# AGENDA

**Ordinary meeting of the**

## Nelson Regional Sewerage Business Unit

**Friday 11 December 2015**
**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)

M1634

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.

**Nelson Regional Sewerage Business Unit**

**11 December 2015**

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Page No.

## 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. Confirmation of Minutes

3.1 18 September 2015 **5 - 8**

Document number M1481

Recommendation

***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.*

## 4. General Manager's Report **9 - 35**

Document number R5189

Recommendation

***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.*

## 5. NRSBU Review of Alternative Biosolids Disposal Options 36 - 39

Document number R5197

Recommendation

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

***<u>AND THAT</u> the current biosolids disposal practice at Bell Island is economical.***

## 6. NRSBU Risk Profile - Impacts of Contributor Exit 40 - 42

Document number R5204

Recommendation

***<u>THAT</u> the report NRSBU Risk Profile - Impacts of Contributor Exit (R5204) be received.***

## 7. NRSBU Bells Island Wastewater Treatment Plant; Review of Automated Process Control and Influent Load Monitoring 43 - 46

Document number R5208

Recommendation

***<u>THAT</u> the report NRSBU Bells Island Wastewater Treatment Plant; Review of Automated Process Control and Influent Load Monitoring (R5208) be received;***

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

## 8. Audited Financial Statements 47 - 65

Document number R5237

Nelson City Council
te kaunihera o whakatū

**Minutes of a meeting of the Nelson Regional Sewerage Business Unit**

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

**On Friday 18 September 2015, commencing at 1.01pm**

| | |
|---|---|
| Present: | Councillor M Higgins (Tasman District Council), Councillor R Copeland (Nelson City Council), and Mr D Shaw |
| In Attendance: | M Hippolite (Iwi Representative), C McIntyre (Industry Customers' Representative), Nelson Regional Sewerage Business Unit General Manager (R Kirby), Senior Asset Engineer – Solid Waste (J Thiart), Management Accountant (A Bishop), and Administration Adviser (G Brown) |
| Apology: | Councillor D Dowler (Tasman District Council) |

## 1. Appointment of Chairperson

There was a discussion regarding appointing a Deputy Chairperson and having alternate councillors appointed by Tasman District Council and Nelson City Council should a councillor be unable to attend.

It was agreed that this would be considered at the start of the new triennium 2016-2019.

Resolved NRSBU/2015/008

***THAT Councillor Higgins be appointed Chairperson of the Nelson Regional Sewerage Business Unit for the 2013-2016 triennium.***

Copeland/Shaw Carried

## 2. Apology

Resolved NRSBU/2015/009

***THAT an apology be received and accepted from***

***Councillor Dowler.***

Copeland/Shaw Carried

## 3. Confirmation of Order of Business

There was no change to the order of business.

## 4. Interests

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

It was requested that the Nelson Regional Sewerage Business Unit (NRSBU) Interests Register be sent out to members for review.

## 5. Memorandum of Understanding

In response to a question, NRSBU General Manager, Richard Kirby, advised that the majority of the changes to the Memorandum of Understanding were minor. He highlighted that the main change was quorum was now two which consisted of one representative from each Council.

## 6. Confirmation of Minutes

6.1 19 June 2015

Document number M1293, agenda pages 11 - 15 refer.

The following changes were requested to the minutes:

- Page 12, change 'trail and peals' to 'trials and peaks'
- Page 14, change 'Instrument' to 'Instrumentation'.

Resolved NRSBU/2015/010

***THAT the amended minutes of the meeting of the Nelson Regional Sewerage Business Unit, held on 19 June 2015, be confirmed as a true and correct record.***

Shaw/Copeland Carried

## 7. General Manager's Report

Document number R4817, agenda pages 16 - 56 refer.

NRSBU General Manager, Richard Kirby, presented the report.

Mr Kirby advised that Alliance and Nelson Pine Industries (NPI) had queried readings which the trade waste charges were based on. He

added that Mr Wilson had also raised questions relating to the difference between the final wash up calculation and the estimate provided earlier in the year.

It was discussed that the current charging formula transferred risk for the variable charges to the other main customers if any customer changed their operations. It was suggested that a commercial charging structure going forward could be considered. If this was considered then a review was required as to how this would affect the business unit.

There was a discussion that if any if the three industries pulled out, the cost of operating the sewerage plant would be significantly less as there may not be the need for the ATADs as urban waste would be handled differently and was a lower cost operation.

It was highlighted the NPI wash up invoice was $40,000 more than previously estimated even though NPI had invested in pre-treatment works.

Invoice calculations were discussed and it was advised that there were no major errors, only a minor error in relation to the allocation of costs. The main reason for the difference was the BOD and Suspended Solids treated for NPI in the last three months were higher than estimated and increased treatment costs as a percentage of total Operating and maintenance expenditure.

Mr Kirby advised he was meeting with industry next week and would discuss a costing formula with them. In response to a question, Mr Kirby said that a charging formula review could be conducted but that the formula was quite logical. He added that risks needed to be identified and then the formula modified.

It was discussed that changes would need to be conducted with industry agreement as it was a legal contract and industry could withdraw with six months notice.

In response to a question about whether processes were robust enough, Mr McIntyre commented on the variation in sampling results and that the sampling largely reflected his firms sampling. Mr Kirby advised that there was the opportunity to contract an independent person to audit Nelmac's sampling to confirm processes were being followed.

It was suggested that a digital photograph of each sample would be beneficial.

In response to a question, Senior Asset Engineer – Solid Waste, Johan Thiart, advised that with regards to the odour concerns at Best Island it seemed to be an operational issue with fluid found in the basin and too much acid being added.

In response to a further question, Mr Thiart said geobags would still be used for dewatering but he was reluctant to use them for biosolids but

this was still under review. It was suggested that odour could be discharged underground using a treating bag with a canopy.

Mr Kirby highlighted that at the top of page 20 of the agenda the words 'with be considered' needed to be removed.

Mr Kirby also pointed out that the 'Review of security required at all facilities' should have a target date of March 2016.

The following changes were requested to the Annual Report 2014/2015:

- Page 27, the Pump Station Overflows graph is missing one overflow from the 2014/15 statistics
- Suggestion to add that there were no extreme weather events
- Page 29, Bell Island 2014/15 not 2013/14
- Page 30, 5.3 right hand column, change 'will be' to 'were' and 'considerde' to 'considered'
- Page 31, 5.6 note all communication with residents
- Page 33, check 'Biological Oxygen Demand kg/day' graph statistics
- Page 36, remove comment

Resolved NRSBU/2015/011

***THAT the report General Manager's Report (R4817) and its attachments (A1422904, A1423020) be received;***

***AND THAT the amended Annual Report 2015/16 be adopted subject to any audit amendments.***

Copeland/Higgins Carried

Attendance: Councillor Copeland left the meeting at 2.36pm.

Mr Kirby discussed the status report items.

There being no further business the meeting ended at 2.41pm.

Confirmed as a correct record of proceedings:

_____ Chairperson _____ Date

**REPORT R5189**

# 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 (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.*

## 3. Correspondence Received

### Proposed Environmental Solution for Wastewater Treatment

3.1 The NRSBU has received an offer from a company called Bokashi Logic to undertake a trial using effective micro-organism (EM) technology to improve treatment efficiency at the NRSBU Bells Island wastewater treatment plant.

3.2 Bokashi Logic has offered to run this trial at a cost of $54,570 to the NRSBU. The company wants to demonstrate the efficacy of improving the sludge treatment capacity of the facultative ponds through the application of an additive (EM technology) to the ponds.

3.3 The trial requires the isolation of one of the three facultative ponds at Bell Island for a period of six months.

3.4 Should the trial prove effective then it is estimated that the on-going annual cost to the NRSBU would be around $200,000. This has been calculated based on information received from Bokashi Logic.

3.5 The saving that this EM Technology could accrue in operational costs is likely to be around $110,000 per annum. This has been determined based

on the annualised net present value of desludging the ponds every twenty years at a 5.5% discount interest rate.

3.6 Scientific research has shown that healthy facultative ponds are supported by micro-organisms more varied and prolific than what can be added using this technology. It becomes apparent from research that the additive will have a positive effect on biologic systems where there is a deficiency in micro-organisms.

3.7 This technology was used at Bell Island in the past to try and overcome odour issues with no demonstrable improvements.

3.8 Based on the information received, it is considered that there is no cost-effective advantage in implementing the trial.

### Greenacres Golf Club

3.9 A letter was received from the Greenacres Golf Club notifying the Board that they are interested in using wastewater treated from Bell Island in future.

3.10 The Golf Club was informed that there is no intention to reticulate water from Bell Island in the current Business Plan and that the Board could investigate the viability of reticulating recycled water and consider this for inclusion into the Council's 2018-28 Long- term Plans.

## 4. Recent Actions

### Accidental Discharge Consent Application

4.1 The application was lodged and returned on 23 July 2015 as it was considered to be incomplete. Additional work has been compiled and put into the amended application. The amended application will be ready for review in December 2015.

4.2 Once the amended application is received by the NRSBU it will be reviewed by a lawyer specialising in Resource Management activities. (A proposal from Duncan Cotterill to review the application to the value of $2,000 plus disbursements has been accepted).

4.3 When the review has been completed the application will be lodged again.

### Contract 3458 – Nelmac; Operation and Maintenance

4.4 The reticulation and treatment operations have continued as normal over the last few months.

4.5 Load has been diverted away from the aeration basin for the last three weeks to optimise the use of treatment capacity of the plant. This is expected to generate power savings and a decrease in biosolids production. It is expected that this process change is likely to be maintained through to April 2016.

4.6 New duty pumps have been installed at Airport and Saxton respectively during November 2015. Duty pumps at Saxton, Airport (one of 2) and Beach Road are now all fitted with N type impellors and it is anticipated that this will improve efficiency at all three these pump stations.

### Contract 3619 – Biosolids Operation

4.7 The monthly average volume of biosolids sprayed is tracking the budgeted amount.

4.8 With changes to the loading of the plant process units, as explained above, it is expected that the volume of biosolids produced will decrease.

## 5. Key Performance Indicators

5.1 The outcomes of key performance indicators for the 3 months to 31 October 2015 are outlined as follows:

| | | | |
|---|---|---|---|
| **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 | |
| | | | |

5.2

## 6. Compliance Outcomes

6.1 The compliance outcomes for the 12 months to 31 October 2015 are outlined in the following table:

| | | |
|---|---|---|
| **i)** | **Resource Consent Compliance (rolling 12 month record)** | |
| | ➢ Discharge to Estuary Permit | Not achieved. Two discharges of raw sewage occurred at Saxton pump station during this period. |
| | ➢ 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 | Two. |
| **iv)** | **Speed of response for maintenance works** | |
| | In past three months:<br>➢ Three call outs for Saxton pump station. Blockage of duty pump.<br>➢ One call out related to Songer 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 | | |
| 2 | Consolidate all natural disaster information and review 3 yearly. | 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 | | |

| IP | Business Plan Action | Target Date | Completion Date | Comments |
|---|---|---|---|---|
| | | | | |
| 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 | | |
| 13 | Renewal of effluent discharge permit | Dec 2018 | | |
| **AP** | **AMP Action** | **Target Date** | **Completion Date** | **Comments** |
| 1 | Annual customer survey. | Mar 2016 | | |
| 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 | | |
| 5 | Monitor sludge levels in ponds and ascertain long term removal and disposal requirements. | Mar 2016 | | |
| 6 | Improve reporting requirements for asset condition, performance and maintenance from maintenance contractor. | Mar 2016 | | |
| 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 2 Health and Safety inductions and 164 visitors to the Bell Island site over the past three months.

8.2 Only one Health and Safety incident was raised during the three month period. As a consequence procedures have been put in place to strengthen the wind stays on the door to the milliscreen.

## 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 as well as other wastewater process units.

9.2 Following the replacement of the duty pumps with the spare duty pumps at the Saxton and Airport pump stations, the efficiency of the pump stations has returned back to long term trends.

## 10. Business Plan 2016/17

10.1 The Business Plan 2016/17 is appended for the consideration of the Board.

Richard Kirby
**NRSBU General Manager**

### Attachments

Attachment 1: NRSBU Status Report December 2015

Attachment 2: NRSBU Draft Business Plan 2016-17

## NRSBU STATUS REPORT - 11 December 2015

| 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. | Ongoing. |
| B | 18/09/15 | R4817 | 18/09/15 | General Manager's report | Johan Thiart | A-train tank condition assessment of lining following cleaning of tanks in December 2015. | December. |
| C | 18/09/15 | R4817 | 18/09/15 | General Manager's report | Johan Thiart | B-train and C-train will be lined conditional to the outcome of the condition assessment of the A-train tanks. | Early 2016. |
| D | 19/06/15 | M1293 | 19/06/15 | Minutes | Johan Thiart | Biosolids processing trial/ report back. | Included in this agenda |
| E | 14/03/14 | A1163334 and A1552561 | 14/03/14 | Minutes | Johan Thiart | A short report be developed quantifying the benefits to both councils of the biosolids application at Rabbit Island. | Included in this agenda |
| | | | | | | That a press release will follow the circulation of the report to the two councils. | To be considered. |
| F | 14/03/14 | A1163334 A1145728 | 14/03/14 | Minutes and officer report | Johan Thiart | Biosolids and effluent discharge reports. | TDC has indicated that they continue to consider the reports submitted last year. |
| G | 5/07/13 | 1552561 | | Minutes of meeting | J Thiart | TDC Parks and Reserves Review/Rabbit Island Management Plan. Rough Island to be considered as potential Biosolids spraying area. | Met with representatives of Otago University who are working on reserves planning for TDC and NCC. |
| H | 22/06/12 | | 22/06/12 | Minutes | J Thiart | Energy audit at pump stations | Programmed for 2016 |
| I | 14/12/12 | | | Bell Island power supply | J Thiart | Improvement of power supply by Network Tasman | Network Tasman activity. |
| 1 | 19/06/15 | M1293 | 19/06/15 | Minutes 19 June 2015 | J Thiart | THAT the Bell Island Spit Restoration project committee report annually. | |
| 2 | 19/06/15 | M1272 | 19/06/15 | General Manager's report | | THAT NRSBU contribute an amount of $20,000 for the completion of the research by SCION payable on receipt of the final environmental report; | |
| | | | | | | AND THAT NRSBU contribute an amount of $10,000 payable on receipt for the final harvest report. | |
| 3 | 19/06/15 | M1293 | 19/06/15 | Minutes 19 June 2015 | Richard Kirby | THAT the General Manager investigates future meat industry plans in ralation to NRSBU activity, and advises the Board and shareholders of the outcome of that investigation. | |
| 4 | 23/08/13 | 1582359 | 23/08/13 | Nelson Regional Sewerage Business Unit Resopurce Consent | J Thiart | AND THAT 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. |
| 5 | 22/06/12 | 1307226 | 22/06/12 | Bell Island Energy Audit | J Thiart | AND THAT the removal of the time of use meter at the dewatering building will be considered once the deferment of the thickening upgrade is confirmed; | Deferred until review of secondary sludge separation completed. |
| | | | | | | AND THAT the optimisation of $O_2$ levels in the aeration basin will be considered as part of the waste water treatment capacity review; | |
| | | | | | | AND THAT 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. | |
| 6 | 9/03/12 | 1042662 | 9/03/12 | Staff report | J Thiart | AND THAT the NRSBU continue supporting the tree trials and that the monitoring continues until the trees are harvested. | Ongoing. |

Nelson Regional Sewerage Business Unit


# BUSINESS PLAN

# 2016/17

1

# NRSBU BUSINESS PLAN 2016/17



## APPENDICES




| | |
|---|---|
| Prepared by: | Johan Thiart<br>Senior Asset Engineer – Solid Waste |
| Approved by: | Richard Kirby<br>General Manager |
| Nelson Regional Sewerage Business Unit | Approved: |


**Cover photograph:** Bell Island

## 1. PURPOSE

The purpose of the Nelson Regional Sewerage Business Unit Business Plan 2016/17 is to detail management goals and objectives to not only deliver the wastewater collection and treatment services to the region but to also improve the effectiveness and efficiency in the delivery of those services.

## 2. MEMORANDUM OF UNDERSTANDING REQUIREMENTS

The Memorandum of Understanding states that the NRSBU Board shall by 31st December each year supply to the Councils (Nelson City and Tasman District Councils) a copy of its Business Plan for the management of the Nelson Regional Sewerage Business Unit and the assets for the ensuing year, together with any variations to the charges proposed for that financial year.

## 3. INTRODUCTION

This Business Plan 2016/17 outlines the projects and initiatives to be implemented during the year. It also outlines the associated funding required and the details on the performance targets and measures.

The Business Plan is aligned with the NRSBU Strategic Plan and the NRSBU Wastewater Asset Management Plan 2014. It incorporates the business objectives and performance targets (Section 4) and the 3 year financial forecasts (Section 6). The following key pieces of information from these other documents are included in the appendices of this business plan;

Appendix B - Targeted service levels established by the Asset Management Plan;

Appendix C - Internal business improvement plan;

Appendix D - The 10 year financial plan

Appendix E - Schematic layout of the NRSBU operations.

## 4. MISSION STATEMENT

The NRSBU's mission statement is:
"To identify the long term wastewater processing and reticulation needs of our customers and to meet current and future needs in the most cost effective and sustainable manner."

## 5. STRATEGIC GOALS

The NRSBU aspire to achieve the following goals:

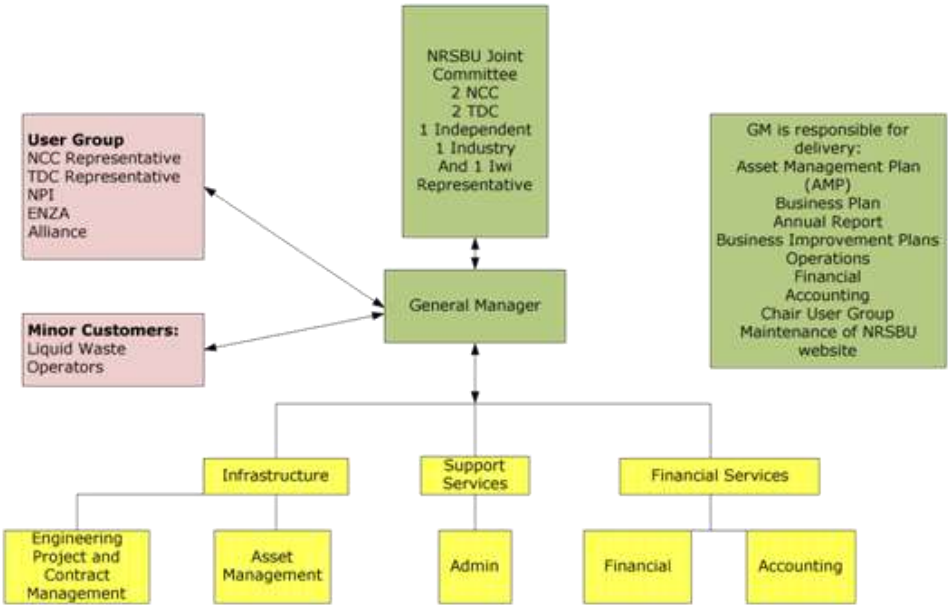
- Wastewater reticulation, treatment and disposal services meet customers' long term needs.

- The costs of wastewater reticulation, treatment and disposal services are minimised.
- Risks associated with the services provided are identified and mitigated to a level agreed with customers and owners.
- We engage the right people with the right skills and experience
- NRSBU operates sustainably and endeavours to remedy or mitigate any identified adverse environmental, social and cultural impact.
- Good relationships are maintained with all stakeholders.
- All statutory obligations are met.

All strategic goals are important and no one goal will be pursued at the expense of another.

## 6. NRSBU STRUCTURE AND BACKGROUND

The structure of the Nelson Regional Sewerage Business Unit is as follows:




The Nelson Regional Sewerage Business Unit was established in July 2000, replacing the former Nelson Regional Sewerage Authority established in the 1970s.

Following the adoption of a new Strategic Plan in August 2013 the 2014 Wastewater Asset Management Plan was developed and adopted on 28 November 2014. A draft of the long term financial plan based on the Asset Management Plan was provided to Nelson City and Tasman District Council Engineers in October 2014 to enable them to consolidate the NRSBU long term plan into their own strategic documents.

The Memorandum of Understanding (MOU) was reviewed during 2015. The new MOU commenced on 1 July 2015 and shall terminate on 30 June 2025.

With the completion of significant upgrade programmes over the last few years the treatment plant now has adequate capacity to treat projected loads to 2025 without

further significant capital investment. A review of the biosolids produced at the plant, as well as the capacity of the Radiata pine plantations on Bell Island and Rabbit Island to receive biosolids, has demonstrated that the land available for the disposal of biosolids is also adequate for projected loads up to 2025.

## 7. BUSINESS OBJECTIVES AND PERFORMANCE MEASURES

The objectives outlined below describe the long term aims of the business unit. Performance measure targets and dates (where they are not specified below) are set annually in the Business Plan along with performance measures for projects identified in the Asset Management Plan. Performance will be reported quarterly to the Board and annually or six monthly, as appropriate, to the shareholding Councils.

| Long Term Objectives | Key Performance Measures |
|---|---|
| *Wastewater reticulation, treatment and disposal services meet customers' long term needs* | |
| Sufficient reticulation, treatment and disposal capacity is available for loads received. | Loads do not exceed the capacity of the system components. |
| Intergenerational equity is maintained. | Loans are repaid over 30 years (the average life of the assets). |
| Customers are encouraged to engage with the organisation and are satisfied with the service. | All customer representatives attend at least 75% of customer meetings.<br>Customer surveys show an average score of at least 5 out of 7 on satisfaction with services. |
| Levels of service are defined in all contracts and are met. | 100% compliance with service level agreements by all major contractors. |
| *The cost of wastewater reticulation, treatment and disposal services are minimised* | |
| The costs of reticulation, treatment and disposal are minimised. | The operational costs of reticulation, treatment and disposal processes are benchmarked against costs incurred up to 30 June 2014.<br>All capital projects are delivered within budget. |
| The economic lives of all assets are optimised. | Three yearly independent audit of asset management practices confirms this. |
| Customers understand the benefits of demand management and the costs, risks and environmental implications of increasing demand. | That progress made by NCC and TDC with the implementation of load management policies, priorities and plans will be reported by June 2016.<br>Combined loads do not exceed the capacity of the components of the system. |
| New technology choices are well understood and are proven to be reliable, sustainable and cost effective. | All significant technology choices are supported by cost benefit analysis, independent peer review, energy efficiency analysis, risk analysis and, where appropriate, by other users of those technologies. |

| Long Term Objectives | Key Performance Measures |
|---|---|
| *Risks associated with the services provided are identified and mitigated to a level agreed with customers and owners.* | |
| Risk management plans include all significant health and safety, environmental, cultural, social, economic and contractual risks. | No event, which impacts on agreed levels of service, occurs that has not been identified in the NRSBU risk management plans.<br>Customer representatives review and approve the risk management plan annually and following any incidents which require activation of the plan. |
| Contingency plans adequately address emergency events. | Customer representatives review and approve the plans annually.<br>Effectiveness of plans is reviewed and confirmed following incidents which require activation of the plan. |
| *We engage the right people, with the right skills and experience.* | |
| Those engaged with the NRSBU have the right skills, experience, and support to perform well. | Annual staff performance reviews include assessment of the skills and experience required in their role in NRSBU and their development needs are identified and met.<br>Development and succession plans are in place.<br>The Board reviews its performance at least annually. |
| Operation and maintenance manuals reflect best practice for the management of the plant and reticulation systems and are followed consistently. | An independent audit every three years confirms this. |
| *NRSBU operates sustainably and endeavours to remedy or mitigate any identified adverse environmental, social or cultural impact* | |
| NRSBU minimises adverse environmental, social and cultural impacts where this is economically viable. | That progress towards meeting energy efficiency targets reported on and reviewed annually by June 2016. |
| | Current capacity to utilise beneficial application of biosolids to land is sustained.<br>Beneficial economic and environmental reuse of treated waste water is maintained or increased.<br>Environmental, social and cultural impacts are considered in all decision making. |

| Long Term Objectives | Key Performance Measures |
|---|---|
| *Good relationships are maintained with all stakeholders* | |
| Shareholders are satisfied with the strategic direction and the economic performance of the business unit. | All strategic and business plans are approved by shareholders.<br>All budget projections are met. |
| Good relationships are maintained with all stakeholders including owners, iwi, customers, contractors, neighbours, and the wider community. | All complaints or objections are addressed promptly.<br>All applications for resource consents are approved.<br>Up to date information on activities and achievements is publically available. |
| *All statutory obligations are met* | |
| All statutory obligations are identified and met and are included in contracts with suppliers. | 100% compliance with all statutory obligations. |
| All resource consent requirements are met. | 100% compliance with all resource consents. |

## 8. THREE YEAR CAPITAL EXPENDITURE FORECAST ($'000)

| Renewal Plan ($,000) | Budget 2015/16 | Projected 2015/16 | 2016/17 | 2017/18 | 2018/19 |
|---|---|---|---|---|---|
| Miscellaneous | 20 | 20 | 20 | 20 | 20 |
| Pump Stations and Rising Mains | 22 | 90 | 69 | 139 | 258 |
| Inlet, Aeration Basin, Clarifier and Ponds | 450 | 261 | 74 | 724 | 260 |
| Solids Handling | 507 | 340 | 521 | 51 | 526 |
| Rabbit Island | 98 | 98 | 98 | 0 | 46 |
| Roads | 30 | 30 | 30 | 0 | |
| Consents | | | 20 | 215 | |
| **Total =** | **1127** | **839** | **832** | **1,149** | **1,049** |

The renewal programme of NRSBU assets is developed around lifecycle and condition assessment. An iterative process is followed whereby the renewal programme is considered annually with inputs from the Operation and Maintenance operator and the review of remaining useful life of assets.

Condition assessment reports are commissioned where additional information is required to ensure optimal spend on renewals. This approach works well due to the relatively small number of different assets managed by the NRSBU.

The major components that will be considered for renewal during 2016/17 are:

- Electrical renewal at sludge and dissolved air flotation facilities;
- Control upgrade at Activated sludge and sludge facilities.

## 9. NRSBU Capital Upgrade Plan ($,000)

The following table outlines the capital upgrades proposed over the next 3 years. This is followed by a commentary outlining more detail on each of the proposals.

| Year | Description of Projects | Estimated Costs |
|---|---|---|
| 2016/17 | Modification pond M1 | 140,000 |
| | Desludging oxidation ponds | 200,000 |
| | Automation of discharge monitoring | 110,000 |
| 2017/18 | Desludging oxidation ponds | 1,400,000 |
| | Regional pipeline upgrade (Review strategy) | 40,000 |
| 2018/19 | Treatment Plant Upgrade (Consent dependent) | 2,500,000 |

**Commentary on Upgrade Proposals for 2016/17;**

Pond Improvements: The installation of the curtains in M1 will create directional flow through the pond which will result in improved treatment and removal of algae. The work will only commence once the effectiveness of improvement has in M5 has been assessed.

Desludging of Ponds: The desludging will be carried out over two financial years.

Process Monitoring: A thorough assessment of the value of the implementation of continuous process monitoring will be carried out once the value of automated load monitoring at the inlet has been evaluated.

## 10. FINANCIAL PLAN

### Nelson Regional Sewerage Business Unit
### Budget Summary for 2016 to 2019

| | Projection | Budget | | |
|---|---|---|---|---|
| | 15/16 | 16/17 | 17/18 | 18/19 |
| **Income** | | | | |
| Contributors | 7,155 | 7,752 | 7,874 | 7,869 |
| Interest | 1 | 1 | 1 | 1 |
| Other Recoveries | 156 | 156 | 156 | 156 |
| **Total Income** | 7,312 | 7,909 | 8,031 | 8,026 |
| **Expenditure** | | | | |
| Operations & Maintenance | 2,968 | 2,977 | 3,077 | 3,002 |
| Interest | 755 | 874 | 883 | 952 |
| Insurance | 63 | 63 | 63 | 63 |
| Depreciation | 1,777 | 1,821 | 1,862 | 1,892 |
| **Total Operating Cost** | 5,563 | 5,735 | 5,885 | 5,909 |
| **Surplus/Deficit** | 1,749 | 2,174 | 2,146 | 2,117 |
| **Use of Funds** | | | | |
| Loan Repayment | 650 | 781 | 713 | 843 |
| Renewals | 1,127 | 1,040 | 1,149 | 1,049 |
| Owners Distribution | 1,749 | 2,174 | 2,146 | 2,117 |
| Upgrades | 1,235 | 450 | 1,440 | 2,640 |
| | 4,761 | 4,445 | 5,448 | 6,649 |
| **Sources of Funds** | | | | |
| Surplus/Deficit | 1,749 | 2,174 | 2,146 | 2,117 |
| Depreciation | 1,777 | 1,821 | 1,862 | 1,892 |
| New Loans | 1,235 | 450 | 1,440 | 2,640 |
| | 4,761 | 4,445 | 5,448 | 6,649 |

**LONG TERM FINANCIAL STRATEGY**

The long term financial strategy (Appendix D) is a complete picture of the operations and maintenance costs and capital projects to be undertaken over the next 10 years. This strategy is based on the Nelson Regional Sewerage Business Unit Asset Management Plan 2014.

**APPENDIX A**

NELSON REGIONAL SEWERAGE BUSINESS UNIT BOARD ACTIVITY SCHEDULE 2015-16

| Date | Activity | Papers required |
|---|---|---|
| By 31 August 2016 | Review draft Annual Report and Financial Statement. | Draft annual report and financial statement. |
| By 30 September 2016 | Deliver annual financial statement to Councils. | Financial Statement. |
| By December 2016 | Review board planning/meeting timetable.<br><br>Adopt draft business plan for presentation to Tasman District Council and Nelson City Council.<br><br>Review and update Interests Register.<br><br>Adopt business continuity plan. | Planning/meeting timetable.<br><br>Business Plan.<br><br>Interests Register.<br><br>Draft business continuity plan. |
| February/March 2017 | Present Annual Report and Business Plan to Tasman District Council and Nelson City Council. | Annual Report and Business Plan. |

| Date | Activity | Papers required |
|---|---|---|
| By 30 June 2017 | Review board performance | Checklist for board effectiveness. |
| | Review governance policy | Governance Policy |
| | Review Demand Management Plan | Draft Demand Management Plan. |
| | Receive report on Contingency Plan review by customer representatives. | Report on Contingency Plan review by customer representatives. |
| | Receive report on Risk Management review by customer representatives. | Report on Risk Management review by customer representatives. |
| | Review customer satisfaction survey results | Customer survey report. |
| | Annual review of Strategic Plan | Strategic plan. |
| | Adopt Energy Conservation Plan | Energy Conservation Programme. |
| | Review Audit Management Report | |

**APPENDIX B**

**LEVELS OF SERVICE**

**The following levels of service are included in the Nelson Regional Sewerage Business Unit Asset Management Plan 2014 and compliance demonstrates progress towards achieving the Strategic Goals:**

| ENVIRONMENTAL | Category | Level of Service |
|---|---|---|
| **Treatment & Disposal** | RMA Consent - Wastewater Discharge to Coastal Marine Area | 100% compliance with consent conditions |
| | RMA Consent – Discharge of Contaminants to Air. | 100% compliance with consent conditions |
| | RMA Consent - Discharge of Contaminants to Land | 100% compliance with consent conditions |
| | Equipment Failure of critical components within the treatment and disposal system. | No equipment failures that impact on compliance with resource consent conditions. |
| **Pump Stations** | Odour complaints from pump stations | No odour complaints originating from pump stations |
| | Pump station wet weather overflows | No overflow events occurring for the contracted contributor flows |
| | Pump station overflows resulting from power failure | No overflow events occurring |
| | Pump station overflows resulting from mechanical failure. | No overflow events occurring |
| Pipelines | Reticulation Breaks | No reticulation breaks. |
| | Air valve malfunctions | No air valve malfunctions that result in overflows |

| CAPACITY | Category | Level of Service |
|---|---|---|
| **Treatment & Disposal** | Overloading system capacity | Treatment and disposal up to all contracted loads and flows |
| **Pump Stations** | Overloading system capacity | No overflows for all pump stations for the contributor flows |
| RELIABILITY | Category | Level of Service |
| **Treatment & Disposal**<br><br>Pump Stations<br><br>Pipelines | Equipment failure of critical components | No equipment failures that lead to non-compliance with resource consent conditions |

| RESPONSIVENESS | Category | Level of Service |
|---|---|---|
| **Treatment & Disposal**<br><br>Pump Stations<br><br>Pipelines | Speed of response for emergency and urgent maintenance works | Achievement of response times specified in the maintenance contract |
| | Speed of response for routine and programmable maintenance works | Achievement of response times specified in the maintenance contract |
| KEY CUSTOMER RELATIONSHIPS | Category | Level of Service |
| **Treatment & Disposal**<br><br>Pump Stations<br><br>Pipelines | Customer satisfaction | Agreed levels of service provided to all Customers |
| | | Robust charging structure is in place |

**Appendix C**

**BUSINESS IMPROVEMENT PLAN**

This section describes initiatives to improve the efficiency and effectiveness of the Business Unit and is based on the Nelson Regional Sewerage Business Unit Strategic Plan and referenced to the 2014 Wastewater Asset Management Plan.

| IP | Description | Resource Requirements | Progress |
|---|---|---|---|
| IP-1 | Review manuals annually. | In-house | Part of O&M contract. |
| IP-2 | Consolidate all natural disaster information and review 3 yearly. | In-house | On-going. |
| IP-3 | Internal benchmarking carried out annually. | In-house | Annually. |
| IP-4 | Review risk of contributors leaving NRSBU. | In-house | Annually. |
| IP-5 | Review capacity of treatment components. | In house, O&M contractor and consultants. | Annually. |
| IP-7 | Annual review of contractor performance. | In-house. | Annually. |
| IP-13 | Renewal of effluent discharge permit | In-house and contractors. | 2016/17 |

**APPENDIX D**

**10 YEAR PLANS**

**OPERATIONS, MAINTENANCE AND CAPITAL EXPENDITURE**

| NELSON REGIONAL SEWERAGE BUSINESS UNIT<br>10 Year Operations and Maintenance Plan ($,000) | Proj 15/16 | 1 16/17 | 2 17/18 | 3 18/19 | 4 19/20 | 5 20/21 | 6 21/22 | 7 22/23 | 8 23/24 | 9 24/25 | 10 25/26 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Management | 209 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| Total Financial | 755 | 874 | 883 | 952 | 1,052 | 1,082 | 1,040 | 995 | 957 | 930 | 927 |
| Depreciation | 1,777 | 1,821 | 1,862 | 1,892 | 1,906 | 1,917 | 1,917 | 1,917 | 1,917 | 1,929 | 1,955 |
| Total Electricity | 789 | 824 | 824 | 824 | 824 | 844 | 844 | 844 | 844 | 844 | 844 |
| TP Maintenance | 903 | 915 | 915 | 937 | 937 | 937 | 937 | 937 | 937 | 937 | 937 |
| PS & RM Maintenance | 281 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| Total Monitoring | 100 | 102 | 184 | 112 | 112 | 154 | 102 | 162 | 104 | 102 | 102 |
| Consultancy | 75 | 75 | 75 | 75 | 75 | 50 | 50 | 50 | 50 | 50 | 50 |
| Insurance | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| Rates & Rental | 41 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| Water Charges | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| Forestry and spit restoration | 9 | 9 | 27 | 2 | 20 | 13 | 2 | 2 | 2 | 2 | 2 |
| Biosolids Disposal | 538 | 549 | 549 | 549 | 549 | 549 | 549 | 549 | 549 | 549 | 549 |
| Telephone/Computers | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **Total Expenses** | **5,563** | **5,735** | **5,885** | **5,909** | **6,042** | **6,112** | **6,007** | **6,022** | **5,926** | **5,909** | **5,932** |

**NELSON REGIONAL SEWERAGE BUSINESS UNIT**

| 10 Year Renewal Plan ($,000) | Proj 15/16 | 1 16/17 | 2 17/18 | 3 18/19 | 4 19/20 | 5 20/21 | 6 21/22 | 7 22/23 | 8 23/24 | 9 24/25 | 10 25/26 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Miscellaneous | 20 | 20 | | | | | | | | | |
| Pump Stations and Rising Mains | 22 | 69 | | | | | | | | | |
| Inlet, Aeration Basin, Clarifier and Ponds | 450 | 281 | | | | | | | | | |
| Solids Handling | 507 | 521 | | | | | | | | | |
| Rabbit Island | 98 | 98 | | | | | | | | | |
| Roads | 30 | 30 | | | | | | | | | |
| Consents | | 20 | | | | | | | | | |
| **Total =** | 1,127 | 1,040 | 1,149 | 1,049 | 1,014 | 1,107 | 1,057 | 1,186 | 1,042 | 1,121 | 1,013 |

**Note: More detailed review of expected life of solids handling facilities and electrical control and equipment are likely to affect the renewal programme.**

**The renewal programme beyond tear 1 is indicative total cost only. Specific renewal items will be subject to condition and lifecycle assessment le3ading up to the development of the 2017/18 Business Plan.**

| Upgrade programme | | |
|---|---|---|
| **Year** | **Description of Projects** | **Estimated Costs** |
| 2016/17 | Modification pond M1 | 140,000 |
| | Desludging oxidation ponds | 200,000 |
| | Automation of discharge monitoring | 110,000 |
| 2017/18 | Desludging oxidation ponds | 1,400,000 |
| | Regional pipeline upgrade (Review strategy) | 40,000 |
| 2018/19 | Modification pond F3 | 140,000 |
| | Treatment Plant Upgrade (Consent dependent) | 2,500,000 |
| 2019/20 | Modification Facultative Pond (Consent dependent)s | 420,000 |
| | Treatment Plant Upgrade (Consent dependent) | 2,500,000 |
| 2024/25 | Disposal of dried sludge | 700,000 |
| 2025/26 | Songer street upgrade (Demand dependent) | 100,000 |
| | Disposal of dried sludge | 700,000 |
| 2026/27 | Disposal of dried sludge | 700,000 |
| 2029/30 | Richmond Regional Pipeline (Demand dependent) | 1,000,000 |
| 2030/31 | Activated sludge management (2nd Secondary clarifier) | 2,800,000 |
| 2031/32 | Richmond Regional Pipeline (Demand dependent) | 6,500,000 |
| 2032/33 | Richmond Regional Pipeline (Demand dependent) | 6,500,000 |

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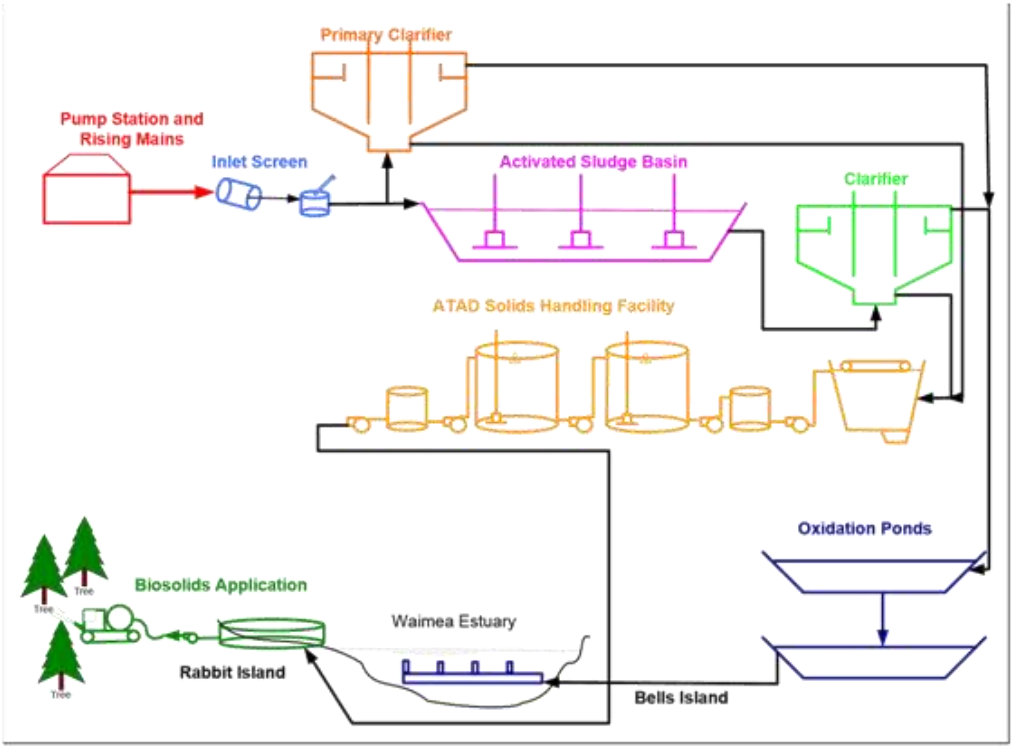
**APPENDIX E**

**BELL ISLAND TREATMENT PLANT SCHEMATIC**

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Nelson City Council
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**Nelson Regional Sewerage Business Unit**

**11 December 2015**

**REPORT R5197**

# NRSBU Review of Alternative Biosolids Disposal Options

## 1. Purpose of Report

1.1 To review the biosolids disposal options available to the NRSBU in the event that Rabbit Island is no longer available for this purpose.

## 2. Recommendation

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

***AND THAT** the current biosolids disposal practice at Bell Island is economical.*

## 3. Background

3.1 The Board has requested a short report that will quantify the benefits of biosolids application at Rabbit Island to the owners of Rabbit Island.

3.2 It is considered appropriate to understand the implications of the loss of opportunity to dispose of biosolids at Rabbit Island.

3.3 The improved productivity of the land resulting from biosolids spraying does not form part of this report, however it should be noted as being a benefit. (Extract from SCION report Attachment 1)

## 4. Rabbit Island – Biosolids Disposal

4.1 In the event that Rabbit Island becomes unavailable for biosolids disposal the NRSBU will have to consider other disposal options.

4.2 Appropriate alternative biosolids sites for bioslids disposal are limited.

4.3 The alternatives listed in the table in Clause 5.0 will have to be investigated. This will require matching sludge treatment processes at Bell Island with the most appropriate disposal option.

## 5. Comparison of seven biosolids disposal systems

5.1 As part of the exercise input was obtained from OPUS (John Crawford), MWH (Rainer Hoffman – capacity as wastewater specialist to NELMAC) and ADI (Nathan Clark – capacity as the process designer of all the major upgrades at Bell Island since 1998).

5.2 OPUS was commissioned to research the cost of treatment plants across New Zealand to establish a high level Net Present Value comparison for different modes of biosolids disposal. The NPV outcomes from this research is summarised in the following table;

| Bell Island | Dewater & Vermi Compost | Dewater & Landfill | Dewater, Thermal dry, sell | Solar Drying | Dewater & Solar Dry | Dewater & Co-Compost |
|---|---|---|---|---|---|---|
| $10,500,022 | $14,868,820 | $22,524,907 | $23,165,833 | $25,640,421 | $27,469,328 | $28,445,719 |

5.3 This table shows that the Bell Island disposal option (currently sprayed at Rabbit Island) is the most cost effective. The next most cost-effective is dewatering and applying the biosolids to a vermiculture composting operation.

5.4 The environmental benefits of disposing of biosolids on Rabbit Island cannot be underestimated. It is not only cost-effective but it also has a low carbon footprint. The alternative disposal processes are likely to have significantly larger carbon footprints.

## 6. Implementing Alternatives

6.1 The additional costs, economic as well as environmental, associated with the implementation of an alternative biosolids disposal system at Bell Island could be significant.

6.2 The provision of additional facultative pond capacity at Bells Island could be an alternative. It could be brought on line through the construction of another pond or by increasing the capacity of the current ponds to digest sludge through installation of additional aeration capacity.

6.3 Additional pond capacity would also improve the resilience of the treatment facilities at Bell Island, increase capacity and improve quality of treated wastewater.

6.4 The integration of another pond will also provide further opportunity to divert load away from the activated sludge process that can create savings in terms of the use of electricity and use of chemicals at Bell Island.

6.5 ADI reported that the facultative pond option would assist in the management of biosolids through diverting solids from the biosolids system, and improve the breakdown of solids at medium capital cost, and at low operational cost.

## 7. Biosolids Dewatering

7.1 Input received from MWH shows that it is feasible to develop a solar drying facility for the dewatering of biosolids at Bell Island. It is reported that dryness of between 70% and 80% is achievable.

### What can the biosolids be used for

7.2 The concentration of heavy metals in biosolids produced at Bell Island limit the use of the biosolids. The following table compares the typical biosolids produced at Bells Island with the New Zealand Guidelines;

| Qaulity of biosolids | Heavy metal concentration mg/kg | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | As | Cd | Cr | Cu | Hg | Ni | Pb | Zn |
| Bell Island | 13.5 | 3.1 | 103.0 | 533.0 | 1.1 | 48.0 | 50.0 | 1020.0 |
| NZ Guideline Grade a | 20.0 | 1.0 | 600.0 | 100.0 | 1.0 | 60.0 | 300.0 | 300.0 |
| NZ Guideline Grade b | 30.0 | 10.0 | 1500.0 | 1250.0 | 7.5 | 135.0 | 300.0 | 1500.0 |

7.3 The Bell Island biosolids is classified as Grade Ab and therefore has a restricted use requiring specific consents for discharge.

7.4 There is potential to reuse the biosolids produced at Bell Island through modification. Co-composting of biosolids and other organic material such as timber waste products has the potential to improve the quality of the biosolids produced to Grade Aa and will allow the use of the biosolids as an organic fertiliser.

## 8. Conclusion

8.1 The Bell Island biosolids disposal system is the most cost-effective alternative and with its low carbon footprint, should be retained by the NRSBU as the preferred disposal alternative.

8.2 That the NRSBU work with the Tasman District Council to retain all or as much area as possible of Rabbit Island for the purpose of spraying biosolids.

Richard Kirby
**NRSBU General Manager**

### Attachments

Attachment 1: SCION economic analysis of Beneficial use of biosolids at Rabbit Island

## CONCLUSIONS

Repeated application of biosolids to a *P. radiata* plantation growing on low fertility sandy soil on Rabbit Island have significantly improved tree N nutrition and consequently increased tree growth. Effectively they have transformed it from a relative low productivity to an average or above average productivity forest site. The increased productivity has also had some negative impacts on wood quality attributes with larger branches, and reduced wood density and wood stiffness of the tree crop. However, the increased stem volume and greater average log diameter in the biosolids treatments is predicted to far outweigh any negative effects on log value due to the reduced stiffness. The High and Standard biosolids treatments are predicted to increase the net stumpage value of logs by 41% and 32% respectively at harvesting, providing a large positive impact on the forest owner's economic return.

**REPORT R5204**

# NRSBU Risk Profile - Impacts of Contributor Exit

## 1. Purpose of Report

1.1 To consider the risk to the Owners, NRSBU and Contributors if a contributor exits the Trade Waste Agreement.

## 2. Recommendation

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

## 3. Background

3.1 The impact arising from a contributor exiting its Trade Waste Agreement has been listed as a business risk in the current Asset Management Plan.

| Business Risk Schedule AMP 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Plan | | |
| No | Issue | Consequence or Outcome | Mitigation Strategies | Gross Risk | (IP) Ref | | Residual Risk |
| 2 | Financial | | | | | | |
| 2.10 | Contributors go out of business due to high waste water charges. | Increased cost for existing remaining contributors. | Same as above.<br>Benchmark of operational costs does not appear to support the idea that NRSBU charges are higher than<br>Owners compensated of risk through payment of 1.5% risk premium by three industrial contributors. | Low | | | Low |

3.2 While the risk of a contributor going out of business is considered to be low it has become apparent that contributors are actively looking at modifying their discharge flows and/or loads to decrease their trade waste levies.

**3.3** Contributors have indicated that their companies are price sensitive and that strategic investment decisions are being affected by the trade waste levies currently levied by the NRSBU.

## 4. Discussion

### Affect on stakeholders if one contributor exists the trade waste agreement

4.1 Currently should a contributor exit their trade waste agreement with the NRSBU their capacity allocation would revert back to the NRSBU. It would then be available for other contributors to purchase.

4.2 If none of the current contributors want to purchase increased capacity then the surplus capacity will become the responsibility of the two Council owners of the NRSBU.

4.3 The operation and maintenance cost will be then shared by the remaining contributors. The following table outlines the impact on the fixed costs (capacity related) and the consequential allocation of operating costs to the other contributors should a contributor exit their trade waste agreement;

| Percentage increase in cost if contributor C exists the Trade Waste Agreement | | | | | | |
|---|---|---|---|---|---|---|
| Contributors | NCC | TDC | A | B | C | Owners |
| Fixed | 47% | 38% | 5% | 5% | 7% | 0% |
| | 47% | 38% | 5% | 5% | 0% | 7% |
| No decrease in O&M cost | 13% | 14% | 9% | 11% | | |
| 5% decrease in O&M cost | 10% | 11% | 6% | 8% | | |
| 15% decrease in O&M cost | 6% | 7% | 1% | 1% | | |

### Increased wastewater treatment capacity

4.4 Where any industrial contributor exits the agreement there should be a change in load to the wastewater treatment plant. Dry weather flows into the plant would reduce moderately, however the loads could reduce more significantly. This could increase available treatment capacity at Bell Island.

4.5 The changes in loads to the plant will provide a range of opportunities to the NRSBU to decrease costs to the remaining contributors or to improve environmental outcomes. The following table shows the potential decrease in loading should contributor C cease as a contributor;

| Changes to capacity of treatment plant | | | | | |
|---|---|---|---|---|---|
| | BOD | COD | SS | TN | TP |
| Current Average Load | 5854 | 14955 | 5979 | 715 | 124 |
| Loads (C exits agreement) | 1831 | 4660 | 617 | 23 | 13 |
| % load decrease | 31% | 31% | 10% | 3% | 10% |

4.6 The decrease in load resulting from an exit by industrial contributor C could generate savings on power usage at the treatment plant (Estimated 30% = $174,000 per annum) and the spraying of biosolids at Rabbit Island. (Estimated = $60,000 per annum)

4.7 The decrease in direct operational costs resulting from the exit of one of the industrial contributors will have a minor effect on the cost to the remaining contributors.

4.8 Should a contributor exit their trade waste agreement, thereby releasing capacity, then additional capital investment to increase capacity could be deferred beyond 2025.

### Other Mitigation Measures

4.9 Optimised replacement could result in a decrease in annual depreciation which would reduce trade waste levies to contributors.

4.10 Decreased sludge harvesting resulting from the exit of an industrial contributor could allow for the removal of:

- One of the three ATAD trains,
- The heat exchanger from the renewal programme.

## 5. Conclusion

5.1 Although the exit of one of the industrial contributors from their trade waste agreement will have an impact, it is considered that it will not have a dramatic impact on trade waste levies to the remaining contributors and the NRSBU owners.

Richard Kirby
**NRSBU General Manager**

**Attachments**

Nil

Nelson City Council
te kaunihera o whakatū

**Nelson Regional Sewerage Business Unit**

**11 December 2015**



**REPORT R5208**

# NRSBU Bells Island Wastewater Treatment Plant; Review of Automated Process Control and Influent Load Monitoring

## 1. Purpose of Report

1.1 To review the need for automated process control and improved influent load monitoring at the Bell Island Wastewater Treatment Plant.

## 2. Recommendation

***<u>THAT</u> the report NRSBU Bells Island Wastewater Treatment Plant; Review of Automated Process Control and Influent Load Monitoring (R5208) be received;***

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

## 3. Background

3.1 The NRSBU Business Plan 2015/16 includes an 'automation of process monitoring' project with a budget of $110,000 within the upgrades funding of $1,235,000.

3.2 It was intended that this project consider not only automated process control, but also improved load monitoring and the identification of extraordinary waste streams.

3.3 When this upgrade was considered by the NRSBU it was advised that a business case would be developed based on the outcome of automated load monitoring assessment. It was proposed that this assessment be carried out under the NELMAC contract in developing the model for the treatment plant processes.

## 4. Automated Load Monitoring Assessment

4.1 Due to difficulties in assimilating sufficient information on the various influent parameters and the consequential treatment processes, it has been decided that an automated load monitoring assessment would have

sufficient uncertainty rendering it not cost-effective. Instead a static model has been developed based on existing influent load monitoring information.

## 5. Current load monitoring

5.1 The influent constituents to Bell Island are monitored based on daily flow proportional sampling. The daily samples are analysed for COD and suspended solids by NELMAC in the Bell Island laboratory.

5.2 Once a week the samples are analysed for $TBOD_5$, COD and Total Suspended Solids (TSS) at a registered laboratory.

5.3 Once a month inlet samples are analysed for Total Nitrogen and Total Phosphorous at a registered laboratory.

5.4 Samples are also programmed to be taken daily at the contributor points of discharge and kept for one week in a deep freeze at Bell Island to allow for testing for toxins should issues be observed at the treatment plant.

5.5 Each month four consecutive daily samples taken from the contributor points of discharge are randomly selected to determine the trade waste levies for that contributor for that month.

5.6 Recently there have been questions raised by contributors regarding the veracity of sampling results at their points of discharge.

5.7 Correspondingly loading spikes have been observed during spot sampling of the influent at the Bell Island Wastewater Treatment Plant.

5.8 With these uncertainties, it is necessary that a more rigorous monitoring regime be implemented to restore confidence. It is therefore proposed that improved monitoring of influent loads to the Bell Island WWTP be implemented that will identify extraordinary loads, shock loads and to provide more certainty to the sampling results at the contributors' points of discharge.

## 6. Automated Load Monitoring Proposal

6.1 The original intention was to purchase equipment to provide automated process control, as well as improved load monitoring and the identification of extraordinary waste streams. At this stage it is not intended that the NRSBU progress with automated process control but instead implement automated continuous load monitoring.

6.2 Automated load monitoring will help provide more accurate and timely information on load composition which will deal with the uncertainties outlined in clause 5. In addition influent load concentrations will be available for analysis at 2 minute intervals for all the parameters currently tested for at monthly intervals.

6.3 The automated load monitoring equipment will gather information that can then be used to:

- Constantly calibrate the static model of the wastewater treatment process;
- Improve the understanding of waste composition that will be useful in developing future demand management strategies;
- Assist in identifying sources of spike loadings and extraordinary waste components;
- Improve the management and operation of the treatment plant.

6.4 It is therefore proposed that the equipment needed to undertake this task be procured with the funding allowed for in the Business Plan 2015/16. The equipment proposed is a spectrometer.

## 7. Automated Load Monitoring Equipment - Spectrometer

7.1 The spectrometer (S::can) has been developed by DCM Process Control. It provides robust analysis, requires low maintenance and has the mobility to be transported around the wastewater network in addition to being based at the wastewater treatment plant.

7.2 The S::can has been developed as a modular unit and can be upgraded to record additional wastewater parameters if required. It provides real time data on the concentrations of standard wastewater parameters.

7.3 The S::can will be able to;

- Identify shock loading trade waste discharges that could disrupt the treatment process at the treatment plant. Trade waste contributors have distinct spectral markers so the data gathered could identify the source of any shock loads and extraordinary loads;
- Provide data that can be used to calibrate the wastewater treatment plant model and to simulate plant processes more accurately;
- Identify trade waste discharges that should be controlled and allow the NRSBU to target source reduction through the Councils' Trade Waste Bylaws;
- Take samples where extraordinary loads are monitored. The S::can can activate alarms so that the operators can process the samples in a prompt and timely manner.

7.4 The NELMAC wastewater specialist has also endorsed the use of this equipment.

7.5 Watercare Ltd has advised that it uses several of these S::can units at their treatment plant and have found them particularly useful for monitoring trade waste discharges and process control of specific wastewater process

units within the treatment plants. Watercare Ltd also reported that the units are low maintenance and reliable.

7.6 At this stage the NRSBU is proposing to only install a "spetro::lyser" module in the S::can unit. Once the operators are comfortable using the information from it and if it is warranted, the NRSBU could consider implementing the "ammo::lyser III pro" module in the S::scan unit.

7.7 The information from the S::can unit will be available on a webserver and available for analysis by operators, the wastewater specialist and NRSBU officers.

## 8. Spectrometer Procurement Details

8.1 The S::can unit costs $86,961.73 (plus GST) to purchase. This includes installation, training, 12 months analytical support and 12 month modem fee. This cost is subject to exchange rate fluctuations.

8.2 The cost of connecting the system to SCADA network is estimated at $2,500 (plus GST).

8.3 The installation of the unit would reduce and maybe eliminate the need to collect and freeze daily samples of influent. This would potentially accrue of up to $65,000 annually in operational costs. This saving alone proves a valid business case and in addition the benefit of more certainty in other sampling results.

## 9. Conclusion

9.1 The procurement of an S::can unit will improve the operational management of the NRSBU activities. It will assist with the identification and management of trade waste discharges and provide reliable information to improve the treatment plant modelling capacity and potentially save a significant amount on operational costs.

9.2 The S::can unit will improve the ability of the NRSBU to identify extraordinary waste discharges and allow for the identification of trade waste customers by the two Councils that need to be managed through trade waste bylaws.

Richard Kirby
**NRSBU General Manager**

**Attachments**

Nil

**REPORT R5237**

# Audited Financial Statements

Attached for information is the Audit letter and approved financial statements for the year ending 30 June 2015.

Shailey McLean
**Administration Adviser**

## Attachments

Attachment 1: A1470592 - Nelson Regional Sewerage Business Unit Auditors Report 30 June 2015

Attachment 2: A1470596 - Nelson Regional Sewerage Business Unit Signed Financial Statements 30 June 2015

# Independent Auditor's Report

## To the readers of Nelson Regional Business Sewerage Unit's financial statements for the year ended 30 June 2015

The Auditor-General is the auditor of the Nelson Regional Business Sewerage Unit (the Business Unit). The Auditor-General has appointed me, Bede Kearney, using the staff and resources of Audit New Zealand, to carry out the audit of the financial statements of the Business Unit on her behalf.

## Opinion

We have audited the financial statements of the Business Unit on pages 3 to 15, that comprise the statement of financial position as at 30 June 2015, the statement of comprehensive revenue and expense, statement of changes in equity and statement of cash flows for the year ended on that date and the notes to the financial statements that include accounting policies and other explanatory information.

In our opinion, the financial statements of the Business Unit:

- present fairly, in all material respects:
  - its financial position as at 30 June 2015; and
  - its financial performance and cash flows for the year then ended; and
- comply with generally accepted accounting practice in New Zealand and have been prepared in accordance with Public Benefit Entity Standards with reduced disclosure requirements.

Our audit was completed on 26 November 2015. This is the date at which our opinion is expressed.

The basis of our opinion is explained below. In addition, we outline the responsibilities of the Board and our responsibilities, and explain our independence.

## Basis of opinion

We carried out our audit in accordance with the Auditor-General's Auditing Standards, which incorporate the International Standards on Auditing (New Zealand). Those standards require that we comply with ethical requirements and plan and carry out our audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

Material misstatements are differences or omissions of amounts and disclosures that, in our judgement, are likely to influence readers' overall understanding of the financial statements. If we had found material misstatements that were not corrected, we would have referred to them in our opinion.

An audit involves carrying out procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgement, including our assessment of risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the preparation of the Business Unit's financial statements in order to design audit procedures that are appropriate in the circumstances but not for the purpose of expressing an opinion on the effectiveness of the Business Unit's internal control.

An audit also involves evaluating:

- the appropriateness of accounting policies used and whether they have been consistently applied;
- the reasonableness of the significant accounting estimates and judgements made by the Board;
- the adequacy of the disclosures in the financial statements; and
- the overall presentation of the financial statements.

We did not examine every transaction, nor do we guarantee complete accuracy of the financial statements.

We believe we have obtained sufficient and appropriate audit evidence to provide a basis for our audit opinion.

## Responsibilities of the Board

The Board are responsible for the preparation and fair presentation of financial statements for the Business Unit that complies with generally accepted accounting practice in New Zealand.

The Board are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error. The Board are also responsible for the publication of the financial statements, whether in printed or electronic form.

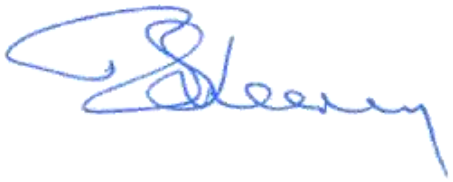
## Responsibilities of the Auditor

We are responsible for expressing an independent opinion on the financial statements and reporting that opinion to you based on our audit. Our responsibility arises from section 15 of the Public Audit Act 2001.

## Independence

When carrying out the audit, we followed the independence requirements of the Auditor-General, which incorporate the independence requirements of the External Reporting Board.

Other than the audit, we have no relationship with or interests in the Business Unit.



Bede Kearney
Audit New Zealand
On behalf of the Auditor-General
Christchurch, New Zealand

A1470592

Nelson Regional Sewerage Business Unit
PO BOX 645, NELSON, NEW ZEALAND


# NELSON REGIONAL SEWERAGE BUSINESS UNIT

## ANNUAL FINANCIAL STATEMENTS

For the Year ended 30 June 2015

A1470596

# NELSON REGIONAL SEWERAGE BUSINESS UNIT

## Representatives for year ended 30 June 2015

Representing Tasman District Council
Cr B Dowler
Cr M Higgins

Representing Nelson City Council
Cr R Copeland
Mr D Shaw

## Principal Administration Office

C/- Nelson City Council
110 Trafalgar St
Nelson

## Auditor

Audit New Zealand on behalf of the office of the Auditor-General

## Bankers

Westpac New Zealand Ltd
Queen St
Richmond

## Solicitors

Duncan Cotterill
197 Bridge St
Nelson

# NELSON REGIONAL SEWERAGE BUSINESS UNIT

**Statement of Accounting policies**
**For the year ended 30 June 2015**

## Reporting Entity

The Nelson Regional Sewerage Business Unit is a Joint Committee of Nelson City Council and Tasman District Council, under Section 48 of the Local Government Act 2002.

The primary purpose of the Nelson Regional Sewerage Business Unit is to manage the treatment facilities and network in a cost efficient and environmentally sustainable manner rather than making a financial return. Accordingly, the Business Unit has designated itself as a public benefit entity for the purposes of financial reporting.

The financial statements of the Business Unit are for the year ended 30 June 2015. The financial statements were authorised for issue by the Board on the 18th September 2015.

## Basis of Preparation

The financial statements have been prepared on the going concern basis, and the accounting policies set out below have been consistently applied to all periods presented

**Statement of compliance**

The financial statements of the Business Unit have been prepared in accordance with the requirements of the Local Government Act 2002, which includes the requirement to comply with New Zealand generally accepted accounting practice (NZ GAAP)

The financial statements of the Business Unit have been prepared in accordance with Tier 2 PBE standards on the basis that the Business Unit does not have public accountability (as defined) and has toal annual expenditure of less than $30 million.

These financial statements comply with 2 PBE standards.

These financial statements are the first financial statements presented accordance with the new PBE accounting standards. There are no material adjustmetns arising on transition to the new PBE accounting standards.

**Measurement base**

The financial statements have been prepared on a historical cost basis, modified by the revaluation of land, infrastructural assets and biological assets.

**Functional and presentation currency**

The financial statements have been prepared in New Zealand dollars and all values are rounded to the nearest dollar. The functional currency of the Business Unit is New Zealand dollars.

**Standards issued and not yet effective and not early adopted**

In May 2013, the External Reporting Board issued a new suite of PBE accounting standards for application by public sector entities for reporting periods beginning on or after 1 July 2014. The Business Unit has applied these standards in preparing the June 2015 financial statements.

In October 2014, the PBE suite of accounting standards was updated to incorporate requirements and guidance for the not-for-profit sector. These standards apply to PBEs with reporting periods after 1 April 2015. The Business Unit will apply these updated standards in preparing its 30 June 2016 financial statements. The Business Unit expects that there will be minimal or no change in applying these updated accounting standards.

**Accounting Policies**

The following particular accounting policies which materially affect the measurement of results and financial position have been applied:

**a) Revenue**

Revenue is measured at the fair value of consideration received.

**Exchange and non-exchange transactions**

An exchange transaction is one in which Council receives assets or services, or has liabilities extinguished, and directly gives approximately equal value in exchange. Non-exchange transactions are where Council receives value from another entity without giving approximately equal value in exchange

**Sales and other recoveries**

Revenue from the rendering of services is recognised by reference to the stage of completion of the transaction at balance date, based on the actual service provided as a percentage of the total services to be provided. These are exchange transactions and include rents.

**b) Borrowing Costs**

Borrowing costs are recognised as an expense in the period in which they are incurred.

**c) Cash and Cash equivalents**

Cash and Cash equivalents includes cash on hand, deposits held at call with banks, other short term highly liquid investments with orginal maturities of three months or less, and bank overdrafts.

Bank overdrafts are shown within borrowings as a current liability in the statement of financial position.

**d) Trade and other receivables**

Trade and other receivables are initially measured at fair value and subsequently measured less any provision for impairment.

A provision for impairment of receivables is established when there is objective evidence that the Board will not be able to collect all amounts due according to the original terms of the receivables.

**e) Trade and other payables**

Short term creditors and other payables are recorded at there face value.

**f) Borrowings**

Borrowings are initially recognised at their face value plus transaction costs. After initial recognition, all borrowings are measured at amortised cost using the effective interest method

Borrowings are classified as current liabilities unless the Council or group has an unconditional right to defer settlement of the liability for at least 12 months after balance date.

**g) Income tax**

As a Joint Committee of Nelson City Council and Tasman District Council the Business Unit is taxable in the two Councils. However, the Business Unit operations are a non-taxable activity for each Council.

**h) Goods and Services Tax**

The financial statements have been prepared exclusive of goods and services tax (GST) with the exception of trade receivables and payables, which are stated with GST included.

**i) Distribution Policy**

Any Net Surplus Income before extraordinary items over budget is returned to the Councils on an equal share basis. These are exchange transactions.

**j) Property, Plant and Equipment**

There are three categories of Property, Plant and Equipment:

- Freehold land
- The Infrastructural Network – incorporates pipelines, pump stations, ponds, aerators, clarifiers, odour control unit, power supply and buildings
- Work in Progress

i) Land is reviewed annually and revalued at market value every five years or if there is a material movement. The latest valuation was conducted as at 30 June 2014 by QV Valuations.

ii) Infrastructural assets are valued annually internally at depreciated replacement cost by Council engineers as at 30 June 2015. The valuation methodology has been peer reviewed by Opus International Consultants Ltd and revaluations are updated annually.

Vested infrastructure assets have been valued based on the actual quantities of infrastructure components vested and the current 'in the ground' cost of providing identical services

Depreciation is provided on a straight line basis which will write off the cost/valuation of the assets over their useful lives. The useful lives of the major classes of infrastructural assets have been estimated as follows:

| | |
|---|---|
| Buildings | 50 years |

**j) Property, Plant and Equipment continued**

| | |
|---|---|
| Ponds and Channels | |
| - earthworks | 999 years |
| - wave bands, electromechanical | 25 years |
| - pipelines, chambers, aeration basin outfall | 50 – 80 years |
| Aerators | 25 years |
| Power Supply | 25 years |
| Clarifier | |
| - earthworks | 999 years |
| - civil works | 50 years |
| - pipes | 50 – 60 years |
| - pumps | 10 – 25 years |
| - other | 10 – 25 years |
| Odour Control Unit | 10 – 50 years |
| Pump Stations | |
| - pumps | 15 - 25 years |
| - variable speed drive units | 10 years |
| - pipes and civil works | 50 years |
| - other | 25 years |
| Pipelines | |
| - pipes | 45 – 80 years |
| - air valves | 25 years |

The Business Unit has implemented an activity management plan for the continuing replacement and refurbishment of components to ensure that conveying, treatment and disposal systems are maintained to provide a satisfactory service on an ongoing basis.

iii) Work in progress is valued at cost of construction. Depreciation is applied at time of commissioning.

**k) Biological Assets**

Forestry consisting of 18 hectares planted on Bell Island adjacent to the ponds is revalued annually by P F Olsen and Company Ltd to Market Value. The latest valuation available is at 30 June 2015.

The movement in the Forestry valuation is recorded in the Surplus or Deficit.

**l) Revaluation Reserves**

The results of revaluing land and infrastructural assets are credited or debited to other comprehensive revenue and expense and are accumulated to an asset revaluation reserve in equity for that class of asset. Where this results in a debit balance in the asset revaluation reserve for any class of asset, this is expensed in the Surplus or Deficit. To the extent that increases in value offset previous decreases debited to the Surplus or Deficit, the increase is credited to the Surplus or Deficit.

**m) Statement of Cash Flows**

Cash means cash balances on hand, held in bank accounts, demand deposits and other highly liquid investments in which the Business Unit would invest as part of its day to day cash management.

Operating activities include cash received from participants and all other sources and records the cash payments made for the supply of goods and services.

Investment activities are those activities relating to the acquisition and disposal of non current assets.

Financing activities comprise the change in equity and debt capital structure of the Business Unit.

**n) Budget figures**

The budget figures are those approved by the Board at the beginning of the year in the Business Plan. The budget figures have been using accounting policies that are consistent with those adopted by the Board for the preparation of financial statements.

**o) Critical accounting estimates and assumptions**

In preparing these financial statements the Business Unit has made estimates and assumptions concerning the future. The key assumptions relate to the valuation of the Business Unit's property, plant and equipment. These estimates and assumptions may differ from the subsequent actual results. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including estimates and expectations of future events that are believed to be reasonable under the circumstances.

# NELSON REGIONAL SEWERAGE BUSINESS UNIT

## Statement of Comprehensive Revenue and Expense
### For the year ended 30 June 2015

| | Notes | Actual 2014/15 $ | Budget 2014/15 $ | Actual 2013/14 $ |
|---|---|---|---|---|
| **Revenue** | | | | |
| **Sales** | | 7,409,890 | 7,452,000 | 7,656,211 |
| Other Recoveries | | 158,553 | 188,000 | 178,655 |
| Interest | | 257 | 1,000 | 302 |
| Gain in Fair Value of Forestry | 5 | - | - | 15,456 |
| **Total Revenue** | | 7,568,700 | 7,641,000 | 7,850,624 |
| **Less Expenses** | | | | |
| Management | | 195,668 | 201,500 | 197,304 |
| Audit Fees | | 15,130 | 15,000 | 14,950 |
| Members Fees | | - | 18,500 | 16,958 |
| Interest Paid | | 865,687 | 824,000 | 809,654 |
| Insurance | | 59,971 | 59,000 | 60,104 |
| Depreciation | 6 | 1,726,006 | 1,974,000 | 1,744,186 |
| Abandoned Assets | | - | - | 63,095 |
| Electricity | | 750,435 | 762,700 | 759,741 |
| Operations & Maintenance | | 1,126,655 | 1,169,700 | 1,501,974 |
| Monitoring | | 77,121 | 118,600 | 165,588 |
| Biosolids Disposal | | 693,668 | 520,000 | 525,016 |
| Consultancy | | 38,807 | 50,000 | 27,073 |
| Sundry | | 65,274 | 82,000 | 74,031 |
| Loss in Fair Value of Forestry | 5 | 19,556 | - | - |
| Revaluation Derivative Instruments | | - | - | 259,852 |
| **Total Expenses** | | 5,633,978 | 5,795,000 | 6,219,526 |
| **Net Surplus** | | 1,934,722 | 1,846,000 | 1,631,099 |
| **Other Comprehensive Revenue and Expense** | | | | |
| Revaluation of Fixed Assets | | 1,612,130 | | 1,231,581 |
| **Total Comprehensive Revenue and Expense** | | 3,546,852 | 1,846,000 | 2,862,681 |

## Statement of Changes in Equity
### For the year ended 30 June 2015

| | Notes | Actual 2014/15 $ | Actual 2013/14 $ |
|---|---|---|---|
| **Equity at the start of Year** | | | |
| Opening Equity | | 37,237,636 | 36,329,452 |
| Plus Total Comprehensive Revenue and Expense | | 3,546,852 | 2,862,680 |
| Less Owners Distribution | | 1,934,722 | 1,954,496 |
| **Equity at the end of Year** | | 38,849,766 | 37,237,636 |

The attached notes form part of and should be read in conjunction with these financial statements

A1470596

# NELSON REGIONAL SEWERAGE BUSINESS UNIT

**Statement of Financial Position**
**as at 30 June 2015**

| | Notes | Actual 2015 $ | Actual 2014 $ |
|---|---|---|---|
| **Equity** | | | |
| Accumulated Funds | 1(a) | 15,763,734 | 15,763,734 |
| Contingency reserve | | 100,000 | 100,000 |
| Revaluation reserve | 1(b) | 22,986,032 | 21,373,902 |
| **Total Equity** | 1 | 38,849,766 | 37,237,636 |
| This was represented by: | | | |
| **Current Assets** | | | |
| Cash and cash equivalents | | 359,307 | 44,983 |
| Trade receivables from exchange transactions | | 407,418 | 178,100 |
| Inter-entity receivables from exchange transactions | 4 | 459,073 | 317,468 |
| **Total Current Assets** | | 1,225,798 | 540,551 |
| **Current Liabilities** | | | |
| Trade and other payables from exchange transactions | | 14,950 | 199,467 |
| Inter-entity payables from excahnge transactions | 4 | 1,936,743 | 2,231,457 |
| Borrowings | 2 | | 16,200,000 |
| **Total Current Liabilities** | | 1,951,693 | 18,630,924 |
| **Net Working Capital** | | (725,894) | (18,090,373) |
| **Non Current Assets** | | | |
| Property, plant and equipment | 6 | 55,564,160 | 55,296,953 |
| Forestry assets | 5 | 11,500 | 31,056 |
| **Total Non Current Assets** | | 55,575,660 | 55,328,009 |
| **Non Current Liabilities** | | | |
| Borrowings | 2 | 16,000,000 | |
| **Total Non Current Liabilities** | | 16,000,000 | |
| **Net Assets** | | 38,849,766 | 37,237,636 |

For and on behalf of the Nelson Regional Sewerage Business Unit

Chairman

General Manager

Date 26th November 2015

The attached notes form part of and should be read in conjunction with these financial statements

A1470596

# NELSON REGIONAL SEWERAGE BUSINESS UNIT

**Statement of Cash Flows**
**For the year ended 30 June 2015**

| | Notes | 2014/15 $ | 2013/14 $ |
|---|---|---|---|
| **Cash Flows from Operating Activities** | | | |
| Cash was provided from: | | | |
| Receipts from customers | | 7,197,520 | 7,525,212 |
| Interest received | | 257 | 302 |
| | | 7,197,777 | 7,525,514 |
| Payments to suppliers | | (3,318,218) | (3,358,611) |
| Interest paid | | (1,050,196) | (638,618) |
| | | (4,368,414) | (3,997,229) |
| **Net Cash Flows from Operating Activities** | 3 | **2,829,363** | **3,528,285** |
| **Investing Activities** | | | |
| Purchase of property, plant and equipment | | (380,098) | (1,599,597) |
| **Net Cash from Investing Activities** | | (380,098) | (1,599,597) |
| **Financial Activities** | | | |
| Owners Distribution | | (1,954,496) | (1,736,222) |
| Loan repayment | | (16,200,000) | (200,000) |
| Loan raised | | 16,000,000 | 0 |
| **Net Cash from Financing Activities** | | (2,154,496) | (1,936,222) |
| **Net Increase/(Decrease) in cash** | | 294,768 | (7,534) |
| Add Opening Cash and cash equivalents | | 44,983 | 52,517 |
| Closing Cash and cash equivalents | | **339,751** | **44,983** |

The attached notes form part of and should be read in conjunction with these financial statements

# NELSON REGIONAL SEWERAGE BUSINESS UNIT

**Notes to and forming part of the Financial Statements for the year ended 30 June 2015**

| | 2014/15 $ | 2013/14 $ |
|---|---|---|
| **1 Equity** | | |
| The Business Unit is jointly owned by the Nelson City Council and the Tasman District Council. | | |
| **1(a) Accumulated Funds** | | |
| Opening Balance | 15,763,734 | 16,087,131 |
| Net Surplus | 1,934,722 | 1,631,099 |
| Distribution to Owners | (1,934,722) | (1,954,496) |
| Closing Balance | 15,763,734 | 15,763,734 |
| **1(b) Revaluation Reserve** | | |
| Opening Balance | 21,373,902 | 20,142,321 |
| Revaluation Movements | | |
| Land revaluation | 0 | (21,643) |
| Buildings revaluation | 13,029 | 6,066 |
| Sewerage network revaluation | 1,587,981 | 1,246,972 |
| Plant & Equipment revaluation | 11,120 | 186 |
| Total Revaluation Movement | 1,612,130 | 1,231,581 |
| Closing Balance | 22,986,032 | 21,373,902 |
| **Balance held as follows:-** | | |
| Land | 1,657,857 | 1,657,857 |
| Buildings | 211,253 | 198,224 |
| Sewerage network | 21,025,256 | 19,437,275 |
| Plant & Equipment | 91,666 | 80,546 |
| **Total Revaluation Reserve** | 22,986,032 | 21,373,902 |

**2 Term Loans**

A core funding facility exists with Tasman District and Nelson City for 110% of the current funding with a constant maturity of no less than five years.

Interest rates payable range was 5.07% to 5.58% with a weighted average of 5.33%. (For 2013/14 the range was 4.14% to 4.5% with a weighted average of 4.14%). These rates exclude the effect of any interest rate swaps held by the Owners in 2014/15 or the Business Unit in 2013/14.

| | | |
|---|---|---|
| Total Loans | 16,000,000 | 16,200,000 |
| Less Current Portion | - | 16,200,000 |
| Term Portion | 16,000,000 | - |
| 1 to 2 years | - | - |
| 2 to 5 years | 16,000,000 | - |
| | 16,000,000 | - |

The weighted average cost of funds, which is used in calculating customer charges for the following year, as at 30 June 2015 was 4.38% (2014 4.718%)

A1470596

## 3 Reconciliation of Net Surplus with Net Cash Flow from Operating Activities

| | 2015 | 2014 |
|---|---|---|
| Net Surplus | 1,934,722 | 1,631,099 |
| Add back non cash items | | |
| Depreciation | 1,726,006 | 1,744,186 |
| Abandoned Assets | - | 63,095 |
| Gain (Loss) in fair value of forestry | 0 | (15,456) |
| Revaluation (gain) loss derivative instruments | - | 259,852 |
| Movements in Working Capital | | |
| (Increase)/Decrease in receivables | (370,923) | (309,655) |
| (Increase)/Decrease in fixed asset related payables | (985) | 504,813 |
| Increase/(Decrease) in payables | (479,231) | (131,376) |
| Items classified as financing activities | | |
| (Increase)/Decrease in owner distribution accrual | 19,774 | (218,274) |
| | 2,829,363 | 3,528,285 |

## 4 Related party transactions

Related party disclosures have not been made for transactions with related parties that are within a normal supplier or client/recipient relationship on terms and conditions no more or less favourable that those it is reasonable to expect the Business Unit would have adopted in dealing with the party at arm's length in the same circumstances.

**Related party transactions required to be disclosed**

The Business Unit has awarded a number of contracts with Nelson City Council. The contracts for provision of Management, Engineering, Secretarial and Accounting Services were tendered in 2002 and the value of the contracts for 2014/15 was $171,737. Due to the length of time since these contracts were awarded and there is no benchmarking available for these very individualised services the Business Unit is unable to determine that the contracts are at arm's length. The Business Unit is satisfied that these contracts represent value for the stakeholders because of the economies gained through the stability and continuity of the relationship(retention of both local and specific knowledge that could not be matched by a new or external supplier)

## 5 Forestry Assets

The Biological Assets are valued at Market Value. Any movement in the valuation is recorded in the Profit and Loss Account.

| | 2015 | 2014 |
|---|---|---|
| Current Market Value | 11,500 | 31,056 |
| Current increase (decrease) in Market Value | (19,556) | 15,456 |

## 6 Property, plant and equipment

| | Land | Sewerage Network | Buildings | Plant & Equipment | Total |
|---|---|---|---|---|---|
| ***Valuation / Cost*** | | | | | |
| Balance June 2013 | 2,363,643 | 52,148,565 | 235,128 | 30,533 | 54,777,869 |
| Additions 2014 | | 1,094,784 | | | 1,094,784 |
| Abandoned Assets | | (63,095) | | | (63,095) |
| Revaluation 2014 | (21,643) | 1,246,972 | 6,066 | 186 | 1,231,581 |
| Revaluation transfer | | (1,705,097) | (19,294) | (19,795) | (1,744,186) |
| Balance June 2014 | 2,342,000 | 52,722,129 | 221,900 | 10,924 | 55,296,953 |
| Additions 2015 | | 377,258 | | 3,826 | 381,084 |
| Abandoned Assets | | | | | 0 |
| Revaluation 2015 | | 1,587,981 | 13,029 | 11,120 | 1,612,130 |
| Revaluation transfer | | (1,700,725) | (19,836) | (5,446) | (1,726,007) |
| Balance June 2015 | 2,342,000 | 52,986,643 | 215,093 | 20,424 | 55,564,160 |
| ***Accumulated Depreciation*** | | | | | |
| Balance June 2013 | - | - | - | - | - |
| Depreciation charge 2014 | | 1,705,097 | 19,294 | 19,795 | 1,744,186 |
| Revaluation transfer | | (1,705,097) | (19,294) | (19,795) | (1,744,186) |
| Balance June 2014 | - | - | - | - | - |
| Depreciation charge 2015 | | 1,700,725 | 19,836 | 5,446 | 1,726,007 |
| Revaluation transfer | | (1,700,725) | (19,836) | (5,446) | (1,726,007) |
| Balance June 2015 | - | - | - | - | - |
| ***Carrying amounts*** | | | | | |
| Balance June 2014 | 2,342,000 | 52,722,129 | 221,900 | 10,924 | 55,296,953 |
| Balance June 2015 | 2,342,000 | 52,986,643 | 215,093 | 20,424 | 55,564,160 |

A1470596

## 7 Financial Instruments

The Nelson Regional Sewerage Business Unit is party to financial instrument arrangements as part of its every day operations. These financial instruments include accounts receivable, accounts payable, loans and investments.

### a) Credit Risk

Financial instruments which are potentially subject to credit risk consist of bank balances, accounts receivable and short term deposits.

| | 2015 | 2014 |
|---|---|---|
| Bank Balances | 359,307 | 44,983 |
| Accounts Receivable | 866,491 | 495,568 |

No collateral is held on the above accounts

### b) Concentration

Concentrations of credit risk with respect to accounts receivable are high, with Nelson City Council, Tasman District Council and three private users as major customers. However, all are considered high credit quality entities.

### c) Currency Risk

Nelson Regional Sewerage Business Unit has no currency risk as any financial instruments it deals with are all in New Zealand dollars.

### d) Financial instruments

The Business Unit is party to financial instrument arrangements as part of its everyday operations. These financial instruments include cash and cash equivalents, accounts receivable and payable, investments, and loans which have all been recognised in the financial statements. Revenues and expenses in relation to all financial instruments are recognised in the Statement of Comprehensive Revenue and Expense.

### e) Derivative financial instruments

| | 2015 | 2014 |
|---|---|---|
| Non-Current asset portion | - | - |
| Non-Current liability portion | - | - |

**Fair value**

During 2013/14 the Business Unit adopted a new treasury policy and as a result from the 1st July 2014 Tasman District and Nelson City provide loans to the Business Unit. On 1 July 2014 the existing Swaps were transfered to Tasman Disctrict Council and Nelson City Council at a value of nil.

**Interest rate swaps**

The notional principal amounts of the outstanding interest rate swap contracts for the Business Unit are Nil (2014 $16 m). At June 2014, the fixed interest rate swaps varied from 2.77% to 3.83%.

## 8 Statement of Contingent Assets and Contingent Liabilities

The Business Unit has no contingent asset or contingent liabilities as at 30 June 2015 (2014 Nil).

## 9 Statement of Commitments

The Business Unit has no capital commitments as at 30 June 2015 (2014 Nil).

| Operating Leases as lessor | 2015 | 2014 |
|---|---|---|
| Less that one year | 16,000 | 16,000 |
| One to Five years | 32,000 | 48,000 |
| Over five years | - | - |

## 10 Explanation of major variances against budget

### Statement of Comprehensive Revenue and Expense

Total Income is $72,300 less than budget as the value of Sales is largely driven by expenditure.

Total Expenses are $161,022 less than budget largely due to depreciation being $247,994 less than budget as a result of the 2014 revaluation, less the increased cost of Bio Disposal as a result of the contract being retendered.