

Report No:	RESC12-07-04
File No:	
Date:	2 July 2012
<b>Information Only – no decision required</b>	

## REPORT SUMMARY

**Report to:** Engineering Services Committee  
**Meeting Date:** 19 July 2012  
**Report Author:** Sarah Downs – Transportation Planning Officer  
**Subject:** **Port Motueka-Jackett Island Erosion Project**

### EXECUTIVE SUMMARY

This report provides information on the assessment and refinement of practicable options to manage the erosion experienced along the seaward edge of Jackett Island. An update on the interim works on the Van Dyke property and the Port Motueka Groyne removal is also provided along with details of expenditure to date on the Jackett Island Erosion Project.

### RECOMMENDATION/S

Staff recommend that the Engineering Services Committee receives this report.

### DRAFT RESOLUTION

**THAT the Engineering Services Committee receives the Port Motueka – Jackett Island Erosion Project report, RESC 12-07-04.**

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## 1. Purpose

- 1.1 This report provides information on:
- The assessment of practicable options to manage the erosion experienced along the seaward edge of Jackett Island;
  - Ongoing consultation with stakeholders;
  - Progress with the removal of the Port Motueka Groyne;
  - Maintenance of the geotextile sand bag wall on the Van Dyke property; and
  - An update on project expenditure to date.

## 2. Background and Assessment of Practicable Options

- 2.1 The issues arising from this project stem from the Environment Court Interim Decision (ENV-2010-WLG-00080&81) in the matter between the Van Dyke Family Trust and the Tasman District Council issued in March 2011. The Court found that the placement of the Port Motueka geotextile groyne on the Motueka sand spit by the Council in 1996 has led to the formation of the spit in its present form which in turn, has brought about the erosion on Jackett Island.
- 2.2 At its meeting on 15 September 2011, the Committee received a report on the Port Motueka Groyne and Jackett Island Erosion Project and approved the definition of the project problems and objectives.
- 2.3 At its meeting on 8 December 2011 the Committee accepted the nine preliminary practicable options for the project as a basis for stakeholder consultation.
- 2.4 At its meeting on 15 March 2012 the Committee accepted the Draft Practicable Options Report which included ongoing assessment work by Richard Reinen-Hamill of Tonkin & Taylor Ltd.
- 2.5 The report set out the practical physical works options associated either with a new accessible navigation channel or modifications to the distal end of the spit and transfer of sand to rebuild the Jackett Island shoreline. The aim of the option development is to refine potential physical works options to model and identify opportunities and constraints of the options.

- 2.6 Richard Reinen-Hamill discussed the assessment approach and modelling of options with the following technical experts: Professor Bob Kirk (retained by the Van Dyke Family Trust); Gary Teear, Ocel Consultants (retained by the Port Motueka Users Group); and Ron Heath an independent interested party.
- 2.7 After the experts meeting on 14 March 2012 it was agreed that the modelling process would be calibrated. The modelling work is being undertaken by MetOcean Solutions Ltd. Peter McComb supervises the work and is also involved in the technical expert discussions. The Practicable Options Report was finalised.
- 2.8 Modelling options on a new accessible navigation channel were defined and agreed upon by the technical experts. Calibration of the modelling has been reviewed and final verification checks were completed by May 2012. The modelling of the potential physical works options began in early June 2012. A report on the modelled options is now due in August 2012.
- 2.9 The modelling of one option was selected by the team of experts identified in paragraph 2.6 during a teleconference held in May 2012. This option was identified in the practicable options report presented to Council in March 2012. It was generally accepted that there may be a need for further options to be modelled, once the results from this option were analysed. This process has been held up temporarily owing to key personnel being on leave.
- 2.10 Apart from the practicable option identified in paragraph 2.9 of a navigable cut through the spit (this would also require for the existing channel to be maintained), Council also needs to be aware that other practicable options can still be considered. These include:
- The transfer of sand from the distal end of the spit to Jackett Island along with small scale channel improvements;
  - Planning responses, which would prohibit new development within extreme hazard areas;
  - Asset relocation – this would require moving of buildings in hazards areas away from erosion areas
  - Asset purchase - the purchasing of properties and buildings from landowners.

### **3. Stakeholder Consultations**

- 3.1 Collaboration with the technical experts is continuing.
- 3.2 The timeline on the Council website has been updated to reflect recent changes.
- 3.3 A copy of the adjusted timeline has been sent to Fletcher Vautier Moore to be forwarded to the Environmental Court.

#### 4. Groyne Removal

- 4.1 Resource consent for the full removal of the groyne was granted on 12 March 2012. Conditions of the consent stipulated that the groyne had to be removed in full before August.



- 4.2 Staff awarded a short-form contract to Taylors Contracting. Taylors are currently locating a work site on the spit in conjunction with the Department of Conservation. Philip Drummond is the Engineer's representative to the Contract.
- 4.3 A variation was sought on the resource consent to allow refuelling to occur on the spit to minimise the movement of machinery either along the spit and the costs of barging the machinery across the harbour. This was granted on 19 June 2012. This would save money and cause less damage to the spit
- 4.4 The physical work on the removal of the groyne began on 25 June 2012. The contractors experienced delays because of the previous poor weather conditions.
- 4.5 To date, the exposed parts of the groyne have been successfully removed. The contractors are experiencing some difficulties in reaching the parts of the land-based groyne which are covered in sand. This is due to water filling the excavated areas in the tidal zones.





- 4.6 The photographs above (taken on 2 July 2012) show the material associated with the geotextile groyne; the issue about water filling up the excavated hole; and digger carrying out the work.

## **5. Maintenance of the Geotextile Sand Bag Wall**

- 5.1 The Tasman District experienced an extreme weather event on 5 / 6 June 2012 which resulted in considerable damage to the geotextile sand bag wall on the Van Dyke property. The extreme weather event also coincided with a king tide.
- 5.2 Taylors Contracting and Tonkin and Taylor were mobilised on 5 June 2012 to keep surveillance over the period that the storm was expected to continue. At this point Taylors were on Jackett Island raising the crest level of the southern end of the geotextile sand bag wall to the design height of RL 3.6.
- 5.3 On 6 June 2012, Tonkin and Taylor reported that a mid section of approximately 30 metres had been washed away. The first set of waves came from a northerly direction and came straight over the spit. This caused the fill behind the wall to get washed away. The wave direction then came from the east which directly attacked the loosened sand bag wall.



- 5.4 The area where previous remedial work had taken place around the macrocarpa tree at the southern end of Van Dykes property stood strong as well as the northern end of the wall where sand accretion is occurring.
- 5.5 The contractors worked through to 10.00 pm on 6 June 2012 patching up the wall to prevent further damage with the king tide that was expected that evening.
- 5.6 Tonkin and Taylor developed an action plan to deal with the emergency remedial work required to repair the wall in the interim. This work continued until 8 June 2012. The bags that we had recently taken over to Jackett Island were fully utilised and a good number of the bags that had been swept away by the waves were able to be recovered.
- 5.7 The sand material that had also been washed away from the overtopping wave action was reclaimed at low tide to fill in behind the new wall. This material was easily identified as it contained considerable levels of gravel which was consistent with the material that had been originally used when the geotextile sand bag wall was built.



Sandbag wall after the storm event – June 2012



- 5.8 The beach profile was surveyed in full on 27 June 2012. The results from this will help Tonkin and Taylor develop an action plan to repair the wall. The intention is to use bigger bags supplied by Maccaferri. Resource consent is required to attain more sand to fill these geotextile sand bags. A supply site for sand has been identified and an application is currently being prepared.
- 5.9 In the poor weather conditions since the storm event of 5-6 June 2012 the geotextile sand bag wall has been 'holding the line' as expected.

## **6. Project Costs**

- 6.1 Costs for this project from 1 July 2011 to 30 June 2012 total \$850,920.
- 6.2 Further costs relating to the current works will fall within this financial period; these works include the remedial work carried out during the storm event in June and the recent survey of the beach profile. The costs associated with the groyne removal are also still to be charged.
- 6.3 In the Long Term Plan there is a capital works budget of \$2.86 million provided in 2013–2015 (Years 2 and 3) to implement a preferred option. This capital project is to be loan funded and serviced by general rates.
- 6.4 The Environment Court resolution of the further additional costs claimed by the Van Dyke Family Trust totalling \$252,197 will be discussed at a Court-assisted mediation meeting set for 31 July 2012.

## **7. Timeline/Next Steps**

- 7.1 Staff will continue to progress work and intend to report on a preferred option to the Engineering Services Committee meeting in August. To get to this stage, the results from the modelling will require analysis by the technical experts. Further modelling after collaboration (expected in mid-July) may also be required.
- 7.2 Staff will investigate the need for a cost:benefit analysis on any preferred option.
- 7.3 Staff will continue to consult with stakeholder groups as the practicable option assessment works are developed.
- 7.4 Staff will report back to the Environment Court on progress against the updated programme previously submitted.
- 7.5 A report is being prepared by Tonkin and Taylor outlining and summarising the technical advice given to date on the interim sand bag works.

7.6 Tonkin and Taylor will prepare a work programme for the repairs to the geotextile sand bag wall on the Van Dyke property.

<b>8. DRAFT RESOLUTION</b>
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**THAT the Engineering Services Committee receives the Port Motueka – Jackett Island Erosion Project report, RESC 12-07-04.**

**Appendices:**

Appendix 1 – Jackett Island Erosion Study - Progress Report June 2012