent out to the community informing them of Council's decision on the preferred option.

10.2 Consultation with Iwi will occur with respect to Council's decision on the preferred option.

10.3 The preferred option will be reviewed and placed in the Long Term Plan, which will go out for public consultation in December 2011.

10.4 Further work on the rating impacts will need to be carried out, on which Council will need to make a decision.

11. Draft Resolution

THAT the Tasman District Council:

1. **Receives the Motueka Flood Control Project RCN11-09-02; and**
2. **Approves the selection of refurbishing the stopbanks as the preferred option to go forward to the Draft Long Term Plan 2012–2022 for further consultation; and**
3. **Approves further work to be continued on the rating impact of this decision; and**
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