

AGENDA

Ordinary meeting of the

Nelson Regional Sewerage Business Unit

**Friday 11 March 2016
Commencing at 1.00pm
Ruma Mārama, Level 2A
Civic House
110 Trafalgar Street, Nelson**

Membership: Nelson City Councillor Ruth Copeland, Mr Derek Shaw, Tasman District Councillors Barry Dowler and Michael Higgins

Representatives: M Hippolite (Iwi Representative) and P Wilson (Industry Customers Representative)

Guidelines for councillors attending the meeting, who are not members of the Committee, as set out in Standing Orders:

- All councillors, whether or not they are members of the Committee, may attend Committee meetings (SO 2.12.2)
- At the discretion of the Chair, councillors who are not Committee members may speak, or ask questions about a matter.
- Only Committee members may vote on any matter before the Committee (SO 3.14.1)

It is good practice for both Committee members and non-Committee members to declare any interests in items on the agenda. They should withdraw from the room for discussion and voting on any of these items.

Apologies

1. Confirmation of Order of Business

2. Interests

2.1 Updates to the Interests Register

2.2 Identify any conflicts of interest in the agenda

3. Public Forum

4. Confirmation of Minutes

4.1 11 December 2015

4 - 9

Document number M1643

Recommendation

THAT the minutes of the meeting of the Nelson Regional Sewerage Business Unit, held on 11 December 2015, be confirmed as a true and correct record.

5. General Manager's Report

10 - 23

Document number R5546

Recommendation

THAT the report General Manager's Report (R5546) and its attachments (A1508800, A452094 and A1432009) be received.

Minutes of a meeting of the Nelson Regional Sewerage Business Unit

Held in the Ruma Mārama, Level 2A, Civic House, 110 Trafalgar Street, Nelson

On Friday 11 December 2015, commencing at 1.00pm

- Present: Councillors M Higgins (Chairperson) and B Dowler (Tasman District Council), and Mr D Shaw (Nelson City Council representative)
- In Attendance: P Wilson (Industry Customers' Representative), Nelson Regional Sewerage Business Unit Manager (R Kirby), Senior Asset Engineer – Solid Waste (J Thiant), Management Accountant (A Bishop), and Administration Adviser (S McLean)
- Apologies: Councillor R Copeland (Nelson City Council) and M Hippolite (Iwi Representative)

Apologies

Resolved NRSBU/2015/012

THAT apologies be received and accepted from Councillor R Copeland and Mr M Hippolite.

Dowler/Shaw

Carried

1. Confirmation of Order of Business

There was no change to the order of business

2. Interests

There were no updates to the Interests Register, and no interests with items on the agenda were declared.

3. Confirmation of Minutes

3.1 18 September 2015

Document number M1481, agenda pages 5 - 8 refer.

Resolved NRSBU/2015/013

THAT the minutes of the meeting of the Nelson Regional Sewerage Business Unit, held on 18 September 2015, be confirmed as a true and correct record.

Shaw/Dowler

Carried

4. General Manager's Report

Document number R5189, agenda pages 9 - 35 refer.

Nelson Regional Sewerage Business Unit Manager, Richard Kirby, presented the report.

4.1 Bokashi Logic Proposal

There was discussion on the proposal from Bokashi Logic and the method proposed. It was highlighted that if this option was investigated then other potential providers would need to be investigated as well.

Senior Asset Engineer – Solid Waste, Johan Thiar, provided an update on the Bokashi Logic proposal, advising there was potential for an additional trial on a limited scale. He advised further information on this could be presented to the next Board meeting.

During discussion, concerns were raised about a full scale trial. It was pointed out the bacteria mix in a healthy pond should be stable once it was properly established, and would not require further feed stock. There was concern about the potential risk of bringing in a toxic substance to the ponds, so the source of the microorganisms would need to be carefully considered.

There was some support for further investigation on the matter and more detail on a small scale trial. It was agreed a workshop for officers would be held in the new year to fully discuss the proposal, potentially with a representative from Bokashi Logic available to take questions. It was suggested that Board members attend if they were interested, along with an MWH representative and someone in a peer review capacity.

During discussion it was noted that the NRSBU Business Plan 2016/17 included reference to new technology choices, and full analysis of these. It was further noted that the proposal could mean not having to desludge the ponds every 20 years, and also the postponement of upcoming desludging.

A further suggestion was made that a microbiologists view on the matter would be worth having.

Following discussion, it was agreed that the words 'at this stage' would be added to the end of the second clause of the officer recommendation.

4.2 Reticulated Wastewater

Mr Thiart advised that Nelson City Council was reviewing the possibility of reticulating treated wastewater from Bell Island to other users.

4.2 Business Plan 2016/17

It was noted that the date for the Business Plan Action item number 7 should show as Dec 2015. It was advised the review of contractor performance would be reported to the Board meeting in March 2016.

Mr Kirby advised that information on the improvement of power supply by Network Tasman would be presented to the Board meeting in March 2016. There was further discussion on this topic.

Mr Thiart advise the ATAD B-train was being prepared for new lining.

In response to a question, Mr Thiart said he would look into the proposed timeframe for the independent audit of the operation and maintenance manuals. He said he would look into the format and content of the Objectives and KPIs table in the Business Plan as there was currently a blank box.

Mr Kirby tabled amendments to the Business Plan tables on pages 8, 9, 18 and 19.

It was suggested that the table under section 8 of the Business Plan could be more clearly labelled as renewals, and the table under section 9 as upgrades.

4.3 Other Matters

Mr Kirby provided detail on an anonymous letter which had expressed health and safety concerns with Rabbit Island operations. He advised the concerns raised had been assessed and there were no issues to address.

There was a brief discussion on the state of roads at Bell Island. Mr Thiart advised the roads were in good condition and there was an annual \$15,000 road maintenance budget.

Mr Thiart spoke further about sludge, biobags and an upcoming trial for desludging the ponds which would have minimal impact on the ATADs.

There was discussion on whether desludging the ponds was considered a capital upgrade. Management Accountant, Andrew Bishop, advised that the Tasman District Council accounting treatment for this was followed.

Resolved NRSBU/2015/014

THAT the report General Manager's Report (R5189) and its attachments Draft Business Plan 2016/17 (A1468715) and Status Report (A452094) be received;

AND THAT the Nelson Regional Sewerage Business Unit not implement the trial proposed by Bokashi Logic at this stage.

Shaw/Dowler

Carried

Resolved NRSBU/2015/015

THAT the Nelson Regional Sewerage Business Unit Draft Business Plan 2016-17 be adopted as amended.

Shaw/Dowler

Carried

Attachments

1 A1477188 - Correction to pages in NRSBU Business Plan 2016/17

5. NRSBU Review of Alternative Biosolids Disposal Options

Document number R5197, agenda pages 36 - 39 refer.

NRSBU General Manager, Richard Kirby, presented the report.

There was discussion on the possibility of an additional pond at Bell Island, funding for which could be included in the next Long Term Plan.

There was discussion on using ATADS or biobags for sludge and the potential for odour issues and Mr Thiart outlined the holding pond process followed by several other councils. He spoke about the possibility of methane gas being emitted from the ponds during this process.

There was the discussion about what would occur if biosolids spraying and Rabbit Island could not proceed. It was suggested that Rabbit Island changes would be incremental, so biosolids spraying was likely to continue into the foreseeable future.

There was discussion on cost effective ways to treat solids, and whether there were other ways to increase the capacity of the area at Rabbit Island, such as using different tree crops or increasing the spraying amount. Mr Thiart said SCION could advise the NRSBU on the ability of different tree crops to use the nutrient applied through biosolids spraying.

He pointed out that recreation and spraying of biosolids activities at Rabbit Island were not all mutually exclusive.

There followed a discussion regarding the Reserve Management Plan for Rabbit Island and the proposed consultation rounds.

The Board agreed that a submission should be made to the Rabbit Island Reserve Management Plan on behalf of the NRSBU. The Chairperson suggested consideration be given to including a proposal for biosolids spraying at Rough Island.

There was discussion on the concept of keeping the trees growing to 35 years to see if that would solve the problem of having softer logs.

Resolved NRSBU/2015/016

THAT the report NRSBU Review of Alternative Biosolids Disposal Options (R5197) and its attachment (A1468738) be received;

AND THAT the NRSBU note that the current biosolids disposal practice at Bell Island is the most cost effective option;

AND THAT the NRSBU General Manager make a submission on the consultation document on the Rabbit Island Management Plan.

Shaw/Dowler

Carried

6. NRSBU Risk Profile - Impacts of Contributor Exit

Document number R5204, agenda pages 40 - 42 refer.

There was discussion on the impact of a contributor exiting the NRSBU scheme. It was noted there would be both risks and opportunities in this event.

It was pointed out that the Business Risk Schedule table on page 40 of the agenda was missing several words, and Mr Kirby read out the full wording from the Asset Management Plan.

Resolved NRSBU/2015/017

THAT the report NRSBU Risk Profile - Impacts of Contributor Exit (R5204) be received.

Higgins/Shaw

Carried

7. NRSBU Bell Island Wastewater Treatment Plant; Review of Automated Process Control and Influent Load Monitoring

Document number R5208, agenda pages 43 - 46 refer.

Richard Kirby and Johan Thiar presented the report.

There was agreement that the purchase should proceed, although it was emphasised that significant training and understanding was required to make the most of the output data. It was also highlighted there may be ongoing cost in maintaining and calibrating the unit.

Resolved NRSBU/2015/018

THAT the report NRSBU Bell Island Wastewater Treatment Plant; Review of Automated Process Control and Influent Load Monitoring (R5208) be received;

AND THAT an S::can unit be procured from DCM Process Control and installed at a cost not exceeding \$95,000.

Dowler/Shaw

Carried

8. Audited Financial Statements

Document number R5237, agenda pages 47 - 65 refer.

Management Accountant, Andrew Bishop, tabled and presented the financial statements.

Resolved NRSBU/2015/019

THAT the Nelson Regional Sewerage Business Unit Financial Report (A1432009) be received.

Higgins/Dowler

Carried

Attachments

1 A1432009 - NRSBU Financial Report to 31Oct2015

There being no further business the meeting ended at 3.02pm.

Confirmed as a correct record of proceedings:

_____ Chairperson _____ Date



11 March 2016

REPORT R5546

General Manager's Report

1. Purpose of Report

- 1.1 To report on progress with the NRSBU operational activities over the last few months and outlining what is proposed over the next few months.

2. Recommendation

THAT the report General Manager's Report (R5546) and its attachments (A1508800, A452094 and A1432009) be received.

3. Wastewater Specialist

- 3.1 The NRSBU contractor, Nelmac, received notification requesting approval to change its wastewater specialist. The approved specialist up until then was Rainer Hoffman (MWH).
- 3.2 The credentials of the new wastewater specialist were reviewed by the Engineer to the Contract. The General Manager of the NRSBU was advised and responded confirming that there were no issues with the proposed appointment.
- 3.3 Consequently the new wastewater specialist proposal was approved and it is Kirsten Norquay (MWH). Kirsten Norquay will continue to work under remote direction from Rainer Hoffman who has been seconded to work in England for the next couple of years.
- 3.4 Kirsten Norquay is an experienced process engineer who has been working in a supportive role with Rainer Hoffman on this contract for the past three years, so is fully aware of the operational aspects of the treatment plant.

4. Operational Aspects

Accidental Discharge Consent Application

- 4.1 The application was lodged on 29 February 2016.

Submission to Moturoa/Rabbit Island Reserve Management Plan Review

- 4.2 A submission has been prepared and forwarded to the Tasman District Council on behalf of the NRSBU. The submission essentially requests that in undertaking its review could the Tasman District Council please consider the importance of retaining the option of spraying biosolids on Rabbit Island as undertaken currently. A copy of the submission is attached to this report.

Bokashi Logic Workshop – Tuesday 23 February 2016

- 4.3 This was held at the Chamber of Commerce Boardroom with 5 NRSBU Joint Committee members, General Manager and Senior Asset Engineer present, as well as representatives from Nelson City Council, Tasman District Council, Nelmac, MWH, Microbiologist, Bokashi Logic and EMNZ.
- 4.4 Microbiologist (Gemma Allen) is engaged by Nelmac under its contract with the NRSBU to monitor the microbiological aspects of the facultative and maturation ponds. Gemma Allen has been analysing the ponds for nearly 2 years now and provided an overview of the pond microbiology.
- 4.5 The wastewater specialist (Kirsten Norquay, MWH) provided an overview of the pond sludge management. The results of the sludge survey completed in November 2015 indicate that the trigger level set out in the pond management plan has been reached for facultative pond F2. The other two ponds are below the trigger level, but all three ponds will need to be considered for de-sludging within the next three to four years.
- 4.6 The owner of EMNZ (Mike Daly) then provided an overview of the use and manufacture of EM (effective micro-organisms) Technology in New Zealand. The product EMNZ produces is primarily used in New Zealand to deal with odour and restoring septic ponds. It is also used to reduce sludge volumes. It appears from the presentation that the use of EM in wastewater treatment plants as a normal ongoing operation is not very common in New Zealand.
- 4.7 The part owner and manager of Bokashi Logic (Michel D'Hondt) then spoke to the Bokashi Logic proposal to reduce sludge in the facultative ponds at Bell Island.
- 4.8 A round table conversation followed during which the merits of implementing the Bokashi Logic proposal were considered. Given the balance in maintaining pond efficiency, it was generally agreed that there was little justification in dedicating one of the facultative ponds to a trial with Bokashi Logic. There may be a case to consider sludge treatment but that would need further assessment.
- 4.9 It is intended that the NRSBU take no further action at this time as there is insufficient evidence around the efficacy of the Bokashi Logic proposal. If this was to be re-considered, Bokashi Logic would need to submit a substantiated proposal that will prove to the NRSBU that it is not only

cost-effective but will enhance the environmental outcomes sought by the NRSBU at the treatment plant and with its discharge.

Contract 3458 – Nelmac; Operation and Maintenance

- 4.10 The reticulation and treatment operations have continued as normal over the last few months.
- 4.11 The diversion of load away from the aeration basin has resulted in a decrease in run hours of aerators of between 50 and 70% daily over the last two months.
- 4.12 The B-train ATAD was brought back on line following completion of the lining of the tanks in February and work on C-train has commenced. C-train is expected to be back on line before the end of March 2016.
- 4.13 It is expected that once all three ATAD trains are back on line that volatile solids reduction will improve further and result in a reduction in biosolids production.

Contract 3619 – Biosolids Operation

- 4.14 The monthly average volume biosolids sprayed is tracking the budgeted amount.
- 4.15 The volume of biosolids sprayed during January was nearly half of what was sprayed during the same period the previous year.
- 4.16 The volume of biosolids will continue at this level for the next month, but is expected to increase following the relining of C-train as it is anticipated that load will be directed away from the ponds in preparation for the winter months when the ponds have less capacity to treat load.

Sludge survey November 2015

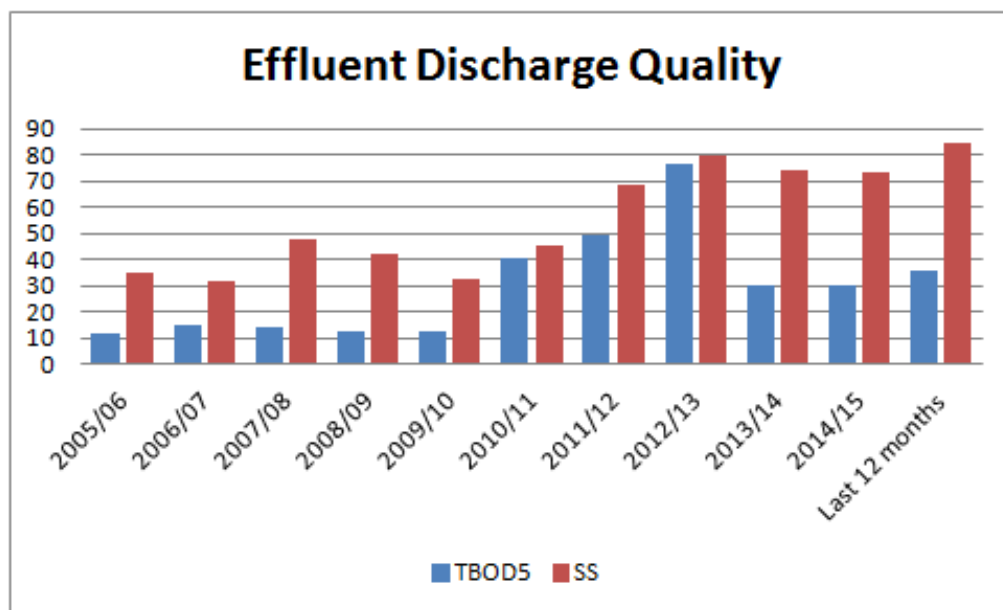
- 4.17 Sludge surveys in 2012, 2014 and 2015 have demonstrated that sludge levels in all three facultative ponds have increased to such an extent that sludge removal will be required in all three ponds within the next three to four years.

Survey	Liquid level to sludge				% sludge at operating level			
Nov-15	Actual	1.7m	1.8m	1.9m	Actual	1.7m	1.8m	1.9m
F1	1.16	1.10	1.20	1.30	0.29	31%	29%	27%
F2	1.11	0.93	1.03	1.13	0.38	42%	40%	38%
F3	1.06	1.13	1.23	1.33	0.31	30%	28%	27%

- 4.18 The following trigger levels are recommended in different sources.

Source	Trigger level
Pond Management Plan	The trigger level for pond desludging is when the sludge comes within one metre of the surface for greater than 10% of the pond area.
Oxidation Pond Guidelines 2005	As a general rule sludge depth in pond should not be deeper than one third of the pond depth.
Cardno/Downer	Minimum liquid level to sludge of 1m should be maintained in the facultative ponds.
CPG	For facultative ponds function effectively with a minimum of 0.75m liquid above the sludge layer.
USEPA	Soluble organics are released from benthic sludges and have the largest effect on ponds in spring of the year.
Other sources	When the pond sludge has reached 30% of the pond capacity.

- 4.19 The average load recorded during the months of September, October and November shows that the quality of effluent discharged from Bell Island has decreased significantly since the previous upgrade completed in 2010.



- 4.20 The ponds continue to treat loads effectively with no adverse issues other than an increase in CBOD since 2010. This increase in CBOD shows that the treatment capacity of the ponds is decreasing.
- 4.21 MWH completed a review of the sludge in the ponds during 2014 and recommended that a trial be conducted to determine whether the sludge treatment processes at Bell Island (ATAD's) has adequate capacity to also deal with sludge dredged from the facultative ponds over time.
- 4.22 This trial was delayed until the sludge treatment facility was restored to 100% capacity. This should be in late March 2016 when C-train is commissioned following completion of the lining of all the ATAD tanks.
- 4.23 Other sludge control methods are also being investigated at the moment. Conclusions are that sludge removal is the most economical method.

- 4.24 Further work is currently underway to determine the most appropriate way to remove and dispose of the sludge from the ponds. The following options are being considered:
- Gradual desludging over time with sludge treatment integrated into current sludge treatment processes;
 - Decanting the effluent from the pond and remove sludge by mechanical means, similar to what was done during the last desludging in 1993 to 1995. This involved controlled land disposal at Bell Island.
 - In-situ solar drying and removal of sludge by mechanical means.
 - Dredging and dewatering using geo textile bags.
 - Wind generated aeration and diffusion upgrade of the ponds to improve wastewater treatment and sludge management.
- 4.25 Once the assessment of options is completed and estimated, the preferred option will be matched with the budget allocations to determine how best to progress. This will be the subject of a future report to the NRSBU Joint Committee.

5. Key Performance Indicators

5.1 The outcomes of key performance indicators for the 3 months to 31 January 2016.

Environmental: Treatment and Disposal			
RMA consent - wastewater Discharge to Coastal Marine Area	RMA Consent - Discharge of Contaminants to Air (Odour complaints)	RMA Consent - Discharge of Contaminants to Land	Equipment Failure of critical components within treatment and disposal system
Environmental: Pump Stations			
Odour complaints from pump stations	Pump station wet weather overflows	Pump station overflows resulting from power failure	Pump station overflows resulting from mechanical failure
Environmental: Pipeline			
Reticulation breaks	Air valve malfunction		
Capacity: Overloading system capacity			
Treatment & Disposal	Pump Stations		
Reliability: Equipment failure of critical components			
Treatment & Disposal	Pump Stations	Pipelines	
Responsiveness: Speed of response for emergency and urgent maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
Responsiveness: Speed of response for routine and programmable maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
Key customer relationships: Overall satisfaction			
Treatment & Disposal	Pump Stations	Pipelines	

6. Compliance Outcomes

6.1 The compliance outcomes for the 12 months to 31 January 2016 are outlined in the following table:

i)	Resource Consent Compliance (rolling 12 month record)	
	➤ Discharge to Estuary Permit	Not achieved. One discharge of raw sewage occurred at Saxton pump station during this period resulting from a level control failure.
	➤ Discharge to Air Permit	100% Compliance
	➤ Biosolids Disposal	100% Compliance
	➤ Discharge treated waste water to land	100% Compliance
ii)	Odour Notifications	
	➤ Past three months	Nil.
	➤ Last 12 months	Nil.
iii)	Overflows	
	➤ Past three months	Nil
	➤ Last 12 months	One.
iv)	Speed of response for maintenance works	
	In past three months:	
	➤ Nine.	
	➤ One call out was for a power cut experienced at Bell Island.	
	➤ Five call outs were SCADA related issues.	
	➤ Two call outs resulted from electrical faults (trip) on the power supplies to the wash-water pump station and the Milliscreen.	
	➤ One call out was associated with a malfunction at the air-valve at the Saxton Road pump station.	
	➤ Response within 30 minutes. Achieved.	

7. Review of Action Plan Implementation – 2014 Asset Management Plan and 2015/16 Business Plan

The following table indicates the draft time lines for the individual action items:

IP	Business Plan Action	Target Date	Completion Date	Comments
1	Review manuals annually.	March 2016		Documents were reviewed by Asset Engineer in liaison with contract supervisor. With the change in wastewater specialist it was decided that it will be appropriate for the new wastewater specialist to lead the annual review for the Nelmac team under direction of the previous wastewater specialist. Work to be carried out during March 2016.
2	Consolidate all natural disaster information and review 3 yearly.	March 2016		Work will be carried out during March 2016.
3	Internal benchmarking carried out annually.	June 2016		
4	Review risk of contributors leaving NRSBU.	June 2016		
5	Review capacity of treatment components.	June 2016		
6	Programme for pipe inspections.	June 2016		
7	Annual review of contractor performance.	Dec 2016		
8	Screen upgrade.	June 2016		
9	Review secondary sludge separation.	Dec 2016		
10	Construction second sludge storage tank.	June 2016		
11	Develop sludge removal programme.	June 2016		
12	Review effluent discharge management.	Mar 2016	January 2016	Procedures reviewed to ensure that discharge pump is operable. Nelmac instructed to programme one pump discharge per month and report volume of pump

IP	Business Plan Action	Target Date	Completion Date	Comments
				down during the discharge in the monthly report.
13	Renewal of effluent discharge permit	Dec 2018		
AP	AMP Action	Target Date	Completion Date	Comments
1	Annual customer survey.	Mar 2016		Survey will be carried out at the end of March.
2	Business Continuity Plan review.	Jun 2016		
3	Consider benefits of succession planning and how it might be implemented with be considered once governance issues (TDC and NCC) have been resolved.	Jun 2016		
4	Review of security required at all facilities.	Mar 2016		Review will form part of six monthly Health and Safety Audit to be carried out during March.
5	Monitor sludge levels in ponds and ascertain long term removal and disposal requirements.	Mar 2016	24 Feb 2006	Assessment of options currently being undertaken.
6	Improve reporting requirements for asset condition, performance and maintenance from maintenance contractor.	Mar 2016		Work programmed for this month.
7	Implementation of internal bench marking (using historical data) of NRSBU network, pump stations, treatment and disposal facilities.	June 2016		
8	Develop Demand Management Policy.	June 2016		

8. Health and Safety

- 8.1 There have been 4 Health and Safety inductions and 154 visitors to the Bell Island site over the past three months.
- 8.2 Three Health and Safety incidents were reported by the contractor during the three month period. All events were investigated, recorded and actioned in accordance with the Nelson City Council health and safety requirements.

- A plastic fish bin used by a contractor to stand on collapsed. A fixed step was installed following the event.
- There was gas build up inside an air-valve chamber which was caused by a portable generator used to power a submersible pump to drain the valve chamber. The operator was alerted to the issue when the gas monitor was activated. Following the event the contractor procured an inverter that is powered by the vehicle battery to replace the need to use the generator for this type of activity.
- A large flight pump tipped over when the pump was placed on the work surface outside the pump sump. A supporting frame was manufactured and will be used in future to prevent a similar event.

8.3 Two further incidents were reported involving contractors damaging equipment whilst backing vehicles.

9. Financial

9.1 Power usage at the treatment plant is tracking well under budget. It is expected that this will continue through to April 2016. This is contingent on pond condition remaining in a good state as well as other wastewater process units.

9.2 Expenditure is generally tracking under budget. (Financial report for January 2016 attached)

Richard Kirby
Consulting Engineer

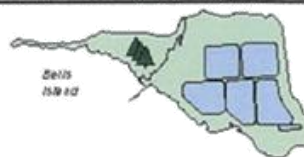
Attachments

Attachment 1: A1508800 - Submission Moturoa/Rabbit Island RMP Review

Attachment 2: A452094 - Status Report

Attachment 3: A1432009 - Financial report January 2016

Submission to Moturoa/Rabbit Island Reserves Management Plan Review



1. Introduction

- 1.1. The Nelson Regional Sewerage Business Unit (NRSBU) operates and maintains the infrastructure that collects and treats wastewater from Nelson City and Tasman District. Its Wastewater Treatment Plant is located on Bell Island adjacent to Rabbit and Moturoa Islands.
- 1.2. The NRSBU has a consent to discharge effluent of an appropriate standard on the outgoing tide into the Waimea Estuary. It also has a consent to spray biosolids (treated sludge) into areas on Rabbit Island. This is the primary reason why the NRSBU is interested in contributing to the review of the Moturoa/Rabbit Island Reserve Management Plan.

2. Submission

- 2.1. The biosolids programme has been operating since early 1996 and has improved the fertility and structure of the soil in the plantation forests on Rabbit Island without adverse effects to the environment. This practice has improved tree volume production by more than 30%, but a much more significant benefit has been a productive, sustainable and cost effective means of disposing of treated biosolids, which would otherwise require disposal as a waste product. The biosolids trial site has also produced valuable data about the impact of biosolids application on the soil and groundwater environments over a long term, which will benefit other such proposals nationally and internationally.
- 2.2. Scion (formerly the Forest Research Institute) reported that the additional income per hectare from the standard application rate of biosolids compared with sites which have not had biosolids applied is about \$10,000 per hectare. In simplistic terms this is an additional income of nearly \$8 million for the approximately 800 hectares of forest utilised for biosolids application.
- 2.3. The long term planning for the Bell Island treatment facility has been done on the basis that the areas of Rabbit Island which are dedicated to recreational use would remain substantially the same in the medium term and that the plantation forests would remain available for the disposal of biosolids. An investigation of alternative disposal methods and the only viable alternative was found to be disposal to landfill. As you know there are significant sustainability and cost issues with having to dump biosolids to landfill.
- 2.4. If other multisport activities are allowed on Rabbit Island it could potentially affect the viability of the Island as a biosolids spraying area. Significant

NRSBU : SUBMISSION MOTUROA/RABBIT ISLAND RMP REVIEW

buffer zones will be required around any areas of public access and potentially public pressure could be placed on the biosolids operation to keep spraying well away from areas adjacent to the buffer, particularly when events are being held. There will also be conflicts between traffic associated with the biosolids programme and traffic generated by events and activities leading up to events.

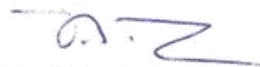
- 2.5. Currently approximately 800 hectares of forest on Rabbit Island is available for biosolid spraying. Any reduction in available hectares would require either sourcing other land to spray or consider alternative treatment/disposal options. Either way would incur capital investment.
- 2.6. Currently the biosolids are pumped via pipe to holding tanks on Rabbit Island. Alternative land for spraying would need to be in close proximity to Bell Island otherwise the required capital investment would escalate significantly.
- 2.7. The very nature of biosolids disposal is that if capital investment was required it would be more cost-effective to invest to treat/dispose of the whole biosolids waste stream rather than a part of it. This would need further investigation but it is certainly the preference of the NRSBU to retain the required hectares on Rabbit Island for spraying.
- 2.8. An alternative biosolids treatment option is utilising a Bio digester and sludge dewatering facility. The treated biosolids would be transported to landfill. The potential investment to undertake this is likely to be around \$10.0 million. Much more rigorous planning and evaluation of treatment and disposal options would be required before a final option and associated costs could be determined.
- 2.9. The existing biosolids application programme has substantial environmental and economic benefits for the region and the potential loss of these benefits should be given appropriate consideration in the planned access to the forest and any extension of the recreation areas on Rabbit Island.
- 2.10. Any changes required to the sewage treatment technology and disposal methods used are likely to require significant lead time for planning and implementation and may involve significant capital and ongoing operational costs.

3. Final Comments

- 3.1. Thank you for the opportunity to contribute to the review at this early stage. We would be keen to continue discussions with you during the development of the revised Management Plan to ensure the interests of the NRSBU operations are considered and protected.



Richard Kirby
General Manager



Johan Thiar
Senior Asset Engineer

NRSBU STATUS REPORT - 11 March 2016							
No	Meeting Date	Document Number	Report Date	Report Title / Item Title	Officer	Resolution or Action	Status
A	18/09/15	R4817	18/09/15	General Manager's report	Richard Kirby	The outcome of the discussions with Alliance and NPI will be reported back to the Board.	Discussions have occurred and resolved.
B	19/06/15	M1293	19/06/15	Minutes	Johan Thiar	Biosolids processing trial/ report back.	Reported back to Board in December.
C	14/03/14	A1163334 A1145728	14/03/14	Minutes and officer report	Johan Thiar	Biosolids and effluent discharge reports.	TDC has indicated that they continue to consider the reports submitted last year.
D	22/06/12		22/06/12	Minutes	J Thiar	Energy audit at pump stations	Programmed for 2016
E	14/12/12			Bell Island power supply	J Thiar	Improvement of power supply by Network Tasman	Met with Network Tasman and they will review their position on this matter and contact the Board if required.
1	11/12/16	M1634	11/12/16	General Manager's report	J Thiar	<u>THAT</u> an S::can unit be procured from DCM Process Control and installed at a cost not exceeding \$95,000.	Equipment received. Installation programmed for March 2016.
2	19/06/15	M1293	19/06/15	Minutes 19 June 2015	J Thiar	<u>THAT</u> the Bell Island Spit Restoration project committee report annually.	Targetted for June 2016.
3	19/06/15	M1272	19/06/15	General Manager's report		<u>THAT</u> NRSBU contribute an amount of \$20,000 for the completion of the research by SCION payable on receipt of the final environmental report; <u>AND THAT</u> NRSBU contribute an amount of \$10,000 payable on receipt for the final harvest report.	Awaiting report from SCION
4	19/06/15	M1293	19/06/15	Minutes 19 June 2015	Richard Kirby	<u>THAT</u> the General Manager investigates future meat industry plans in relation to NRSBU activity, and advises the Board and shareholders of the outcome of that investigation.	Very uncertain future in meat industry. Reported impacts in December 2015.
5	23/08/13	1582359	23/08/13	Nelson Regional Sewerage Business Unit Resource Consent	J Thiar	<u>AND THAT</u> the increase in suspended solids and biological oxygen demand be investigated as part of the operation and maintenance contract and a further report be submitted to the Board regarding this matter in March 2014.	Reported in March 2014. Waiting for further assessment by consent authority.
6	22/06/12	1307226	22/06/12	Bell Island Energy Audit	J Thiar	<u>AND THAT</u> the removal of the time of use meter at the dewatering building will be considered once the deferment of the thickening upgrade is confirmed; <u>AND THAT</u> the optimisation of O ₂ levels in the aeration basin will be considered as part of the waste water treatment capacity review; <u>AND THAT</u> the cost of changing the point of supply for the ponds and irrigation pump station will be investigated in order to establish the return on capital investment.	Deferred until review of secondary sludge separation completed.
7	9/03/12	1042662	9/03/12	Staff report	J Thiar	<u>AND THAT</u> the NRSBU continue supporting the tree trials and that the monitoring continues until the trees are harvested.	Ongoing.

**Nelson Regional Sewerage Business Unit
Financial Report**

Income Account for the period to 31st January 2016

	Actual Month	Budget Month	Actual YTD	% YTD	% Year	2015/16 Budget		YTD Variation	Comments on year to date variations
						YTD	Annual		
Income									
Contributions Fixed	356,746	407,670	2,497,223	88	51	2,853,700	4,892,000	(356,477)	Difference in ROI rate
Contributions Variable	225,219	254,920	2,065,903	116	68	1,784,400	3,059,000	281,503	Increased BOD and SS charges
Other Recoveries	9,994	13,830	77,118	80	46	96,800	166,000	(19,682)	
Interest	22	80	1,012	169	101	600	1,000	412	
Forestry Income	-	830	-			5,800	10,000	(5,800)	
Total Income	591,980	677,330	4,641,255	98	57	4,741,300	8,128,000	(100,045)	
Less Expenses									
Management	21,443	21,470	127,943	85	50	150,200	257,500	22,257	
Electricity	47,876	68,660	392,198	82	48	480,700	824,000	88,502	
Contract Maintenance	58,668	59,130	404,172	98	57	414,000	709,729	9,828	
Reactive and Proactive Maintenance	8,489	41,560	306,077	105	61	290,800	498,440	(15,277)	
Monitoring	12,457	11,900	82,209	99	58	83,200	142,555	991	
Consultancy	-	6,250	12,593	29	17	43,800	75,000	31,207	
Insurance	4,896	5,250	34,270	93	54	36,800	63,000	2,530	
Sundry	12,562	7,890	45,313	82	48	55,300	94,770	9,987	
Biosolids Disposal	46,530	47,500	333,125	100	58	332,500	570,000	(625)	
Operating & Maintenance Expenses	212,920	269,610	1,737,901	92	54	1,887,300	3,234,994	149,399	
Financial	54,978	73,500	402,813	78	46	514,500	882,000	111,687	
Depreciation	145,614	143,830	1,019,298	101	59	1,006,800	1,726,006	(12,498)	
Total Expenses	413,512	486,940	3,160,012	93	54	3,408,600	5,843,000	248,588	
Net Income before Rebate	178,469	190,390	1,481,244	111	65	1,332,700	2,285,000	148,544	
Owners rebate	0	0	0						
Net Income after rebate	178,469	190,390	1,481,244			1,332,700	2,285,000	148,544	
Capital Expenditure									
Renewals	69,224	93,900	203,231			657,420	1,127,000		
New Capital Expenditure	83,095	102,900	98,293			720,420	1,235,000		
Total Capital Expenditure	152,319	196,800	301,523			1,377,840	2,362,000		