BEFORE THE ENVIRONMENT COURT

Decision No. [2011] NZEnvC 374

IN THE MATTER	ENV-2010-WLG-000080 & 81 of applications under sections 316 and 320 of the Resource Management Act 1991
BETWEEN	BEN & MIRANDA VAN DYKE and PAUL LE GROS (As Trustees of the B & M Van Dyke Family Trust)
	Applicant
AND	TASMAN DISTRICT COUNCIL
	Respondent

Court: Environment Judge B P Dwyer
Environment Commissioner W R Howie
Environment Commissioner D Bunting

Heard: at Nelson on 27 - 29 September 2010

Counsel/ Appearances:
C Owen for Trustees of the B & M Van Dyke Family Trust
K Beckett for the Tasman District Council

FURTHER DECISION

Decision issued: 24 NOV 2011

Interim enforcement order made.

THE SEAL OF THE ENVIRONMENT COURT OF NEW ZEALAND

[1] In our decision[1] of 23 March 2011 we found *that the placement of the groyne structure on the offshore spit by the Council in 1966 has led to formation of the spit in its present form which in turn, has brought about the erosion on Jackett Island.* Now we record our decision on the interim enforcement order.

[2] At a judicial conference on 19 September 2011, Mr Ironside (for the Council) advised the Court of the steps already undertaken by the Council to protect the foreshore in front of the Van Dyke property on Jackett Island.

[3] The Council commissioned a technical report from Tonkin & Taylor Ltd, consulting engineers, to identify the short-term interim works required to protect the foreshore. The resulting report was dated 26 August 2011 and the Council has implemented the recommended works set out in section 4.3.2 of the report. This was shown in the photographs accompanying Mr Ironside's submissions.

[4] The Council submitted a draft interim enforcement order as follows:

(i) Tasman District Council shall undertake works to maintain the existing shoreline position along the Van Dyke Family Trust property on Jacket Island (Lot 9 DP 7208) as set out in the attached report dated 26 August 2011 prepared by Tonkin & Taylor Ltd ('Jacket Island-Action Plan for Interim Works').

(ii) This interim order shall remain in force until further order of the Court.

[5] Ms Goodall (for the Applicant) submitted an alternative draft of an interim enforcement order. She sought an order:

(i) for the Council to apply for resource consents to remove the groyne structure,

(ii) to use sand from the groyne to replenish sand on the Jackett Island foreshore,

(iii) to implement works identified in the Tonkin & Taylor report but extended in some areas,

[1] [2011] NZEnvC 69.

(iv) to specify Council contact details, Council monitoring, response and remedial actions,

(v) for a timetable for works for long term protection of the Jackett Island foreshore.

[6] Item (i) above assumes that it is appropriate to remove the groyne. It will be a substantial work with considerable cost and does not address the effects of the existing large deposit of sand forming the extended spit. Part of the long-term solution is a study to determine the best steps for long-term stability of this part of the coast. That will require assessment of the fate of the large sand deposits on the spit as well as removal of the groyne. We have not received any evidence on the required corrective measures available. These investigations and design are to be part of the process identified in (v) above.

[7] Similarly the use of sand presently in the groyne needs to await the results of studies for the long-term solution.

[8] For these reasons we do not consider items (i) and (ii) above are appropriate requirements of the interim enforcement order.

[9] In item (iii) above the applicant seeks to extend work recommended in the Tonkin & Taylor report. We were not provided with any expert evidence to support the suggested amendments and we understand that the works required for interim stability have been constructed.

[10] In the Tonkin & Taylor report the interim works are *to prevent further land loss* but the applicant seeks an objective of *avoiding any damage to the property including land and buildings.*

[11] We consider that it is sufficient for the objective of the interim works to be to prevent further land loss.

[12] Some of the suggestions by the Applicant relate to the methodology and detail of the interim works. Since the works have been constructed, these are no

longer relevant. Reference was also made to the filling of a *bowl* on the Applicant's property but we were not given any evidence about the need for these works and the Council did not consider that necessary. We decline to impose such a requirement.

[13] The effect of an order *to maintain the existing shoreline* includes the imposition of monitoring and maintenance obligations on the Council without the need to further specify those details.

[14] It is clear from Ms Goodall's submissions that the Applicant already holds the Council's and consultant's contact details. It will be necessary for the Council to retain ongoing consultation with the Applicant in order to discharge its obligation to prevent further land loss. Detailing those contact details in the order is therefore unnecessary.

[15] We are satisfied that items (iii) and (iv) in paragraph [5] are adequately provided for by the terms of the interim enforcement order suggested by the Council and recorded in paragraph [4].

[16] The parties are agreed that the interim order should remain in force until further order of the Court.

[17] That then leaves the question of the long-term solution. The Court sought a plan for resolution of this issue with milestone dates and reporting back to the Court.

[18] The Council has prepared a *Schedule setting out the process for the identification and assessment of works required for longer term protection, including milestones with identified outcomes and reporting to the Court*. It has a series of milestone dates for achieving stated reports with a *recommended option* report by November 2012. The Council has undertaken to consult with the Applicant regularly and to report to the Court at the milestone dates.

[19] We are satisfied that the schedule mentioned in the paragraph above is a proper process to determine the final solution and we will incorporate it in the interim enforcement order. We will make one amendment to the schedule at

paragraph 2.3 which refers to removal of the emerged parts of the existing groyne by adding the following to the paragraph; *the removal of the whole of the groyne if that proves to be necessary.*

[20] Accordingly, pursuant to ss314 and 320 RMA we issue the following interim enforcement order:

1. The Tasman District Council shall undertake and maintain works to maintain the existing shoreline position along the Van Dyke Family Trust property on Jackett Island (Lot 9 DP 7208) as set out in the attached report dated 26 August 2011 prepared by Tonkin &Taylor Ltd (*Jackett Island-Action plan for Interim Works*).
2. The Tasman District Council shall undertake investigations as set out in the attached *Schedule setting out the process for the identification and assessment of works required for longer term protection, including milestones with identified outcomes and reporting to the Court* where paragraph 2.3 is amended by adding *the removal of the whole of the groyne if that proves to be necessary* and where November 2012 is the date for the recommended option report.
3. This interim order shall remain in force until further order of the Court.

DATED at Wellington this 23rd day of November 2011

For the Court:

THE SEAL OF THE ENVIRONMENT COURT OF NEW ZEALAND

B P Dwyer

Environment Judge

Tonkin & Taylor

T&T Ref: 27882
26 August 2011

Tasman District Council
Private Bag 4
Richmond
Nelson 7050

Attention: Peter Thomson

Dear Peter

Jackett Island - Action Plan for Interim Works

1 Purpose

On 23 March 2011 the Environment Court issued a decision which made findings about the impact of construction of the Motueka groyne in 1996 has had on the formation of the Motueka sandspit in its current location, which in turn is causing erosion to parts of Jackett Island. The proceeding was brought by the Van Dyke Family Trust over concerns about erosion occurring to their property and sought various enforcement orders against the Council. The Environment Court has not at this stage made any orders; rather it has issued an interim decision and given the parties an opportunity to address appropriate remedies.

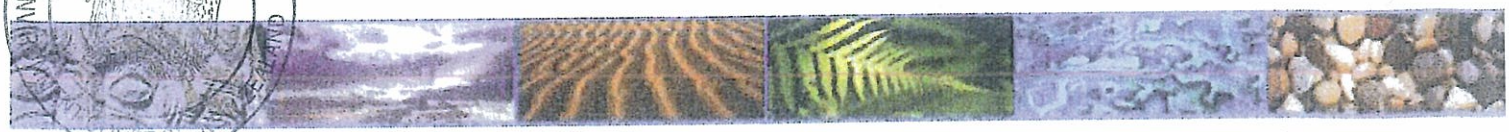
In response to the decision Tasman District Council has engaged Mr Richard Reinen-Hamill, a senior coastal engineer with Tonkin & Taylor Ltd in Auckland to advise it in relation to whether emergency works are required to immediately address ongoing erosion on Jackett Island, and if so, what works are recommended to be undertaken and a timeline for such works.

2 Scope

Our assessment has been made on the basis of a review of the evidence presented in the hearing and the background reports referred to as well as site inspections carried out on 8th April 2011 and 6th July 2011.

This report focuses on summarising the processes operating and the presentation of an Action Plan for Interim Works (APIW) to immediately address ongoing erosion fronting the Van Dyke property.

Erosion is occurring along other parts of Jackett Island. Currently there is insufficient data to determine the extent, rate and options for interim action. A separate process is currently being actioned to determine the historic changes from historic aerial photographs, similar to the process that was carried out in front of the Van Dyke property. We note that the outcomes of this process will be used in the consideration of a more comprehensive solution and may also support an extension of the interim work proposed in this Action Plan for Interim Works (APIW).



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PO Box 5271, Wellesley St, Auckland 1141, Ph: 64-9-355 6000, Fax: 64-9-307 0265, Email: auck@tonkin.co.nz, Website: www.tonkin.co.nz

3 Current situation at Jackett Island

From the evidence and background reports it is clear that the elongation and landward movement of the Motueka spit over recent times has resulted in the landward migration of the outlet to the Moutere Inlet and erosion of the seaward side of Jackett Island (Verstappen, Attachment G, Mead, rebuttal).

From the geo-referenced high tide position at Jackett Island carried out by ASR, erosion rates have recently been in the order of -2 m to -4 m per year (refer Table 1) from 2000 to 2009.

Table 1- Inferred rates of shoreline change at high tide in front of the Van Dyke property on Jackett Island (Based on Figure 9, Mead Rebuttal Evidence)

Period		Interval	Shoreline	Rate(m/yr)
from	to	(years)	change (m)	(-ve landward, +ve seaward)
1940	1947	7	-10	-1.4
1947	1958	11	18	1.7
1958	1969	11	-6	-0.5
1969	1980	11	-4	-0.3
1980	1985	5	-10	-2.0
1985	2000	15	-2	-0.1
2000	2003	3	-12	-3.9
2003	2006	3	-7	-2.3
2006	2009	3	-12	-3.9

Based on this information the shoreline was eroding at a rate of around -0.2 m/yr from 1940 to 1985, although there was one period where accretion was observed. Long term erosion of around -1.3 m/yr took place from 1985 to 2009. Rates of up to -2.0 m/yr erosion were observed prior to 1985 and since 1985 rates have increased to up to -4.0 m/yr.

The Van Dykes have been carrying out works to reduce erosion of their property including sand/gravel push-ups, planting, timber groynes and most recently sand filled wool bales placed along the upper beach area.

Based on discussions with Ben and Miranda Van Dyke held during the site visit of 8 April 2011 the currents flowing past the beach along the outlet are the main transport mechanism for removing beach material from their frontage, although storm action at high tide erodes the upper beach and places sediment down the beach where it is then transported by current flows. From the site visit it is evident that sediment is moved both to the north and south from their property and the current focus of erosion is now slightly further south from their property.

Council has obtained LiDAR survey providing the most recent topographic information of the spit and Jackett Island (6-7 May 2008). This provided 0.5 m contour information above MSL -1 m. Figure 1 shows the 2008 contours and the inferred direction of alongshore transport as evidenced by the wider beach systems either side of the central area of Jackett Island.

It is likely that as the spit extends to the south it is providing slightly greater sheltering from wave energy than in previous years and sand movement to the north is likely to be a function of wave diffraction/refraction effects around the end of the spit as well as sand moved by flood tide flows.

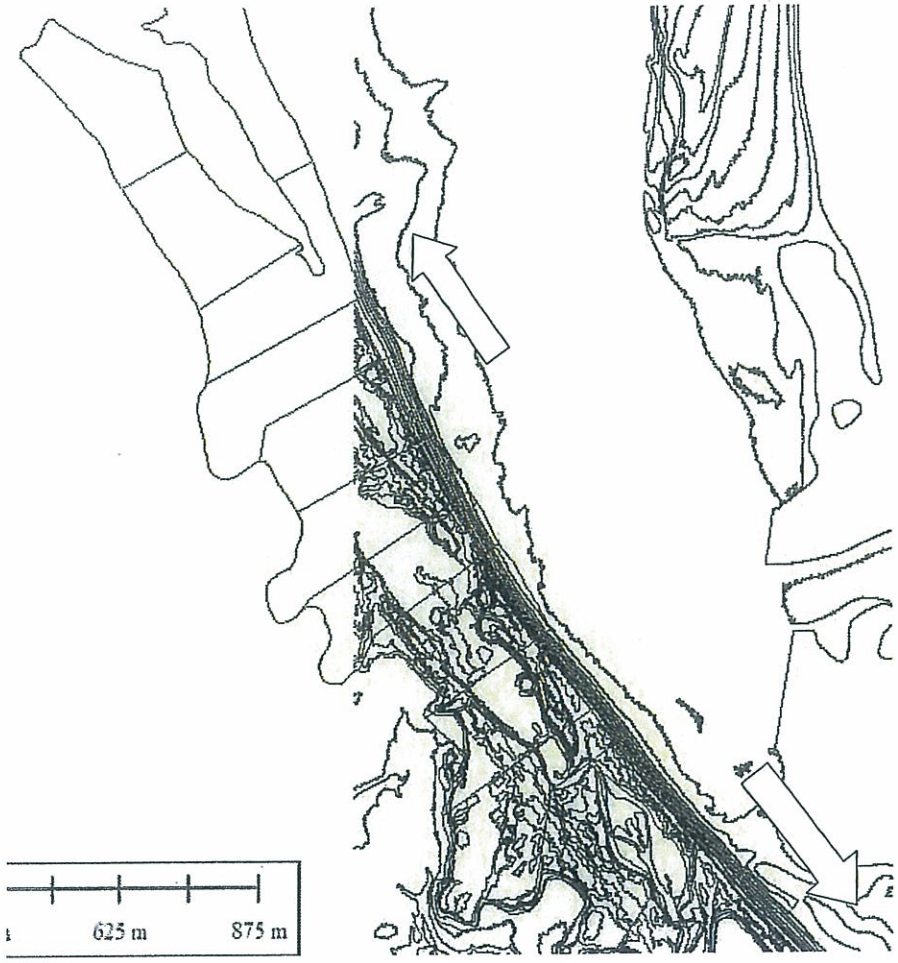

Figure 1- Contour information from LiDAR showing sediment movement alongshore away from central Jackett Island (LiDAR source from Tasman District Council)

4 Action Plan for Interim Works

The preferred interim works solution is based on Council taking responsibility for "holding the line" along the current upper beach alignment on the Van Dyke property. This means that Council will maintain the existing shoreline position, as currently defined by the existing sand filled wool bags.

Access to the site is highly dependent on both weather and tidal conditions. Furthermore, a rapid response is vital to ensure further land is not lost in the intervening period between the initial failure and the time taken to reinstate or replace the seawall. To this end it is important that the certain contingencies are considered and that careful planning is undertaken.

This Action Plan for Interim Works (APIW) outlines the purpose and operative period of the plan. It defines the key contacts in the event of failure of the seawall. It assigns responsibility to the organisations and/or people involved in its implementation. It outlines the remedial actions to be undertaken in the event of failure including any contingencies that may be required to gain access to the site and the location of special equipment and the source of any supplies that may be required. Finally, it describes the procedure for monitoring the condition of the seawall.

4.1 Purpose and operative period

The purpose of this APIW is to:

a) Establish procedures to detect any damage that may occur, and
b) Establish procedures to remedy any damage that may occur.

This APIW will be operative until such time as a permanent solution has been developed to remedy the problem, with an expectation that this could be in the order of 12 to 18 months.

4.2 Table of key contacts

Organisation	Name	Contact Number	Responsibilities
Property owner	Van Dyke Family Trust	(03) 546 8145	Nil
Tasman District Council	Peter Thomson (Engineering Manager) Gary Clark (Transportation Manager) Selwyn Steedman (Transportation Network Engineer)	(03) 543 8440 or 027 443 7331 (03) 543 8437 or 027 263 1233 (03) 543 7213 or 027 246 0300	Monitoring and inspection
Tonkin & Taylor	Mark Foley Damian Velluppillai Richard Reinen-Hamill	(03) 546-2672 or 021-731-381 (03) 546-2681 or 021-552-857 (09) 355-6030 or 021-645-298	Overview / advice, Review
Contractors	TBC TBC	TBC TBC	Implementation

4.3 Remedial works

4.3.1 Emergency response

Emergency remedial works were carried out as a result of a high tide and onshore storm over the weekend of 18 and 19 June 2011.

The preventative works included the following actions:

- Prior to the high tides a volume of sand and gravel was obtained from the recent accumulation adjacent to the Moutere inlet ground at the northern end of the island.
- This material was taken from the intertidal area below MHWS over an area of around 50 m to 100 m (alongshore) by 2 m to 5 m (cross shore) and a maximum depth of around 0.5 m. This was to ensure a diffuse effect at the extraction area and resulted in the extraction of around 100 to 200 m^3 of material.

- The sediments were transported along the beach below MHWS to the Van Dyke property and placed along the southern 100 m of the frontage at the upper beach level (edge of vegetation).

The resulting placement has resulted in a combined gravel/sand/silt bund along the southern half of the property protecting the bank and wool bales (refer Photograph 1) that appears to be providing reasonable wave protection and a volume of material on the upper beach and should provide sufficient protection while the geo bag option is progressed.

Photograph 1 Completed emergency works as at 6 July 2011

At the northern end of the property where sand had been excavated along the backshore by the Van Dykes to provide increased sand elevation in front of their dwelling, the low beach crest has been overtopped and sand infilling by wave overtopping was evident (refer Photograph 2).

Photograph 2 Sand over wash at northern end of the property as at 6 July 2011

4.3.2 Short term interim works

To prevent further land loss it is proposed that a portion of the existing sand filled wool bags be removed and replaced with a structure made of robust geofabric sand filled bags.

These new bags are to be placed along the foreshore in front of the existing dwelling some 94.4 m along the property frontage extending from the southern boundary. The wall will extend slightly beyond the southern boundary with a short return. The return will be 10 m long and at a 30° angle to the main alignment of bags (refer Figure 2).

The geotextile bags will be placed along some 104.4 m. For context, the bags will extend from the southern boundary to around 20 m to the north of the second groyne shown in Photograph 3. The bags will be placed over a geotextile filter fabric that overlies a formed subgrade of beach sediments. The geotextile filter fabric will assist in reducing the loss of fines through the gaps between the bags.

The bags used will have a volume of 0.75 m^3 and will be made with 1,000 g/m^2 polyester. These bags are specified for their robust qualities and because they do not need specialist filling and lifting equipment. Beach sediments excavated to form the subgrade slope shall be retained on the beach and will be used to either backfill or be pushed up to provide a small berm on the seaward side of the bags.

The bag dimensions are 1.6 m (length) by 1.2 m (wide) by 0.4 m (high) and have a filled mass of 1,400 kg. The bags are to be stacked as indicated in attached Figure 2 (see appendix A) with the long edge parallel to the seaward side of the property and overlapping the bag below by two thirds. The minimum height will be 1.2 m (equivalent to 3 bags in depth) and to a minimum length of 1.6 m (equivalent to 1 bag length). The bags will be stacked sequentially.

The existing timber groynes will be removed as part of these works and the timber either retained on site, or removed depending upon the requirements of the Van Dykes.

The initial approach to manage the remaining frontage to the north of the new geobags is to maintain the existing beach crest indicated by the blue line on the attached plan. This is to be done by a combination of using any competent wool bale bags taken from the southern end to form a base at the landward side of the beach crest and augmenting these bags by placing residual sand and gravel from the excavation required to found the geobags. Topping up and shaping of the beach crest shall be carried out to reduce the frequency of inundation, but this may still occur during extreme events, until a more permanent solution is developed and implemented. The lowest part of this area to the north will be increased in height by at least 1.5 m above MHWS to match the adjacent beach crest to the north formed from competent wool bales and residual sand and gravel from the excavation possibly augmented with imported sands and shingle.

Should this approach prove not effective, as defined by regular requirement to reshape and top-up the beach crest, or if there are additional bags able to be used during the initial construction period, the geotextile bag wall shall be extended to the end of the Van Dyke property with a 90 degree return detail at the northern property boundary.

Photograph 3 - existing shoreline showing two timber groynes (8 April 2011)

A detailed spill management plan will be required. All refuelling of plant used in the works will be performed outside of the CMA and on the mainland. An emergency spill kit will be carried on the excavator at all times.

4.4 Sources of special equipment and materials

Geobags will be sourced from a specialist geotextile supplier. Sand will be sourced from a Council supply and the bags will be filled and secured offsite. The works will be carried out by a local civil engineering contractor. For the initial works it is likely that the materials and construction equipment will be brought to site by barge. Alternatively bags and plant will be transported across the estuary at low tide.

For subsequent maintenance/re-building works a hydraulic excavator or similar plant may be brought to site via low tide access across the estuary. A supply of additional geotextile bags will be held by council for additional works should they be required.

4.5 Monitoring procedure

A procedure for monitoring the current position of the interim remedial works is required. The procedure recommended is outlined below and shown on Figure 1.

Installation of a two posts offset from the seaward edge of the geofabric bags by a distance of ten meters landward and 1 m within the property boundary. The offset would reduce their risk of removal. These posts provide the ability; as best as possible, to reinstate the geofabric bags at the correct location should failure occur. The location of the monitoring posts is indicated in attached Figure 2.

A topographic survey shall also be carried out prior to construction commencing to provide baseline information on the current location and state of the coastal edge. The survey shall extend from the southern to the northern inlet and generally extend from the edge of vegetation, or the crest of the erosion scarp down to low tide. At the Van Dyke property the survey shall extend 40 m landward of the existing bag wall. The survey shall record any significant changes in grade and significant features, such as the crest and toe of the erosion scarp, edge of vegetation, debris/wrack lines, structures and the transitions in beach slope.

After the geo-bag wall is constructed, regular site visits shall be carried out by the Council to the property to record any movement of or damage to the sand filled bags. These visits would occur every two weeks and after significant or onshore storm events or after high tides in excess of MHWS with strong onshore winds.

A dated photographic record of the property shoreline and the shoreline either side of the property shall be maintained by Council. The minimum location of photographic record is shown on Figure 1, with photo points at around 50 m centres in the vicinity of the van Dyke property, extending to 100 m further away from the property.

5 Applicability

This report has been prepared for the benefit of Tasman District Council with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by: Authorised for Tonkin & Taylor Ltd by:

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James Russell
Water Resources Engineer

Richard Reinen-Hamill
Senior Coastal Engineer

26-Aug-11
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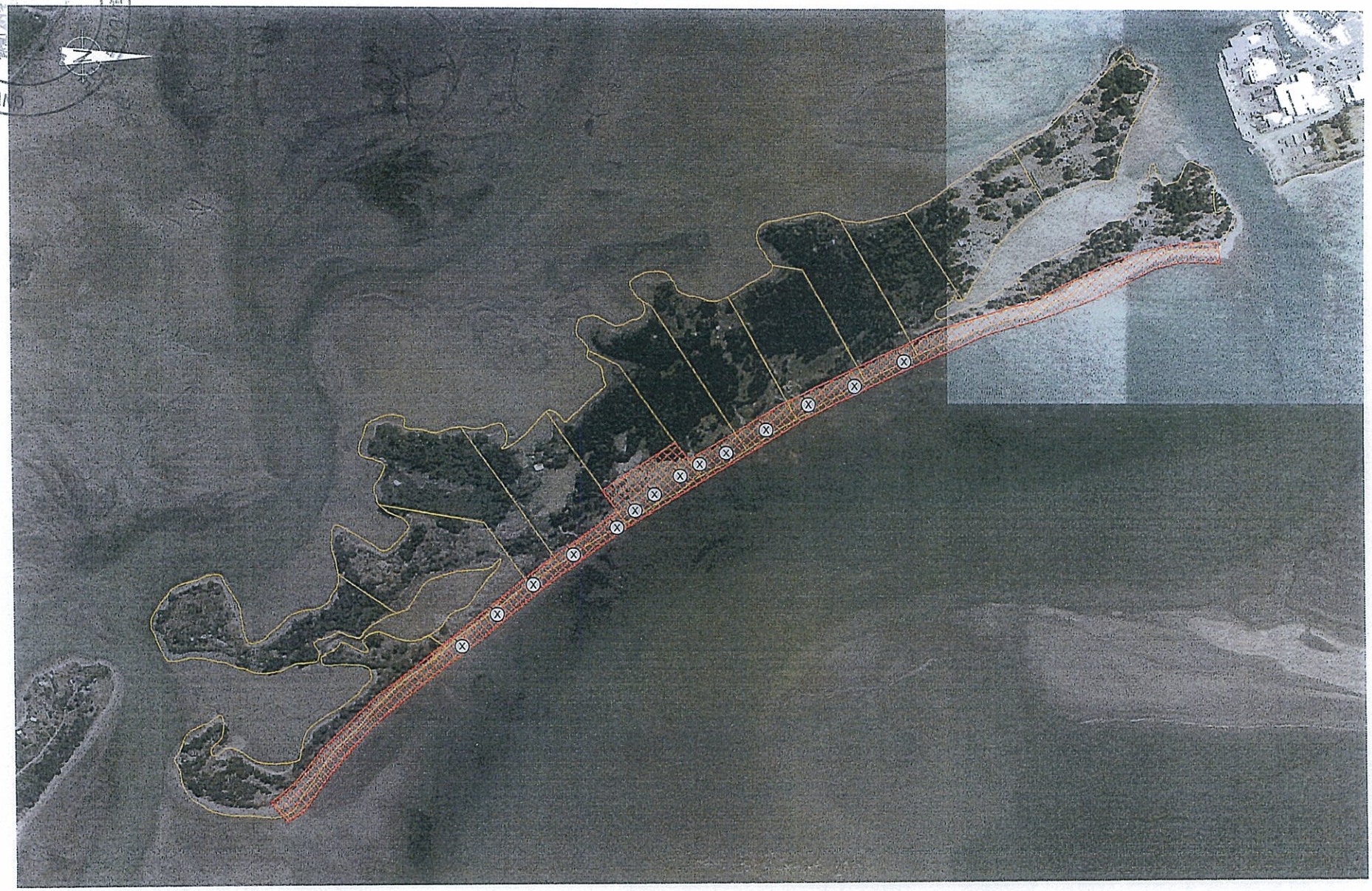
Appendix A: Figures



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0 100 200 300 400 500 (m)

NOTES:
1. Aerial photo and property boundaries Copyright 2002–2005 Terralink International Limited and its licensors.
2. Coordinate Datum in terms of New Zealand Map Grid NZMG49.

LEGEND:

Photo Point Locations – Photos both ways of two weekly intervals and after significant events

Beach survey area from beach crest to low tide and extending 40m into Van Dyke property landward of geobag wall

Tonkin & Taylor
Environmental and Engineering Consultants
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TASMAN DISTRICT COUNCIL
ACTION PLAN FOR INTERIM WORKS
JACKETT ISLAND
Monitoring Plan

Fig. No Figure 1 REV. 0

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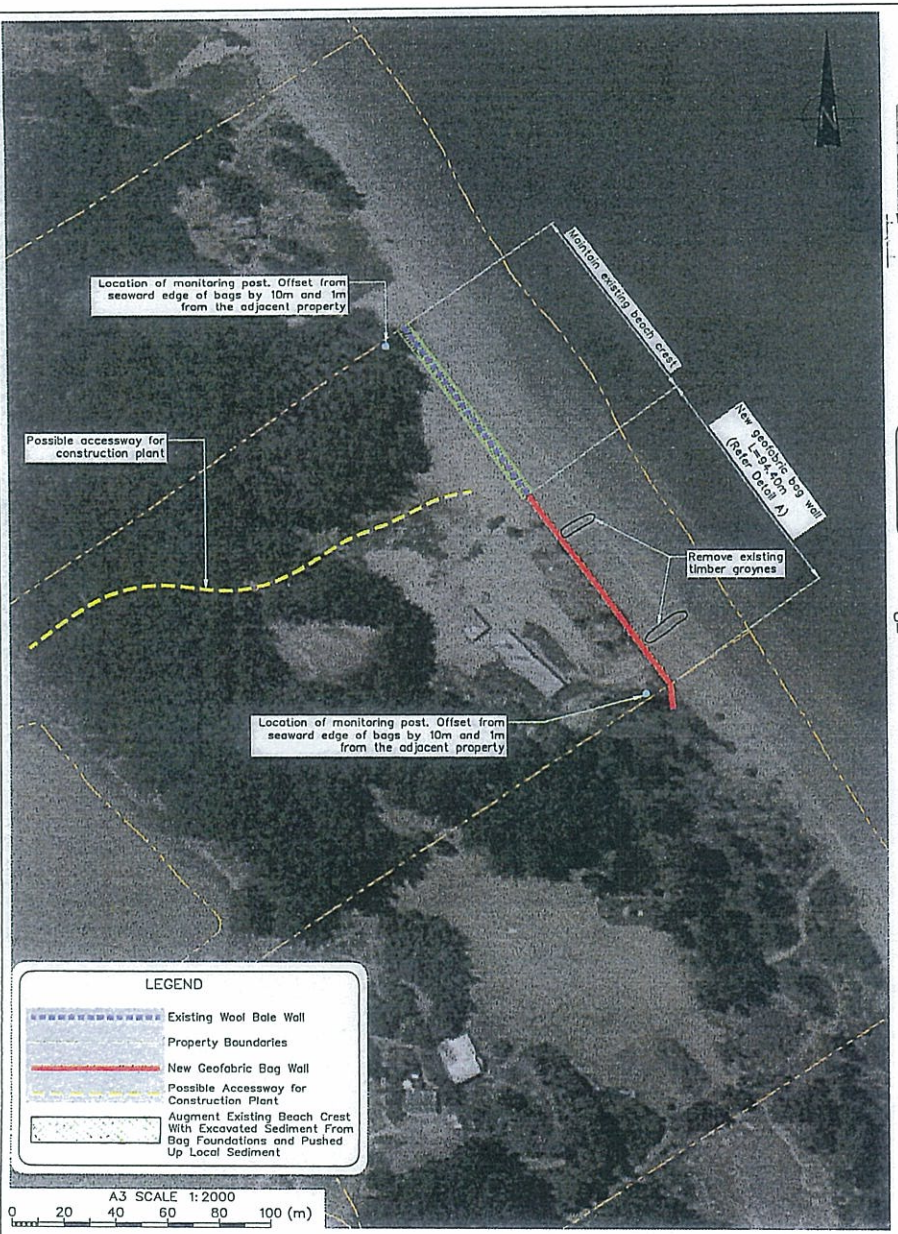

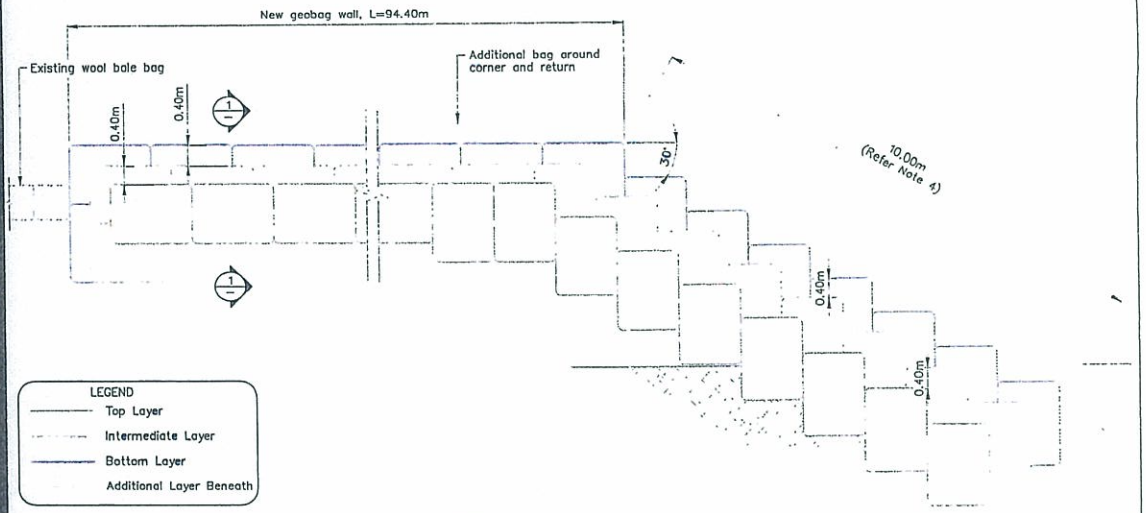

DETAIL A NEW GEOFABRIC BAG WALL PLAN
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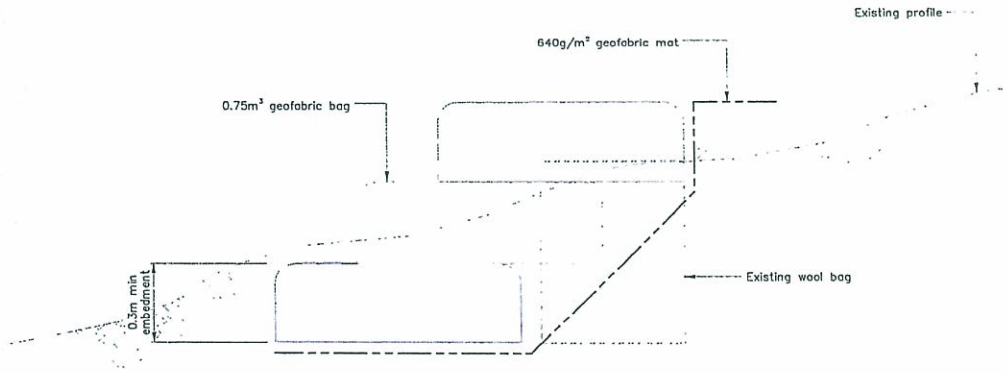

SECTION 1 TYPICAL
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NOTES:

1. All dimensions are in metres unless noted otherwise.
2. Aerial photo sourced from Terralink International (Copyright 2002–2005 Terralink International Limited and its licensors).
3. At least one bag length of bottom layer to extend landward of edge of existing erosion scarp on wall return.
4. Bag depth required at this location and at corner.

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DESIGN	JATG	Jun. 11
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TASMAN DISTRICT COUNCIL
ACTION PLAN FOR INTERIM WORKS
JACKETT ISLAND
New Geofabric Bag 'with 30 Degree Return' Layout Plan and Details

Dwg No. Figure 2 Rev 2

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SCHEDULE SETTING OUT THE PROCESS FOR THE IDENTIFICATION AND ASSESSMENT OF WORKS REQUIRED FOR LONGER TERM PROTECTION, INCLUDING MILESTONES WITH IDENTIFIED OUTCOMES AND REPORTING TO THE COURT

1. The parties agree that the Spit is presently too wide and high to naturally breach, and even after the removal of the groyne it will be some years before a natural breach may occur, in which time the chronic erosion of Jackett Island will continue. The removal of the existing groyne along the Motueka Spit is unlikely to result in the restoration of Spit breaching, as other processes such as sand build up and vegetation are now acting at this location. Determining a long term solution that is sustainable is required in order to address the long term effects of the groyne.

2. The following objectives are required to form the basis of any long term resolution of the erosion issue at Jackett Island:

   2.1 Reduce risk of erosion hazard affecting human life and physical assets;

   2.2 Restore the shoreline position to approximate the year 2000 shoreline;

   2.3 Removal of the emerged parts of the existing groyne from the coastal marine area.

3. Any solution must also be sustainable and practicable in the long-term.

Studies to be undertaken by the Council

4. For the purpose of determining a long term sustainable solution in order to address the long term effects of the groyne the Council shall undertake the following studies:

THE SEAL OF THE ENVIRONMENT COURT OF NEW ZEALAND

4.1 Topographic and bathymetric surveys of the channel separating Jackett Island from the Spit in order to develop a beach/Spit profile;

4.2 Sediment sampling and analysis for mapping of existing distributions, selection of re-nourishment material and numerical modelling;

4.3 Study of tidal and other currents entering and leaving the Moutere Inlet, including river flow data;

4.4 Hydrodynamic and sediment transport modelling, to develop an understanding of the existing environment and assess the feasibility, performance and impacts of the potential solutions listed below.

4.5 The geological composition of Jackett Island, including at least three cross sections; and

5. The further investigations outlined above will be used to inform a long term sustainable solution which, where practicable, utilises the natural cycle of sand replenishment and Spit breaches.

6. These studies, combined with aerial photography, analysis of historical material and LiDAR information analysis, are required to project the expected behaviour of the Spit and to assist in the consideration of the effects of the potential solutions identified below.

Potential solutions

7. In undertaking the studies to be carried out by suitable qualified experts, at least the following options to provide erosion protection to Jackett Island shall be considered:

7.1 **Do nothing**: The hypothesis for this option is that the shoreline will continue to retreat, possibly with increasing rates as a result of future climate change.

7.2 **Sand bypassing:** Small scale and regular mechanical bypassing of sand from the distal end of the Spit to Jackett Island, replicating the natural process affected by the original groyne.

7.3 **Small channel dredging:** Enhancing the existing channel to improve access to the Port and utilising dredge material to replenish the foreshore of Jackett Island.

7.4 **Major channel dredging:** Forming a major dredged channel through the Motueka Spit in its historical, pre-groyne location, in order to provide more direct access to the Port, using material dredged during the capital and maintenance works to replenish the Jackett Island shoreline. An assessment of where to mechanically breach the Spit following removal of the groyne is required.

7.5 **Training Groynes** (with nourishment)**:** Extending along the seaward edge of Jackett Island to move the tidal currents away from the existing shoreline.

7.6 **Seawall** (land protection)**:** Along the existing upper beach and extending around the majority of the Island's perimeter.

8. The Council shall take a collaborative approach, in consultation with the Van Dykes, and will use its best endeavours to develop a plan to provide a full response to the longer term erosion issues on Jackett Island by November 2012. In considering the potential solutions and recommendations from suitably qualified experts, the Council will consult with the Department of Conservation, the Motueka Port Users Group and Jackett Island landowners.

9. The Council has, at the time of signing this parties' memorandum, no preferred physical works approach, and recognises that it needs to assess all potential options including those identified in paragraph 7 above.

Timetable for undertaking works

10. The attached Task List specifies the agreed work process and timeline.

11. The results of the studies listed under 'Data Acquisition' and 'Numerical Modelling' shall be provided to the Van Dykes within 2 weeks of receiving the data or results of the modelling.

12. Consultation with the Van Dykes shall take place prior to each of the Council reporting dates shown in the attached Task List, currently being:

    (i) 15 September 2011 for presentation of the problem and project objectives report;

    (ii) 8 December 2011 for the preliminary practicable options report;

    (iii) February/March 2012 for the practicable options report;

    (iv) June 2012 for the preferred options report; and

    (v) November 2012 for the recommended option report following receipt of a decision on the resource consent application.

13. The Council will report to the Court within 2 weeks of each Council reporting date and in addition will advise the Court when the resource consent application shown in the attached Task List has been lodged by the Council. Council will also advise of any amendments to the Task List timetable.

THE SEAL OF THE ENVIRONMENT COURT OF NEW ZEALAND

ID	Task Name	Duration	Start
1	**Council reporting**	310 days	Thu 15/09/11
2	Issues and options report	0 days	Thu 15/09/11
3	Council assessment	10 days	Thu 15/09/11
4	Practicable options report (preliminary)	0 days	Thu 8/12/11
5	Council assessment	10 days	Thu 8/12/11
6	Practicable options report	0 days	Tue 7/02/12
7	Council assessment	10 days	Wed 8/02/12
8	Preferred options report	0 days	Wed 6/06/12
9	Council assessment	10 days	Thu 7/06/12
10	Recommended options report	0 days	Wed 7/11/12
11	Council assessment	10 days	Thu 8/11/12
12	Project set-up	5 days	Thu 18/08/11
13	**Data acquisition**	55 days	Thu 25/08/11
14	LiDAR survey	20 days	Thu 25/08/11
15	Topgraphic survey of Jackett Island	10 days	Thu 25/08/11
16	Bathymetric survey	15 days	Thu 22/09/11
17	Water level and current measurement	20 days	Thu 22/09/11
18	Historic aerial photograph assimilation	5 days	Thu 25/08/11
19	Background reports and assessment assimialtion	5 days	Thu 8/09/11
20	River flow data	5 days	Thu 1/09/11
21	Sand sampling and analysis	20 days	Thu 22/09/11
22	Review and analysis	15 days	Thu 20/10/11
23	**Preliminary stakeholder consultation**	124 days	Thu 10/11/11
24	Meeting with Port No. 1	1 day	Thu 10/11/11
25	Meeting with DOC No. 1	1 day	Fri 11/11/11
26	Meeting with iwi No. 1	1 day	Mon 14/11/11
27	Meeting with Jackett Island residents No. 1	1 day	Tue 15/11/11
28	Meeting with Port No. 2	1 day	Thu 2/02/12
29	Meeting with DOC No. 2	1 day	Fri 3/02/12
30	Meeting with iwi No. 2	1 day	Mon 6/02/12
31	Meeting with Jackett Island residents No. 2	1 day	Tue 7/02/12
32	Meeting with Port No. 3	1 day	Wed 21/03/12
33	Meeting with DOC No. 3	1 day	Thu 22/03/12
34	Meeting with iwi No. 3	1 day	Fri 23/03/12
35	Meeting with Jackett Island residents No. 3	1 day	Mon 26/03/12
36	Meeting with Port No. 4	1 day	Thu 26/04/12
37	Meeting with DOC No. 4	1 day	Fri 27/04/12
38	Meeting with iwi No.4	1 day	Mon 30/04/12
39	Meeting with Jackett Island residents No. 4	1 day	Tue 1/05/12
40	**Numerical modelling**	94 days	Thu 10/11/11
41	Model of existing situation	25 days	Thu 10/11/11
42	Development of options	30 days	Thu 22/12/11
43	Modelling of options	30 days	Wed 8/02/12
44	**Development of preferred option**	60 days	Thu 2/02/12
45	Scoping level effects/planning assessment	20 days	Thu 2/02/12
46	Scoping level costing	20 days	Thu 1/03/12
47	Development of preferred approach	20 days	Thu 29/03/12
48	**Consent process**	155 days	Thu 26/04/12
49	**Preparation of AEE including technical studies**	60 days	Thu 26/04/12
50	numerical modelling	30 days	Thu 26/04/12
51	avifauna/ecological	20 days	Thu 26/04/12
52	traffic/noise	20 days	Thu 26/04/12
53	consent level design	20 days	Thu 21/06/12
54	Stakeholder consultation	30 days	Thu 26/04/12
55	AEE documentation	30 days	Thu 7/06/12
56	Lodgement of Consents	0 days	Wed 18/07/12
57	Notification assesssment	10 days	Thu 19/07/12
58	Submissions	20 days	Thu 2/08/12
59	Hearing preparation	25 days	Thu 30/08/12
60	Hearing	10 days	Thu 4/10/12
61	Decision report	15 days	Thu 18/10/12
62	Decision review	15 days	Thu 8/11/12
63	Consent finalised (assuming no appeals)	0 days	Wed 28/11/12
64	**Detailed design and implementation**	404 days?	Fri 3/02/12
65	Detailed design	40 days	Thu 29/11/12
66	Tendering	30 days	Thu 24/01/13
67	Construction	120 days	Thu 7/03/13
68			
69			
70			
71		2 days?	Fri 3/02/12