Nelson City Council
te kaunihera o whakatū

lifestyle tasman district council

AGENDA

Ordinary meeting of the

Nelson Regional Sewerage Business Unit

Friday 29 August 2014
Commencing at 1.00pm
Council Chamber
Civic House
Trafalgar Street, Nelson

Membership:

Councillor R Copeland and Mr D Shaw (Nelson City Council)
Councillors B Dowler and M Higgins (Tasman District Council)

In attendance:

M Hippolite (Iwi Representative)
P Wilson (Industry Customers' Representative)

Nelson Regional Sewerage Business Unit

29 August 2014

A1235994

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 – 20 June 2014 6-13

Document number A1212937

Recommendation

THAT the minutes of the meeting of the Nelson Regional Sewerage Business Unit, held on 20 June 2014, be confirmed as a true and correct record.

4. Status Report – 29 August 2014 14

Document number A452094

Recommendation

THAT the Status Report – 29 August 2014 (A452094) be received.

5. General Manager's Report 15-21

Document number A1229361

Recommendation

THAT the report General Manager's Report (A1229361) be received.

6. Checklist (Board Work Plan)

Meeting Date	Activity	Papers required	Status
29 August 2014 Board meeting	Review of Annual Report and Financial Statement	Draft annual report and financial statement	Included in agenda
September 2014	Deliver financial statement to Councils	Financial statements	
December 2014 Board meeting	Review Board planning meeting timetable Adopt draft business plan Review and update Interest Register Adopt business continuity plan	Planning/meeting timetable. Business plan Interests register Business continuity plan.	

7. Annual Financial Statements 22-36

Document number A1236644

Recommendation

THAT the Annual Financial Statements for the year ending 30 June 2014 (A1236644) be approved, subject to audit.

8. Accounting Standards Framework Regime 37-38

Document number A1229684

Recommendation

THAT the report Accounting Standards Framework Regime A1229684 be received;

AND THAT the Nelson Regional Sewerage Business Unit elect Tier 2 reporting from 1 July 2014.

9. Transfer of Interest Rate Swaps 39-40

Document number A1230483

Recommendation

THAT the report Transfer of Interest Rate Swaps (A1230483) be received;

AND THAT the Interest Rate Swap contracts totalling $16 million entered into by Tasman District Council and Nelson City Council on 16 May 2012 on behalf of the Nelson Regional Sewerage Business Unit be transferred back to Tasman District Council and Nelson City Council at nil consideration.

10. Nelson Regional Sewerage Business Unit Annual Report 2013/2014 41-67

Document number A1227448

Recommendation

THAT the Nelson Regional Sewerage Business Unit Annual Report (A1227448) be adopted.

11. Nelson Regional Sewerage Business Unit Asset Management Plan 2014

Document number A1184459

Recommendation

THAT the Nelson Regional Sewerage Business Unit Asset Management Plan (A1184459) be adopted.

Note: The NRSBU Asset Management Plan has been circulated as a separate document.

12. Nelson Regional Sewerage Business Unit Long Term Plan 2014 68-94

Document number A1191211

Recommendation

THAT NRSBU officers continue to develop the Long Term Plan based on the plan reported.

13. Health and Safety 95-96

Document number A1236138

Recommendation

<u>THAT</u> the report Health and Safety (A1236138) be received.

Nelson City Council
te kaunihera o whakatū

Minutes of a meeting of the Nelson Regional Sewerage Business Unit

Held in the Council Chamber, Civic House, Trafalgar Street, Nelson

On Friday 20 June 2014, commencing at 1.08pm

Present: Councillor R Copeland and Mr D Shaw (Nelson City Council), Councillors B Dowler and M Higgins (Tasman District Council)

In Attendance: M Hippolite (Iwi Representative), P Wilson (Industry Customers' Representative), Nelson Regional Sewerage Business Unit General Manager (R Kirby), Senior Asset Engineer – Solid Waste (J Thiart), and Administration Adviser (E-J Ruthven)

1. Apologies

There were no apologies.

2. Interests

Members provided updates to the Interests Register, and no conflicts of interest with agenda items were declared.

3. Receipt of Independent Chairperson Resignation

Nelson Regional Sewerage Business Unit General Manager, Richard Kirby, noted that Donna Hiser had resigned as the independent member and Chairperson of the Nelson Regional Sewerage Business Unit, due to ill health.

Resolved

THAT that the Nelson Regional Sewerage Business Unit receive the resignation of Donna Hiser with regret;

AND THAT the Nelson Regional Sewerage Business Unit acknowledge the efforts of Donna Hiser for the Nelson Regional Sewerage Business Unit and a number of other council activities over the past 10 years.

Higgins/Shaw Carried

4. Election of Interim Chairperson

Councillor Dowler nominated Michael Higgins to be interim Chairperson, and this was seconded by Mr Shaw.

Resolved

THAT Councillor Michael Higgins be elected interim Chairperson of the Nelson Regional Sewerage Business Unit until such a time as a permanent replacement has been made.

Dowler/Shaw Carried

5. Confirmation of Minutes – 14 March 2014

Document number A1163334, agenda pages 6-12 refer.

There was a discussion regarding item 7.7 in the previous minutes. It was noted that, subsequent to the previous meeting, information had come to light indicating that Mr Wilks had been asked to attend the conference on behalf of the Nelson Regional Sewerage Business Unit. It was further noted that the costs of attending the conference had been adequately covered by both the Nelson Regional Sewerage Business Unit and Tasman District Council.

Resolved

THAT the minutes of a meeting of the Nelson Regional Sewerage Business Unit, held on 14 March 2014, be confirmed as a true and correct record.

Copeland/Shaw Carried

6. Status Report – 20 June 2014

Document number A452094, agenda pages 13-14 refer.

There was a discussion regarding items on the Status Report.

In response to questions, Mr Kirby explained that items B, J and 1 were programmed for the 2014/15 work programme. He added that item I would be attended to with the Customer Group meeting scheduled for the following week, and that item 3 was due for completion at the end of June 2014.

With regards to item G, it was noted that Tasman District Council was reviewing the Reserves Management Plan with regards to Rabbit Island, and it was agreed that the Business Unit needed to take part in this process. Competing pressures from other groups wishing to use Rabbit Island for recreational purposes were noted.

There was a discussion regarding item H. In response to a question, Senior Asset Engineer – Solid Waste, Johan Thiart, explained that the cost of landfilling biosolids currently sprayed would be over $700,000, although a formal report on this issue was still to be developed.

There was a further discussion regarding item 6. In response to a question, Mr Kirby explained that charging mechanism modelling was expected to be completed shortly, and would be reported on in September 2014. He said a workshop would take place shortly, focusing on growth in the two Council areas over the next 30 years, which would feed into the capacity review of the plant. It was noted that plant capacity had a significant impact on the customer charging regime, and the importance of ensuring that the capacity figures arrived at through the review were realistic was emphasised. It was further noted that the contributors be consulted after the review had been completed.

There was a brief discussion regarding item 7, during which Mr Thiart offered to take any interested members to the Bell Island Spit to observe plantings undertaken by volunteers. He said that a sign regarding plantings on the spit was due to be erected shortly.

Resolved

THAT the Status Report – 20 June 2014 (A452094) be received.

Copeland/Dowler Carried

7. Checklist (Board Work Plan)

It was clarified that the expectation was still that four committee meetings be held each year.

8. General Manager's Report

Document number A1203249, agenda pages 15-21 refer.

The Chairperson formally welcomed Mr Kirby to his first meeting as General Manager of the Business Unit.

8.1 Recent Actions

Mr Kirby provided an update regarding recent activities. He said that a constructive meeting had been held between Nelmac and Nelson City Council senior staff regarding contract 3458, and that there was a clear understanding between the parties that all actions were to be based on agreements reached verbally in the first instance.

8.2 Contract 3458 – Operations and Maintenance

In response to a question, Mr Kirby advised that utilising the facultative ponds rather than the activated sludge area for much of the year would lead to energy savings. He added that the plant's activated sludge capacity was required to address peaks throughout the year, and that this was a major benefit of having a dual capacity treatment plant.

8.3 Key Performance Indicators

It was noted that 100% compliance had been reached for all key performance indicators for the three months to 30 April 2014, and it was clarified that the table in paragraph 8.2 covered the 12 months to 30 April 2014.

8.4 Health and Safety

A briefing was suggested on the implications of new Health and Safety legislation, and assurances that health and safety obligations were being met through Nelson City Council's management processes.

8.5 Biosolids Contract

Mr Kirby explained that the only compliant tender was from the existing contractor. He said that negotiations were underway regarding the contract price, and that the current contract was likely to roll over until the new contract was finalised.

Mr Thiart added that improving pre-treatment of the biosolids was likely to decrease the actual amount of biosolids sprayed, which would affect the total cost of the contract.

In response to a question, it was clarified that there was currently adequate capacity on Bell Island and Rabbit Island, with no need to pursue biosolids application at Rough Island at this stage, although competing recreational uses of Rabbit Island may lead to Rough Island being considered further in the future.

8.6 Financial

It was noted that electricity use appeared to be dropping. In response to a question, Mr Thiart explained that running two of the ATAD trains, rather than all three, saved approximately one third of electricity costs, although the quality of biosolids was compromised to a certain extent by doing so.

Resolved

THAT the General Manager's Report (A1203249) be received.

Shaw/Copeland Carried

9. Financial Report

Document number A1111020, agenda pages 22-23 refer.

Mr Kirby explained that the fluctuation between the budgeted and actual contract and general maintenance reflected the shift in contractors. He said that the decrease in actual contract maintenance figures reflected that it was more cost-effective for the Business Unit to carry this risk.

Resolved

THAT the Nelson Regional Sewerage Business Unit Financial Statement for the period ended 30 April 2014 (A1111020) be received.

Shaw/Copeland Carried

10. Review of Strategic Plan 2013-2016

Document number A1203715, agenda pages 24-27 refer.

Mr Kirby explained that the Strategic Plan 2013-2016 was current, but could be reviewed if necessary.

There was a discussion regarding load management policies, and whether the Business Unit could create an incentive for both Councils to address this issue and reduce loads where possible.

In response to a question, Mr Thiart advised that Nelson City Council had noted a large increase in loads in the Stoke area. He said that investigations were underway as to where the increased loads were coming from, and that where appropriate, trade waste charges could be applied against users transferring high loads to the system.

Resolved

THAT the Nelson Regional Sewerage Business Unit Strategic Plan 2013-2016 (A1203715) be received.

Dowler/Higgins Carried

11. Nelson Regional Sewerage Business Unit Business Continuity Plan

Document number A1203712, agenda pages 28-44 refer.

Mr Kirby advised that the draft business continuity plan recognised that the Bell Island plant formed a part of both Councils' emergency response systems. He said it was important for the Business Unit to consider the role of the plant in a regional emergency event, and to be

able to ensure continuity both from a contract management, and contractors' perspective.

There was a discussion regarding the priorities in the event of a serious emergency, and whether minimisation of threats to the environment, or minimisation of damage to historic sites on Bell Island should also be considered as a priority as well.

It was noted that the business continuity plan was most likely to apply in the event of a significant natural disaster, and a variety of views were expressed regarding whether it was appropriate to include minimisation of threats to the environment as a priority in this type of scenario, as this may not be able to be realistically achieved.

It was further noted that the two councils were likely to have emergency provisions within their Resource Management Plans that would take account of threats to the environment.

There was a brief discussion about whether the Business Continuity Plan needed to address the potential for bird strikes at Nelson Airport, from birds nesting at Bell Island. In response to a question, Mr Thiart explained how bird numbers at Bell Island are managed.

In response to a question, Mr Thiart advised that, with regards to Appendix 1 and mitigation activities for typical disruption events, 'redundancy' referred to having back up equipment available to take over in the event of equipment failure. He said that an example of this was pump stations having stand-by pumps, so that if one failed, the second could start up, although he acknowledged that not all pump stations were equipped to this level.

Resolved

THAT the Nelson Regional Sewerage Business Unit Business Continuity Plan (A1203712) be received.

Copeland/Dowler — Carried

12. Exclusion of the Public

Resolved

THAT the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter and the specific grounds under section 48(1) of the Local Government Official

Information and Meetings Act 1987 for the passing of this resolution are as follows:

Item	General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Particular interests protected (where applicable)
1	**Nelson Regional Sewerage Business Unit – Public Excluded – 14 March 2014** These minutes confirm the minutes of 14 March 2014 and also contain information regarding: • Chairperson's Report, including information relating to actions taken by Council officers.	Section 48(1)(a) The public conduct of this matter would be likely to result in disclosure of information for which good reason exists under section 7	The withholding of the information is necessary: • Section 7(2)(a) To protect the privacy of natural persons

Dowler/Copeland Carried

The meeting went into public excluded session at 2.29pm and resumed in public session at 2.30pm.

During the public excluded part of the meeting, the committee considered the public excluded minutes of the meeting of 14 March 2014.

Resolved

THAT the minutes of part of the meeting of the Nelson Regional Sewerage Business Unit, held on 14 March 2014, be confirmed as a true and correct record.

Shaw/Copeland Carried

13. Re-admittance of the Public

Resolved

THAT the public be re-admitted to the meeting.

Higgins/Copeland Carried

There being no further business the meeting ended at 2.30pm.

Confirmed as a correct record of proceedings:

_____ Chairperson _____ Date

NRSBU STATUS REPORT - 29 August 2014

No	Meeting Date	Document Number	Report Date	Report Title / Item Title	Officer	Resolution or Action	Status
A	20/06/14	A1212937	20/06/14	Minutes of meeting	~~Richard Kirby~~	~~Report on Heath and safety obligations.~~	Included in this agenda
B	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. That a press release will follow the circulation of the report to the two councils.	
C	14/03/14	A1163334 A1145728	14/03/14	Minutes and officer report	Johan Thiart	Biosolids and effleunt discharge reports.	TDC has indicated that they continue to consider the reports submited last year.
D	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.	
E	5/07/13	1540469		Customer Survey 2012/13	J Thiart	Meetings with contributors between quarterly meetings	
F	5/07/13	1476829		Staff Report	R Kirby	Risk assessment if contributor exits the contributor agreement	
G	22/06/12		22/06/12	Minutes	J Thiart	Energy audit at pump stations	Programmed for 2015
H	14/12/12			Bell Island power supply	J Thiart	Improvement of power supply by Network Tasman	Network Tasman activity
1	31/01/14	A681693	31/01/14	Staff Report	J Thiart	THAT a further benchmark report be submitted to the Board in December 2014.	
2	23/08/13	1582359	23/08/13	Nelson Regional Sewerage Business Unit Resopurce Consent Monitoring: Discharge Permit	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.
3	15/03/13	682846V29	15/03/13	Major Projects Report	~~J Thiart~~	~~AND THAT the review of the management processes at the plant be deferred until the new Operations and Management contract has been in place for sufficient time for the new contractor to become thoroughly familiar with the plant.~~	Included in this aganda. NRSBU long term plan 2014.
4	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; 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.	Deferred until review of secondary sludge separation completed.
5	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
6	16/09/11	11497595	16/09/11	NRSBU BIWWTP Capacity and commissioning report	J Thiart	AND THAT an independent review be undertaken of the charging mechanism and user contracts once the capacity review in 2012/13 is complete;	General Manager: September 2014.
7	15/02/11	1042982	3/02/11	Bell Island Spit Restoration	J Thiart	AND THAT the project committee submit a progress report to the NRSBU on a Quarterly basis	Reportback by GM.

Nelson Regional Sewerage Business Unit Joint Committee

29 August 2014

REPORT A1229361

General Manager's Report

1. Purpose of Report

To update the Joint Committee on operational aspects of the Nelson Regional Sewerage Business Unit.

2. Recommendation

THAT the report General Manager's Report (A1229361) be received.

3. Recent Actions

The General Manager met with NRSBU officers and operator representatives to conduct a strategic planning session in June 2014. The NRSBU Long Term Plan 2014 (A1191211) records the outcome of the session.

The 2014 Estuarine Impacts of the Land Disposal of Sewage Sludge on Rabbit Island has been received.

The monitoring results indicate that, during the period April 1996 to February 2014, land application of bio-solids from the Bell Island wastewater treatment plant had not resulted in significant adverse effects to the enrichment status or contaminant levels of the Rabbit Island intertidal habitats. (The full report is published on the NRSBU website and copies will be mailed to members on request)

- "Although the present 6 year monitoring interval has not identified any significant long-term cumulative effects of the biosolids application programme (1996 – 2014), the possibility for some short-term effects to occur remains untested."

The report recommends that the monitoring programme be reviewed if it is considered that short term implications are to be evaluated.

The report was forwarded to the consent authority for consideration. Further action will be considered once feedback is received from the consent authority.

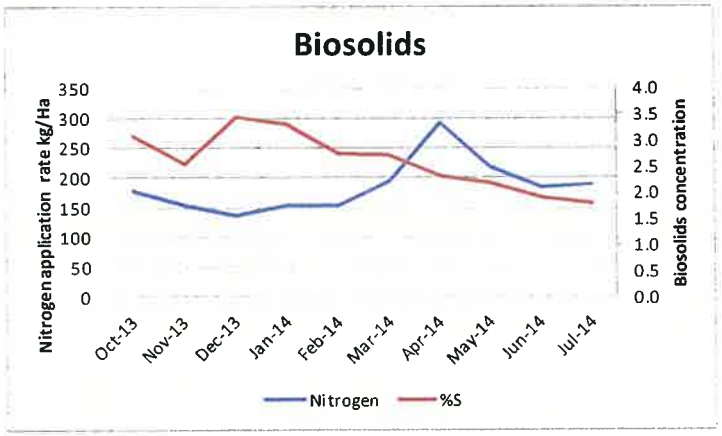
4. Contract 3458 – Operations and Maintenance

The first draft of the wastewater treatment model was received and returned with comments to the contractor for further development. This will delay the review of the treatment plant capacity.

The milliscreen was extensively refurbished following the detection of stress cracks in the screen drum. During the time that the milliscreen was out of commission for repairs it was found that the step screen (standby for milliscreen) failed to achieve adequate screening. This resulted in significant down-stream issues with pumps, feed line nozzles and sludge transfer pipelines.

Mitigation: Funding is proposed for the 2015/16 Business Plan to increase the capacity of the inlet screening.

The biosolids concentration has decreased significantly since January 2014. Investigation into the matter by operational staff has indicated that the change is associated with a decrease in feed sludge concentration.



Mitigation: Discussions with the contractor is ongoing to determine an appropriate target biosolids concentration. (At present the operator set a target of between 1% and 4%)

- Operational experience has demonstrated that higher biosolids concentrations can be achieved through the implementation of process changes without too much additional effort.
- An alternative to bring the belt thickener on line will have to be considered if the concentration of the biosolids cannot be improved using existing treatment processes at Bell Island.

5. Health and Safety

There have been 12 Health and Safety inductions and 181 visitors to the Bell Island site over the past three months.

An operator slipped on the waveband when accessing a probe for servicing. Access procedures were reviewed following the incident. The investigation

into improvements that will allow access to the dissolved oxygen probes without using the boat is continuing.

Valves were installed to isolate heated biosolids in the ATADs from causing harm during the servicing of temperature probes following an incident where a contractor burned his thumb trying to stop biosolids flow.

No further Health and Safety incidents are outstanding.

6. Bio-solids Contract

The contract for bio-solids spraying contract was extended for a month to allow Nelson City Council projects team to finalise the new contract with Astro Environmental.

Cost implications of the new contract:

- Budget: $520,000
- Estimated annual cost based on 26,000m^3 per annum = $530,000.
- Estimated annual cost based on 30,000m^3 per annum = $570,000.
- The estimated cost in the first year of the contract is projected at $610,000 and includes the renewal of equipment owned by Astro

It is projected that the volume of sludge treated at Bell Island will decrease following the completion of the desludging project at Nelson North. Nelson City Council has indicated that primary sludge diversion will be limited. It is projected that the volume of bio-solids produced at Bell Island will decrease to around the contracted lump sum cap of 26,000m^3 per annum.

There is adequate capacity within the Rabbit and Bell Island pine plantations to receive biosolids.

Biosolids		
36 Month Rolling Average/Used as percentage of capacity available		
Nitrogen Capacity used in 3 year cycle	Concentration Workability limit 5%	Area used in 3 year cycle
63%	2.7%	69%

The workability of biosolids for application is generally well within the contracted limit. The biosolids concentration has dropped significantly since December and if the treatment plant operator is unable to thicken bio-solids the annual cost of bio-solids spraying will increase significantly.

7. Key Performance Indicators

The outcomes of key performance indicators for the last 3 months to 31 July 2014 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
100% compliance	100% compliance	100% compliance	100% compliance
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
100% compliance	100% compliance	100% compliance	100% compliance
Environmental: Pipeline			
Reticulation breaks	Air valve malfunction		
100% compliance	100% compliance		
Capacity: Overloading system capacity			
Treatment & Disposal	Pump Stations		
100% compliance	100% compliance		
Reliability: Equipment failure of critical components			
Treatment & Disposal	Pump Stations	Pipelines	
100% compliance	100% compliance	100% compliance	
Responsiveness: Speed of response for emergency and urgent maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
100% compliance	100% compliance	100% compliance	
Responsiveness: Speed of response for routine and programmable maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
100% compliance	100% compliance	100% compliance	
Key customer relationships: Overall satisfaction			
Treatment & Disposal	Pump Stations	Pipelines	
100% compliance	100% compliance	100% compliance	

The compliance outcomes for the 12 months to 31st July 2014 are as follows:

i)	**Resource Consent Compliance (rolling 12 month record)**	
	➢ Discharge to Estuary Permit	Not achieved. A discharge occurred on 20 January 2014 that was outside consented discharge times.
	➢ 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	Nil.
iv)	**Speed of response for maintenance works**	
	Four call-outs were recorded over the past three months	
	➢ Response within 30 minute response requirement. Achieved.	

8. Review of Action Plan Implementation – 2013 Asset Management Plan

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

AP	Action	Target Date	Completion Date	Comments
Levels of Service				
1.1	Annual customer survey.	March 2014	April 2014	Completed and reported June 2014
Demand Management				
2.1	Extending/renewing the Memorandum of Understanding that expires in 2010.	2014/15		Await action by shareholders (Nelson City Council and Tasman District Council)
2.2	Review Improvement Plan, consider and if appropriate prioritise and move to action.		Ongoing	Continuing.
2.3	Flow and load analyses.	July 2014	31 July 2014	Reported in Annual Report.

AP	Action	Target Date	Completion Date	Comments
Risk Management				
3.1	Carry out a risk assessment at component level and maintain risk schedules.	December 2013	June 2014	Included in the 2015 Asset Management Plan.
3.2	Annual calibration. (Flow meters)	June 2014		The calibration of council owned flow meters were carried out. The flow meters at NPI and Alliance were installed during the last financial year and will be calibrated at the end of the 2014/15 financial year.
3.3	Emergency spillage contingency plans and alarms procedures reviewed.	March 2014	March 2014	Completed as part of the NCC Emergency Procedures Manual.
Financial				
4.1	Valuation.	August 2014	31 July 2014	Internal valuation completed. Awaiting peer review.
4.2	Business Continuity Plan updated.	June 2014	June 2014	Drafted and presented June 2014.
4.3	Internal review of customer charging model.	June 2014	September 2014	Proposed to go to the contributors in September 2014.
Asset Management				
5.1	Review Asset Management Plan.	29 August 2014	29 August 2014	Draft submitted to Board for considferation.
5.2	Renewal programme review.	June 2014	29 August 2014	Long term strategy report workshopped with Board.
5.3	Treatment Plant Capacity Review.	August 2014		The draft modelling report was reviewed and returned to the contactor for further development.
General				
6.1	Board Workshop.	29 August 2014	29 August 2014	Long Term Renewal Strategy and Draft Asset Management Plan.

9. Financial

The updated operation and maintenance costs to 31 July 2014 are outlined in the Annual Report 2013/14 under separate agenda item.

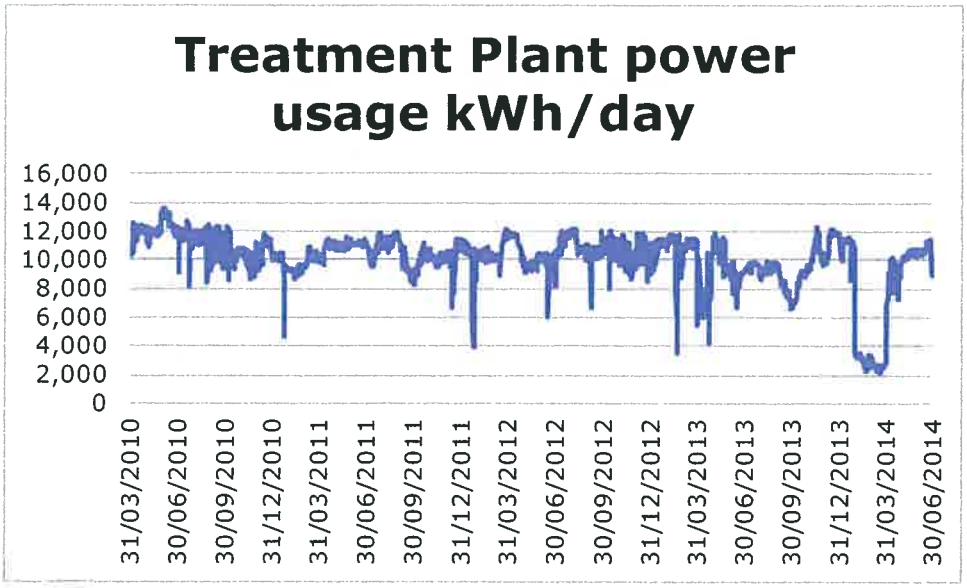


Figure 10.1 Treatment plant power use.

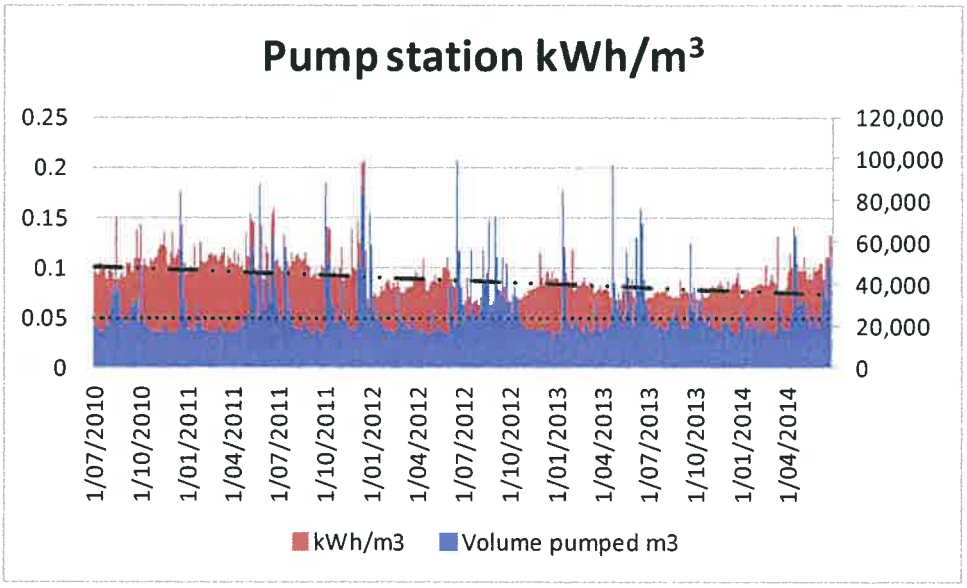


Figure 10.2 Pump stations power use

10. Conclusion

The NRSBU facilities are continuing to function well and the key performance indicators show 100% compliance to date.

R J Kirby
General Manager NRSBU

Attachments

None

NELSON REGIONAL SEWERAGE BUSINESS UNIT

ANNUAL FINANCIAL STATEMENTS

For the Year ended 30 June 2014

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Representatives for year ended 30 June 2014

Representing Tasman District Council
Cr G Glover till 12th October 2013
Cr M Higgins
Cr B Dowler from 31st October 2014

Representing Nelson City Council
Mr D Shaw
Cr P Matheson till 12th October 2013
Cr R Copeland from 12 December 2013

Independent Member
Ms D Hiser (Chair) till 26th May 2014

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 2014

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 New Zealand Equivalents to International Financial Reporting Standards (NZ IFRS)

The financial statements of the Business Unit are for the year ended 30 June 2014. The financial statements were authorised for issue by the Board on the XXth September 2014.

Basis of Preparation

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) They comply with NZ IFRS, and other applicable Financial Reporting Standards, as appropriate for public benefit entities.

The accounting policies set out below have been consistently applied to all periods presented in the financial statements.

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.

Changes in Accounting Policies

The Minister of Commerce has approved a new Accounting Standards Framework (incorporating a Tier Strategy) developed by the External Reporting Board (XRB). Under this Accounting Standards Framework, the Business Unit will be eligible to apply the reduced disclosure regime (Tier 2 reporting entity) of the public sector Public Benefit Entity Accounting Standards. The effective date for the new standards for public sector entities is for reporting periods beginning on or after 1 July 2014. Therefore, the Business Unit will transition to the new standards in preparing its 30 June 2015 financial statements. The Business Unit has not assessed the implications of the new Accounting Standards Framework at this time.

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.

b) Borrowing Costs

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

c) Financial Instruments

The Business Unit is party to financial instruments as part of its normal operations. These financial instruments include bank accounts, investments, receivables, payables and loans. All financial instruments are recognised in the Statement of Financial Position and all revenues and expenses in relation to financial instruments are recognised in the Surplus or Deficit.

Except for loans, which are recorded at cost, and those items covered by a separate accounting policy, all financial instruments are shown at their estimated fair value.

d) Derivative financial instruments

The Council uses derivative financial instruments (interest rate swaps) to minimise its risk associated with interest rate fluctuations. Such derivative financial instruments are initially recognised at fair value on the date on which the derivative contract is entered into and subsequently re-measured to fair value. Derivatives are carried as assets when their fair value is positive and as liabilities when their fair value is negative.

Swaps are entered into with the objective of reducing the risk of rising interest rates. Any gains or losses arising from the changes in fair value of derivatives are taken directly to the surplus or deficit for the year. The fair value of interest rate swaps is determined by reference to market values for similar instruments. The net differential paid or received on interest rate swaps is recognised as a component of interest expense or interest revenue over the period of the agreement.

e) 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 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.

f) 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.

g) Financial Assets

Investments in bank deposits are measured at fair value.

h) 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.

i) 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.

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 2014. The valuation methodology has been peer reviewed by MWH New Zealand 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
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

j) Property, Plant and Equipment continued

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 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
Aeration Basin Upgrade	10 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 2014.

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 income 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 prepared in accordance with NZ IFRS, 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 Income
For the year ended 30 June 2014

	Notes	Actual 2013/14	Budget 2013/14	Actual 2012/13
Income		$	$	$
Sales		7,656,211	8,212,000	7,736,835
Other Recoveries		178,655	172,000	185,700
Interest		302	1,000	146
Loss/(Gain) in Fair Value of Forestry	5	15,456	-	4,700
Revaluation Derivative Instruments		-	-	335,844
Total Income		7,850,625	8,385,000	8,263,225
Less Expenses				
Management		197,304	133,500	221,240
Audit Fees		14,950	10,000	14,500
Additional audit fee - 2012		-	-	12,000
Members Fees	7	16,958	18,500	18,500
Interest Paid		809,654	908,000	762,696
Insurance		60,104	60,000	60,074
Depreciation	6	1,744,187	2,004,000	1,819,403
Abandoned Assets		63,095	-	17,504
Electricity		759,741	754,000	743,734
Operations & Maintenance		1,501,974	1,769,000	1,715,276
Monitoring		165,588	167,000	138,353
Biosolids Disposal		525,016	520,000	510,750
Consultancy		27,073	75,000	101,476
Sundry		74,030	72,000	60,059
Forestry Costs		-	-	13,784
Revaluation Derivative Instruments		259,852	-	-
Total Expenses		6,219,525	6,491,000	6,209,349
Net Surplus		1,631,100	1,894,000	2,053,876
Other Comprehensive Income				
Revaluation of Fixed Assets		1,231,581		324,032
Total Comprehensive Income		2,862,681	1,894,000	2,377,908

Statement of Changes in Equity
For the year ended 30 June 2014

	Notes	Actual 2013/14	Budget 2013/14	Actual 2012/13
Equity at the start of Year		$	$	$
Opening Equity		36,329,452	33,040,000	35,687,766
Plus Total Comprehensive Income		2,862,681	1,894,000	2,377,908
Less Owners Distribution		1,954,496	1,788,000	1,736,222
Equity at the end of Year		37,237,637	33,146,000	36,329,452

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

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Statement of Financial Position
as at 30 June 2014

	Notes	Actual 2014 $	Budget 2013	Actual 2013 $
Equity				
Retained earnings	1(a)	15,763,734	15,628,000	16,087,131
Contingency reserve		100,000	100,000	100,000
Revaluation reserve	1(b)	21,373,902	17,312,000	20,142,321
Total Equity	1	37,237,636	33,146,000	36,329,452
This was represented by:				
Current Assets				
Cash and cash equivalents		44,983	94,000	52,517
Trade receivables		178,100	236,000	185,914
Total Current Assets		223,084	330,000	238,431
Current Liabilities				
Trade and other payables		199,467	655,000	123,873
Inter-entity trade payables	4	1,913,989	3,541,000	2,438,427
Borrowings	2	16,200,000	-	16,400,000
Total Current Liabilities		18,313,456	4,196,000	18,962,300
Net Working Capital		(18,090,372)	(3,866,000)	(18,723,869)
Non Current Assets				
Property, plant and equipment	6	55,296,952	55,550,000	54,777,869
Forestry assets	5	31,056	85,000	15,600
Derivative Financial Instruments	8(e)	-	-	259,852
Total Non Current Assets		55,328,008	55,635,000	55,053,321
Non Current Liabilities				
Borrowings	2	-	18,729,000	-
Derivative Financial Instruments	8(e)	-	-	-
Total Non Current Liabilities		-	18,729,000	-
Net Assets		37,237,636	33,040,000	36,329,452

For and on behalf of the Nelson Regional Sewerage Business Unit

Chairman

Date XX September 2014

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

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Statement of Cash Flows
For the year ended 30 June 2014

	Notes	2013/14 $	2012/13 $
Cash Flows from Operating Activities			
Cash was provided from:			
Receipts from customers		7,842,680	7,795,307
Interest received		302	146
		7,842,983	7,795,452
Payments to suppliers		(3,676,078)	(4,159,421)
Interest paid		(638,618)	(821,597)
		(4,314,696)	(4,981,018)
Net Cash Flows from Operating Activities	3	3,528,286	2,814,434
Investing Activities			
Purchase of property, plant and equipment		(1,599,598)	(1,068,231)
Net Cash from Investing Activities		(1,599,598)	(1,068,231)
Financial Activities			
Owners Distribution		(1,736,222)	(1,119,752)
Loan repayment		- 200,000	0
Loan raised		0	(650,000)
Net Cash from Financing Activities		(1,936,222)	(1,769,752)
Net Increase/(Decrease) in cash		(7,534)	(23,549)
Add Opening Cash and cash equivalents		52,517	76,066
Closing Cash and cash equivalents		44,983	52,517

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 2014

	2013/14 $	2012/13 $
1 Equity		
The Business Unit is jointly owned by the Nelson City Council and the Tasman District Council.		
1(a) Retained Earnings		
Opening Balance	16,087,131	15,769,477
Net Surplus	1,631,100	2,053,876
Distribution to Owners	(1,954,496)	(1,736,222)
Closing Balance	15,763,735	16,087,131
1(b) Revaluation Reserve		
Opening Balance	20,142,321	19,818,289
Revaluation Movements		
Land revaluation	(21,643)	-
Infrastructure revaluation	1,253,224	324,032
Total Revaluation Movement	1,231,581	324,032
Closing Balance	21,373,902	20,142,321
Balance held as follows:-		
Land	1,657,857	1,679,500
Buildings	198,224	192,158
Sewerage network	19,428,608	18,190,303
Plant & Equipment	80,546	80,360
Total Revaluation Reserve	21,365,235	20,142,321

2 Term Loans

A $25m multi-option facility exists that is secured over rates revenue of the Tasman District and Nelson City which expires 1st July 2014.

Interest rates payable range was 4.14% to 4.5% with a weighted average of 4.14%. (For 2012/13 the range was 3.69% to 3.69% with a weighted average of 3.69%).

Total Loans	16,200,000	16,400,000
Less Current Portion	16,200,000	16,400,000
Term Portion	-	0
1 to 2 years	-	-
2 to 5 years	-	-
	-	-

The weighted average cost of funds as at 30 June 2014 was 4.718% (2013 4.706%)

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

Net Surplus	1,631,100	2,053,876
Add back non cash items		
Depreciation	1,744,187	1,819,403
Abandoned Assets	63,095	17,504
Gain (Loss) in fair value of forestry	(15,456)	(4,700)
Revaluation (gain) loss derivative instruments	259,852 -	335,844
Movements in Working Capital		
(Increase)/Decrease in receivables	7,814	(127,229)
(Increase)/Decrease in fixed asset related payables	504,814	73,488
Increase/(Decrease) in payables	(448,844)	(65,593)
Items classified as financing activities		
(Increase)/Decrease in owner distribution accrual	(218,273)	(616,471)
	3,528,288	2,814,434

4 Transactions for Related Parties

For the year ended 30 June 2013, Nelson Regional Sewerage Business Unit -

	2014	2013
Purchased the following from:		
Tasman District Council:		
- Rates & Water	48,133	47,986
- Consent & Monitoring Fees	3,413	3,711
Nelson City Council:		
- Management. Engineering Secretarial and Accounting Services	190,718	231,709
- Rates & Water	3,189	5,489
- Engineering Sevices Capitalised	1,074	4,505
- Consent & Monitoring Fees	0	4,608
Nelmac		
- Maintenance and capital work	1,086,889	5,581
Provide bulk sewage services to:		
- Tasman District Council	2,600,002	2,585,358
- Nelson City Council	3,193,114	3,184,951
At year end the Business Unit owed related parties as follows:		
- Nelson City Council	1,113,297	1,825,212
- Tasman District Council	800,691	613,214
- Nelmac	127,926	-

5 Forestry Assets

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

	2014	2013
Current Market Value (NZ IFRS)	31,056	15,600
Current increase (decrease) in Market Value	15,456	4,700

6 Property, plant and equipment

	Land	Sewerage Network	Buildings	Plant & Equipment	Total
Valuation / Cost					
Balance June 2012	2,169,000	52,858,422	235,111	33,467	55,296,000
Additions 2013	194,643	800,100	-	-	994,743
Abandoned Assets	-	- 17,504	-	-	- 17,504
Revaluation 2013	-	294,998	17,305	11,729	324,032
Revaluation transfer	-	(1,787,451)	(17,288)	(14,663)	(1,819,402)
Balance June 2013	2,363,643	52,148,565	235,128	30,533	54,777,869
Additions 2014		882,888			882,888
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 2013	2,342,000	52,510,233	221,900	10,924	55,085,057
Accumulated Depreciation					
Balance June 2012	-	-	-	-	-
Depreciation charge 2012		1,787,451	17,288	14,663	1,819,402
Revaluation transfer		(1,787,451)	(17,288)	(14,663)	(1,819,402)
Balance June 2013	-	-	-	-	-
Depreciation charge 2013		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	-	-	-	-	-
Carrying amounts					
Balance June 2013	2,363,643	52,148,565	235,128	30,533	54,777,869
Balance June 2014	2,342,000	52,510,233	221,900	10,924	55,085,057

7 Members Fees

Remuneration and other benefits paid or due and payable to directors, for services as members during the year ending 30 June 2014, are as follows:

- Donna Hiser	16,958	18,500

8 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.

	2014	2013
Bank Balances	44,983	52,517
Accounts Receivable	178,100	185,914

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 Income.

e) Derivative financial instruments

	2014	2013
Non-Current asset portion	-	259,852
Non-Current liability portion	-	0

Fair value

The fair value of interest rate swaps have been determined by calculating the expected cash flows under the terms of the swaps and discounting these values to present values. The inputs into the valuation model are from independently sourced market parameters such as interest rate yield curves. Most market parameters are implied from instrument prices.

During the year the Business Unit adopted a new treasury policy and as a result from the 1st July 2014 Tasman District and Nelson City will provide loans to the Business Unit. The existing swaps revert to the two Councils on 1 July and have been valued at the transfer value of nil..

Interest rate swaps

The notional principal amounts of the outstanding interest rate swap contracts for the council are $16 million (2013 $16 m). At June 2013, the fixed interest rate swaps varied from 2.77% to 3.83% (2013 2.77% to 3.83%)

8 Financial Instruments e) Derivative financial instruments continued
Sensitivity analysis

The table below illustrates the potential profit and loss impact for reasonably possible market movements, with all other variables held constant, based on the Business Unit's derivative financial instrument exposures at balance date

+100bps	0	588,940
-100bps	0	(628,454)

9 Statement of Contingent Assets and Contingent Liabilities

The Business Unit has no contingent asset or contingent liabilities as at 30 June 2014 (2013 Nil).

10 Statement of Commitments

The Business Unit has no capital commitments as at 30 June 2014 (2013 $20,000).

11 Post Balance Date Events

On the 1st July 2014 the borrowings from the bank were repaid

12 Explanation of major variances against budget

Explanations for major variations from the Nelson Regional Sewerage Business Unit's 2013/14 Business Plan are as follows:

Statement of Comprehensive Income

Total Expenses are $272,000 less than budget due to savings in operation & maintenance of $267,000 due to the change in operator, depreciation of $260,000 due to valuation differences and interest of $98,000. These savings were partially offset by increased management costs of $63,000 principally relating to the tendering of the operations contract, abandioned assets totalling $63,000 and revaluation of Derivative instruments of $260,000.

Total Income is $534,000 less than budget due to Sales from Customers being $556,000 less than budget as a result of the 2013 valuation ($355,000) and operational savings of ($201,000) passed back to customers.

The net surplus is $262,000 less than budget due to the above.

The annual fixed asset revaluation this year is $1,223,000.

Statement of Financial Position

The revaluation reserve has increased by $4,053,000 compared to budget principally due to the movement in valuation indicies in both 2013 and 2014 years.

Retained earnings has decreased by $136,000 as a result of not distributing the unfunded elements of the surplus such as abandoned assets and revaluations of derivative instruments.

Trade and other payables and Inter-entity payables have reduced due to the reduction in capital expenditure activity.

Borrowings are $2,529,000 less than budget due to savings in Capital Expenditure. The Borrowings have been reclassified as Current Liabilities as the facility hasn't been reviewed during the year and is due to expire at 1 July 2014.

Nelson City Council
te kaunihera o whakatū

Nelson Regional Sewerage Business Unit

29 August 2014

REPORT A1229684

Accounting Standards Framework Regime

1. Purpose of Report

1.1 To adopt a new Accounting Standards Framework regime.

2. Recommendation

THAT the report Accounting Standards Framework Regime A1229684 be received;

AND THAT the Nelson Regional Sewerage Business Unit elect Tier 2 reporting from 1 July 2014.

3. Background

3.1 The Ministry of Commerce has approved a new Accounting Standards Framework which incorporates a Tier Strategy for reporting which is effective for reporting periods beginning on or after 1 July 2014.

4. Discussion

4.1 The framework defines the Accounting Standards that should be applied based on what tier an entity is in. An organisation can elect to be in a higher tier.

4.2 The tiers for Public Benefit Entities (PBE) are -

	Entities	Accounting Standards
Tier 1	Publicly accountable (as defined); or Large (as defined)	PBE Standards
Tier 2	Non-publicly accountable (as defined) and non-large (as defined) *Which elect to be in Tier 2*	PBE Standards Reduced Disclosure Regime (PBE Standards RDR)
Tier 3	Non-publicly accountable (as defined) with expenses ≤ 2 million *which elect to be in Tier 3.*	PBE Simple Format Reporting Standard - Accrual (PSFR-A)
Tier 4	Entities allowed by law to use cash accounting *which elect to be in Tier 4.*	PBE Simple Format Reporting Standard - Cash (PSFR-C)

4.3 Tier 1 is the default tier for all Public Benefit Entities (PBE) however a PBE may elect to be in Tier 2 if it does not have public accountability (as defined) and is not a large PBE (as defined).

4.4 The Nelson Regional Sewerage Business Unit is a Public Benefit Entity but is not 'publicly accountable' nor is it 'large' so may elect to be Tier 2.

5. Options

5.1 The NRSBU could not elect to be Tier 2 and remain Tier 1. This would require full PBE Standard disclosure. Any additional information to that required by Tier 2 can be provided on an adhoc basis.

5.2 The NRSBU could elect to be Tier 2. This election would enable reduced Disclosure in its annual financial statements than option 1. This option doesn't limit the NRSBU from additional disclosures required by the two controlling Councils.

- This is the most cost effective option for households and businesses.
- This option will be delivered in a way that is efficient, effective and appropriate to present and anticipated future circumstances.

6. Assessment of Significance against the Council's Significance Policy

6.1 This decision is not significant as the additional disclosures required for Tier 1 are not relevant to the NRSBU.

7. Conclusion

7.1 Electing Tier 2 reporting is the preferred option.

Andrew Bishop
Management Accountant Nelson City Council

Attachments

None

Nelson City Council
te kaunihera o whakatū

Nelson Regional Sewerage Business Unit

29 August 2014

REPORT A1230483

Transfer of Interest Rate Swaps

1. Purpose of Report

1.1 To confirm the transfer of Interest Rate Swaps to Tasman District Council and Nelson City Council.

2. Recommendation

THAT the report Transfer of Interest Rate Swaps (A1230483) be received;

AND THAT the Interest Rate Swap contracts totalling $16 million entered into by Tasman District Council and Nelson City Council on 16 May 2012 on behalf of the Nelson Regional Sewerage Business Unit be transferred back to Tasman District Council and Nelson City Council at nil consideration.

3. Background

3.1 At the 31 January 2014 meeting of the NRSBU, the Board approved a new Treasury Policy which provides for the two Councils manage the NRSBU's borrowing programme including managing the associated interest rate risk.

4. Discussion

4.1 Given the two Councils have assumed management of interest rate risk it is inappropriate for the NRSBU to hold interest rate swap contracts.

4.2 As the two Councils bear the actual interest expense it is appropriate to transfer swaps the at nil consideration.

5. Options

5.1 The NRSBU could transfer the swaps at market value. This would require agreement from all parties to the valuation and therefore is administratively awkward. This is not recommended.

5.2 The NRSBU could continue to hold the swaps until maturity which would result in unnecessary volatility in the NRSBU accounts during their life.

5.3 The NRSBU could transfer the swaps to the two Councils at a nil consideration.

6. Assessment of Significance against the Council's Significance Policy

6.1 This decision is not significant as on consolidation in the two Councils accounts there is no effect.

7. Conclusion

7.1 Transferring the swaps to the two Councils is the most efficient option and is therefore the preferred option.

Andrew Bishop
Management Accountant Nelson City Council

Attachments

None

Nelson Regional Sewerage Business Unit

ANNUAL REPORT 2013/2014

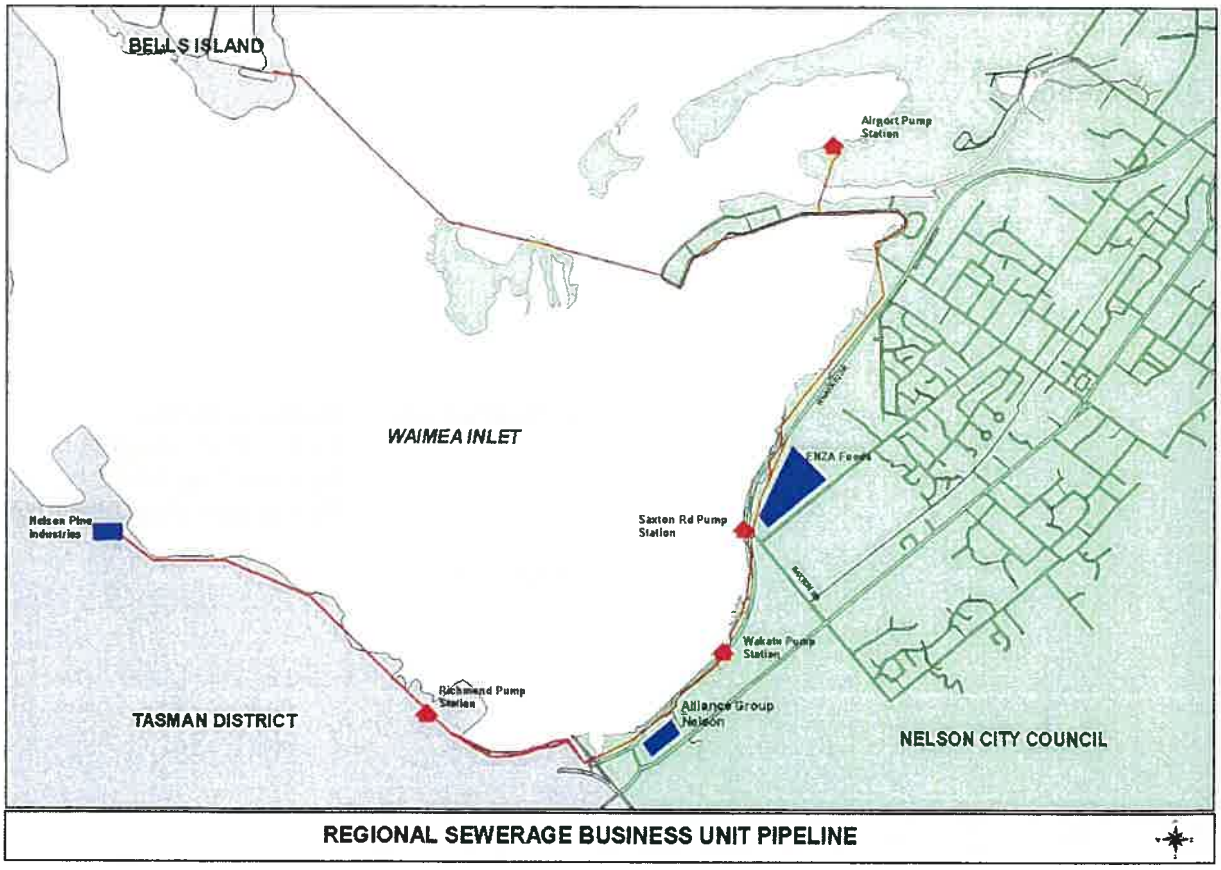


TABLE OF CONTENTS

Prepared by: ***Richard Kirby***
General Manager
Nelson Regional
Sewerage Business Unit

Adopted

1. Introduction

1.1 This Annual Report is a review of what has been achieved by the Nelson Regional Sewerage Business Unit (NRSBU) in the 2013/14 financial year and its level of performance against Key Performance Indicators.

2. The Year in Review

2.1 The NRSBU met its budget targets with a surplus of $1,631,550. Expenses are 4% less than budget.

2.2 All projects have been delivered within budget.

2.3 With few exceptions business plan targets have been met and resource consents complied with.

2.4 With the completion of several major upgrades over the last five years:

- Reducing the load on the activated sludge system by primary sludge removal through the installation of a primary clarifier,
- Improving the outfall system to optimise the capacity of the system,
- Increasing the reliability and capacity of the network through the installation of a second pipeline across the estuary, and
- Increasing pump capacity at pump stations,

all components of the system are now capable of managing loads and flows discharged to the scheme for the next five to ten years. These upgrades have also provided significantly more flexibility for dealing with the waste stream. The primary focus going forward is to improve the efficiency of services.

2.5 An Operations and Maintenance contract was let to NELMAC in October 2013.

2.6 The sludge survey carried out during 2013/14 confirmed that the sludge build up the facultative ponds has continued and it is forecast that the project to remove sludge from the ponds will be programmed for the period 2015-2017. A project to review the active management the ponds will be carried out during 2014/15.

3. Level of Service Performance

3.1 The levels of service recorded over the past three years have stayed reasonably consistent.

Level of Service	Function	Category	Target Technical Level of Service	Compliance		
				2011/12	2012/13	2013/14
Environmental Impacts	Treatment & Disposal	RMA Consent - Wastewater Discharge to Coastal Marine Area	100% compliance with consent conditions	No	No	No[1]
		RMA Consent – Discharge of Contaminants to Air	100% compliance with consent conditions	Yes	Yes	Yes
		RMA Consent - Discharge of Contaminants to Land	100% compliance with consent conditions	Yes	Yes	Yes
		Equipment Failure of critical components within the treatment and disposal system	No equipment failures that impact on compliance with resource consent conditions	Yes	Yes	Yes
	Pump Stations	Odour complaints from pump stations	No odour complaints originating from pump stations	Yes	Yes	No[2]
		Pump station wet weather overflows	No overflows for all pump stations	No 5 events	No 6 events	Yes
		Pump station overflows resulting from power failure	No overflow events occurring	Yes	Yes	Yes
		Pump station overflows resulting from mechanical failure	No overflow events occurring	No 1 event	Yes	Yes
	Pipelines	Reticulation Breaks	No reticulation breaks	No	Yes	Yes
		Air valve malfunctions	No air valve malfunction that result in wastewater overflows	Yes	Yes	Yes
Capacity	Treatment & Disposal	Overloading system capacity	Treatment and disposal up to all contracted loads and flow	Yes	Yes	Yes
	Pump Stations	Overloading system capacity	No overflow events occurring for the contracted contributor flows	Yes	Yes	Yes
Reliability	Treatment & Disposal	Equipment failure of critical components	No equipment failures that could lead to non-compliance with resource consent conditions	Yes	Yes	Yes
	Pump Stations			Yes	Yes	Yes
	Pipelines			Yes	Yes	Yes
Responsiveness	Treatment & Disposal	Speed of response for emergency and urgent maintenance works	Achievement of Response times specified in Maintenance Contract	Yes	Yes	Yes
	Pipelines	Speed of response for routine and programmable maintenance works	Achievement of Response times specified in Maintenance Contract	Yes	Yes	Yes
Key Contributor Relationships	Treatment & Disposal	Overall satisfaction	Agreed levels of service provided to all Contributors.	Yes	Yes	Yes
	Pump Stations		Robust charging structure is put in place	Yes	Yes	Yes
	Pipelines		Contributors are satisfied with Sewerage Scheme	Yes	Yes	Yes

Table 1: Level of Service Summary

Note [1]: One discharge occurred outside the permitted discharge period.

Note [2]: One odour compliant was received from a neighbour at the Septage Reception Facility and was to have come from air released from septage tanker using the facility.

3.2 No overflow were experienced during the year.

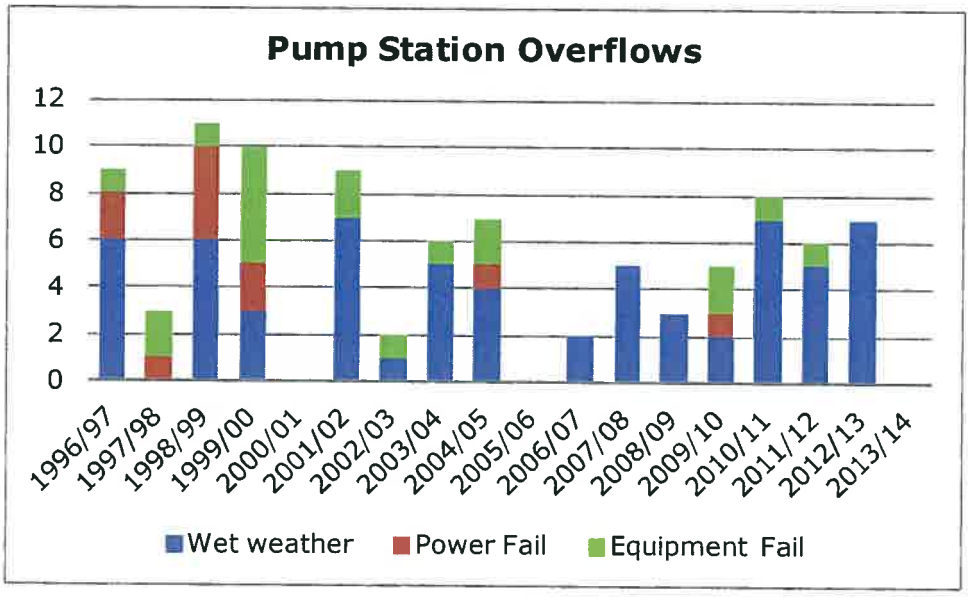


Figure 5: Pump Station Overflow Causes

3.3 It is anticipated that the capacity improvements completed as part of the regional pipeline upgrade project will significantly improve the ability to avoid overflows at pump stations during extreme weather events.

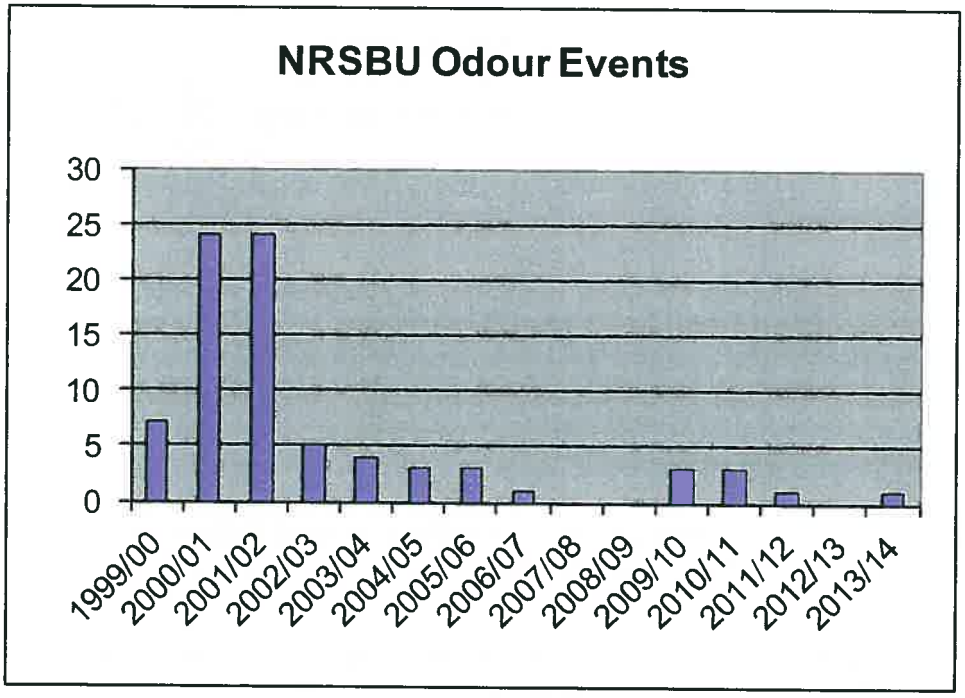


Figure 6: Odours

3.4 While a number of odour complaints were investigated one was found to be associated with NRSBU activities.

4. Customer Group

4.1 Four Customer group meetings were held during the year. Customers continue to see cost effective and efficient operation of the regional scheme as the most important task of the NRSBU and this is a high priority for the Board.

4.2 The survey also showed that most customers feel that the NRSBU is responsive to their needs. (The survey is marked out of 7)

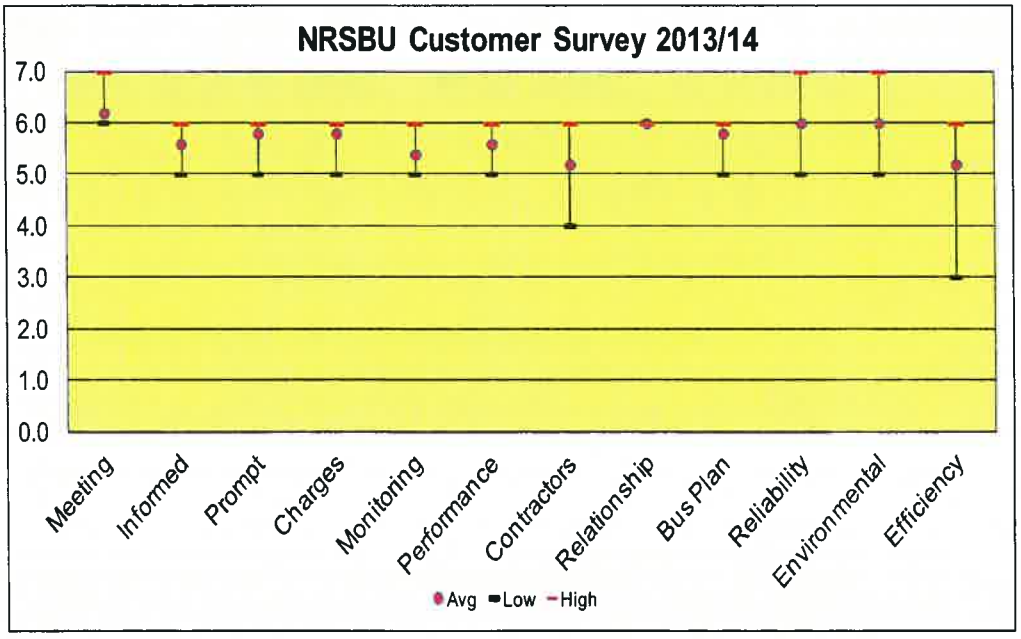


Figure 4.2: Customer Survey Results 2013/2014

5. Performance Measured Against Strategic Business Objectives

The strategic goals of the NRSBU set the basis for performance measurement and longer term strategies. Six Key Result Areas are identified and a set of Key Performance Indicators developed to measure the performance of the NRSBU. The following section reports the performance of the NRSBU towards achieving the 2013-14 performance objectives.

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

Objective	Key Performance Indicator	Performance
Sufficient reticulation, treatment and disposal capacity is available for loads received.	Loads do not exceed the capacity of system components.	The loads discharged to Bell Island are reported in appendix C and show that the plant continues to have adequate capacity.
Intergenerational equity is maintained.	Loans are repaid over 30 years (the average life of the assets).	Achieved. The distribution to shareholders, as measured over a three year

Objective	Key Performance Indicator	Performance
		period, does not breach this requirement.
Customers are encouraged to engage with the organisation and are satisfied with the service.	All customer representatives attend at least 75% of customer meetings. Customer surveys show an average score of at least 5 out of 7 on satisfaction with services.	Achieved. An average of 5.7 was achieved.
Levels of service are defined in all contracts and are met.	100% compliance with service level agreements by all major contractors.	Not achieved. Non-compliance was reported to the operation and maintenance contractor. Processes were put in place to rectify non-compliance.

5.2 The cost of wastewater reticulation, treatment and disposal services is minimised

Objective	Key Performance Indicator	Performance
The costs of reticulation, treatment and disposal processes are minimised.	Total reticulation, treatment and disposal costs per population equivalent are maintained at current levels or reduced when adjusted for CPI. All capital projects are delivered within budget.	Achieved. The operational cost for 2013/14 is $27.52/person equivalent compared to $29.55 per person equivalent the previous year. Capital projects delivered within budget. See section 6.
The economic lives of all assets are optimised.	A 3 yearly independent audit of asset management practices confirms this.	Assessment programmed for 2014/15.
Customers understand the benefits of demand management and the costs, risks and environmental implications of increasing demand.	Demand management policy is developed by December 2012. Customer contracts are reviewed by December 2012 to ensure that charging mechanisms support the demand management policy.	Implementation delayed until 2014 to allow new operation and maintenance contract to be embedded. This contract includes the development of capacity model and review of the treatment plant capacity.

Objective	Key Performance Indicator	Performance
Customers understand the benefits of demand management and the costs, risks and environmental implications of increasing demand.	Report on Nelson City Council (NCC) and Tasman District Council (TDC) progress towards implementing their load management policies and plans by June 2013.	NCC has continue their inflow and infiltration (I/I) programme and continues to develop this programme. For the 2013/14 financial year NCC has allocated $87,000 for stormwater inflow reduction and $41,000 for CCTV work targeting infiltration reduction. NCC is working towards using their wastewater model to develop a longer term I/I programme through the identification of high inflow and infiltration areas. TDC has a budget provision of an average $175,000 per annum for the next 20 years to investigate and reduce inflow and infiltration. Two of the commercial contributors have implemented further improvements to their on-site treatment systems during the last 12 months.
	Loads do not exceed the capacity of the components of the system.	All contributors have exceeded contracted loads on occasions. The monitoring of the combined effect of discharges continues to indicate that individual discharges by contributors do not seriously affect the ability of the NRSBU to treat the wastewater discharged.
Technology choices are well understood and are proven to be stable and cost effective.	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.	No process changes were considered during the year.

5.2.1 Three wastewater treatment plants were identified with similar flow and load characteristics to Bell Island to provide a high level benchmark.

Treatment Plant	Operation cost $	Daily average inflow m^3 /day	Average BOD load mg/l	Power kWh	Dry solids	Cost per m3	Cost per kg BOD	Cost per Population Equivalent
Bell Island 2013/14	2,721,115	15111	421	262402	822	$0.50	$1.18	$27.52
BI 2012/13	2,917,709	16749	377	314631	706	$0.48	$1.26	$29.55
TP2 2012/13	3,000,000	22000	350	350000	1488	$0.37	$1.07	$24.94
TP3 2012/13	3,180,000	17925	287	447912		$0.49	$1.69	$39.56
TP4 2012/13	3,226,900	23530	221	424390	1170	$0.38	$1.70	$39.72

Notes:

1. Source: WINFO Water New Zealand
2. Caveats
   - The reliability of the source information has not been verified
   - Treatment plant TP2 is under capacity and extensive upgrades will be carried out in near future
   - Population Equivalent is based on 64g BOD/day per person

5.3 Risks associated with the services provided are identified and mitigated to a level agreed with customers

Objective	Key Performance Indicator	Performance
Risk management plans include all significant environmental, cultural, social economic and contractual risks.	Zero unidentified events which impact the agreed levels of service occur.	Achieved. Risk management plans will be further reviewed as part of the 2015-18 asset management plan review.
Contingency plans adequately address emergency events.	Customer representatives review and approve the plans annually.	Achieved.
Customers engage with the risk assessment process, understand and accept the important risks and the level of mitigation provided.	Customer representatives review and approve the risk management plan and following any incidents which require activation of the plan.	Initiatives to gain a better understanding of these events by the owners of the NRSBU will be fed into the asset management plan as this information becomes available through "Lifelines" and owner organisations. The risk schedules will be work-shopped with contributors as part of AMP process.

5.4 NRSBU operates sustainably and endeavours to remedy or mitigate any identified adverse environmental impact.

Objective	Key Performance Indicator	Performance
Energy efficiency at the plant is increased.	An energy audit is conducted by December 2012.	An independent energy audit was completed in 2012 and the auditor reported that the site was found to fit into the top 1% of Energy Audits they have completed for operation efficiency. A decrease in kWh electricity use of 17% was achieved year on year.
	Targets are set for reductions in energy use by June 2013 and are reported on from that date.	The letting the of the operation and maintenance contract was delayed by three months resulting in a deferring the implementation of this project until March 2015.
Reuse of outputs from the scheme is regularly considered and implemented where there are benefits.	Current capacity to utilise beneficial application of biosolids to land is sustained.	100% of the biosolids treated at Bell Island are beneficially applied to Radiata pine plantations belonging to Tasman District and Nelson City Council.
	Beneficial reuse of treated waste water is maintained or increased.	The lessee continued to use the irrigation system on Bell Island.

5.5 Good relationships are maintained with all stakeholders.

Objective	Key Performance Indicator	Performance
Shareholders are satisfied with the strategic direction and the economic performance of the business unit.	All strategic and business plans are approved by shareholders.	The Business and Strategic Plans were approved by both owners.
	All budget projections are met.	Achieved.
Good relationships are maintained with all stakeholders including owners, iwi, customers, contractors, neighbours, and the wider community.	All complaints or objections are addressed promptly.	Achieved.
	All applications for resource consents are approved.	No applications were lodged during the year.
	Up to date information on activities and achievements is publicly available.	The NRSBU website is reviewed annually.

5.6 All statutory obligations are met.

Objective	Key Performance Indicator	Performance
All statutory obligations are identified and met and are included in contracts with suppliers.	Full statutory compliance requirements are identified by June 2013 and reporting mechanisms defined.	Achieved. Health and Safety requirements and compliance with other legislation are aligned with Nelson City Council work practices.
All resource consents requirements are met.	Compliance with resource consent conditions.	Not Achieved. One effluent discharge occurred outside the discharge permit period.

6. Capital Expenditure 2013/14

6.1 Renewals

Renewal Plan	Budget ($,000)	Actual 2012/13 ($,000)	Comments
Miscellaneous	20	0	
Pump Stations and Rising Mains	200	212	Replace storm pump at Airport Pump Station. (Pump age 21 years)
Inlet, Aeration Basin, Clarifier and Ponds	45	26	Replace spare aerator.
Solids Handling	399	376	Refurbishment of A and B-Train ATAD tanks.
		22	Replace biosolids transfer pumps.
		25	Replace secondary sludge transfer pumps.
Total	**661**	**661**	

6.1.1 Renewals are programmed based on expected life and condition assessments carried out as part of the annual valuation review. During the year that the renewal is programmed the asset condition is reviewed before the renewal is approved.

6.1.2 Following a condition assessment of the B-train sludge tanks it was decided to refurbish the tank walls. The work was completed at a cost of $142,000 and is expected to extend the life of the tanks by 10 years.

6.2 Upgrades

Upgrade Plan	Budget ($,000)	Actual 2013/14 ($,000)	Comments
New Rising Main and Pump Station upgrade, Richmond to Bells Island	145	27	Project completed.
Expand Biosolids Treatment	350	405	Replace roofs on A-Train ATAD tanks and extend raised catwalks.
Resource Consent for accidental discharges	100	2	Programmed for completion February 2015.
Total	**595**	**434**	

7. Scheme Capacity Trends

Treatment Plant

7.1 The increase in flow to Bells Island is consistent with the flow projections on which the most recent upgrades were based.

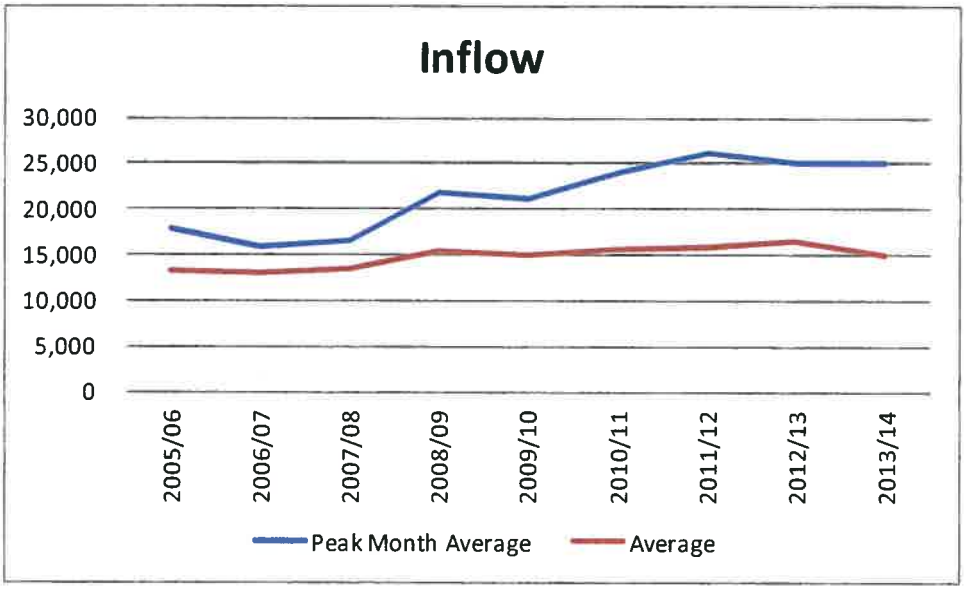


Figure 8: Shows the increased inflows into Bells Island

7.2 The total suspended solids discharging to Bells Island has shown a significant decrease since the disposal of trade waste agreements were put in place. It is considered that this decrease results from the improved on site wastewater treatment by the three industrial contributors leading up to and following the implementation of the customer contracts that were signed in 2007.

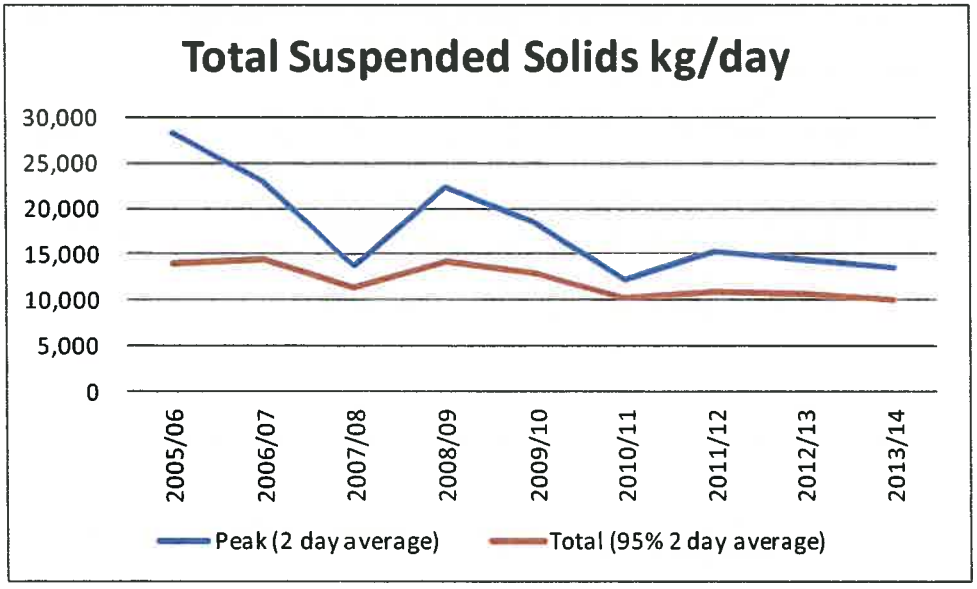


Figure 9: Decrease in suspended solids following the signing of the Disposal of Trade Waste Agreement

7.3 The biological oxygen demand in the inflow has decreased over the period since the trade waste agreements were effected.

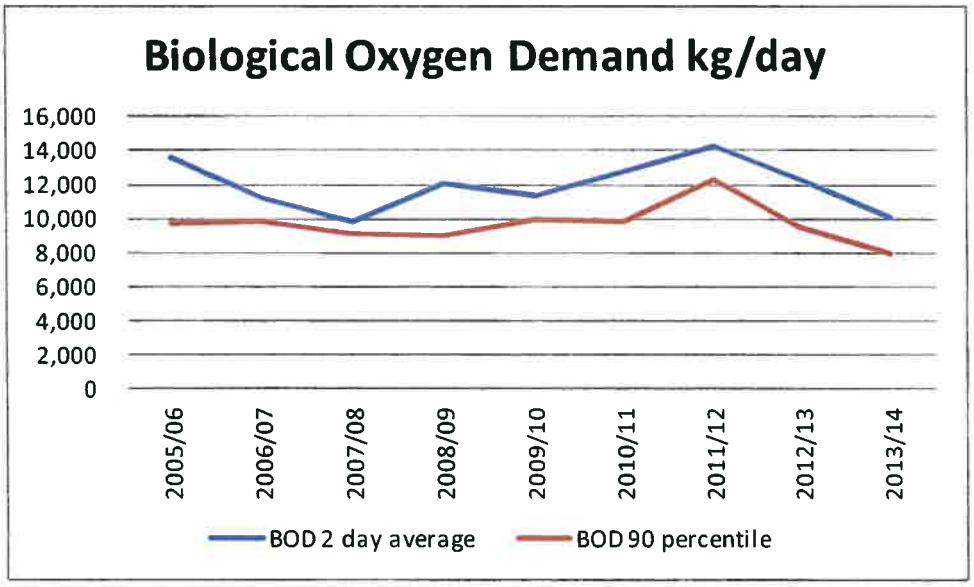


Figure 10: Biological oxygen demand

7.4 The chemical oxygen demand (figure 11) is trending lower. Future demand projections should be adjusted to these base levels as it is considered that the decrease in loads is related to the implementation of the disposal of trade waste agreements in 2007. These agreements provided an incentive for industrial customers to improve on site treatment of waste water.

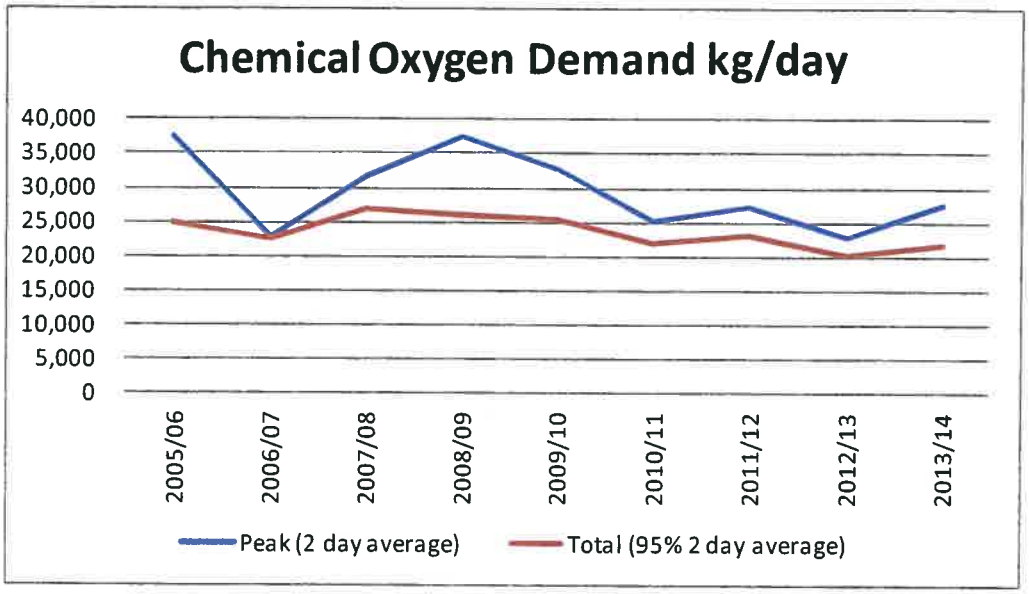


Figure 11: Shows the decrease of peak chemical oxygen demand since the implementation of the Disposal of Trade Waste Agreements in 2007

7.5 The Total Kjeldahl Nitrogen (TKN) and Total Phosphorous (TP) in the effluent discharged to Bell Island has decreased has over time and little change in the nutrient levels in discharges from Bell Island has been observed.

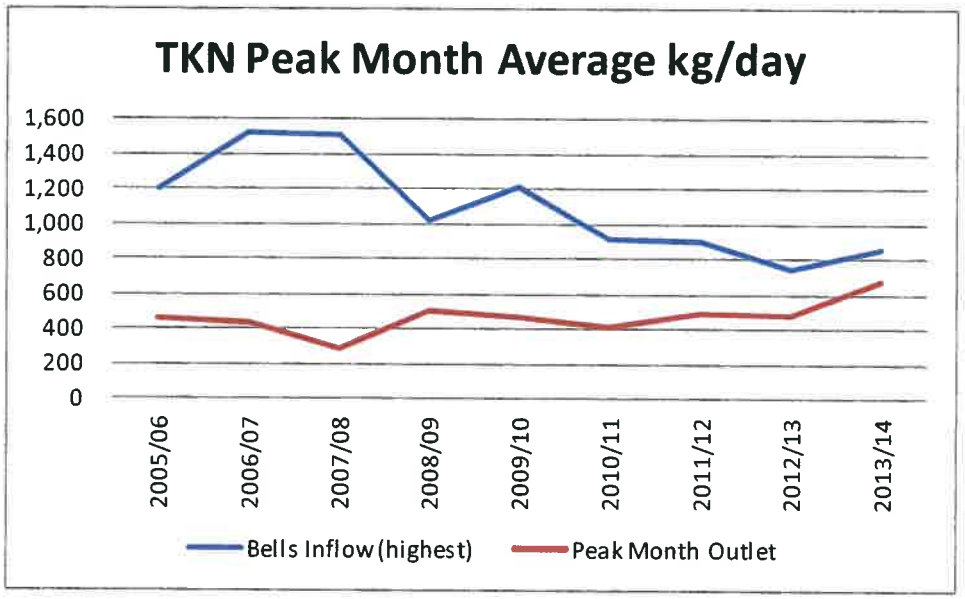


Figure 12: Shows a decrease in the nutrients received at Bell Island

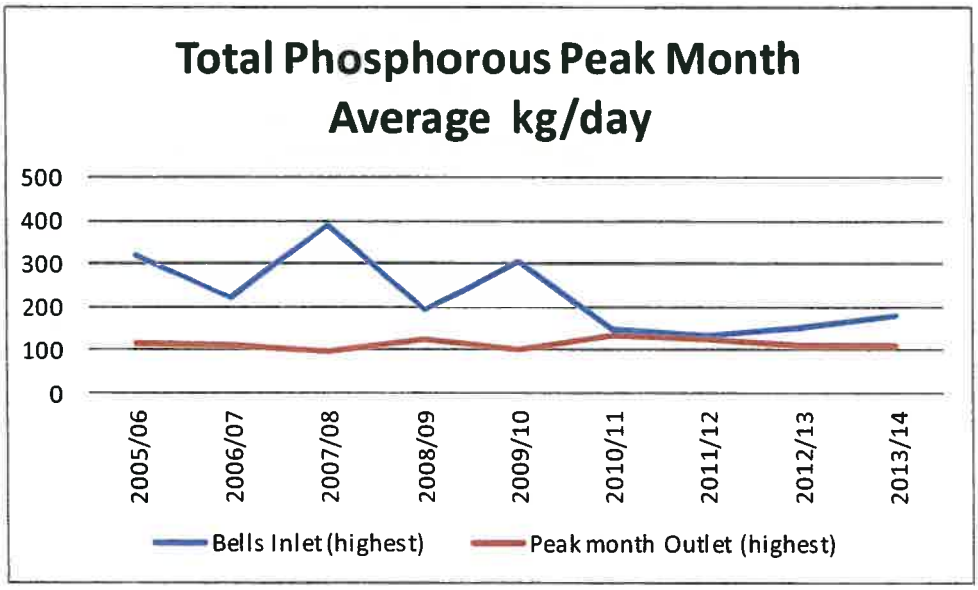


Figure 14: Shows a decrease in the nutrients received at Bell Island

7.6 With average total nitrogen and total phosphorous loads discharging from Bell Island at around 50% of the resource consent limits it is likely that the nutrient removal projects included in the asset management plan will be deferred when the plan is next reviewed.

7.7 The graph below shows that the application of nitrogen at Rabbit and Bell Island through biosolid application is well within the capacity of these areas to receive nitrogen.

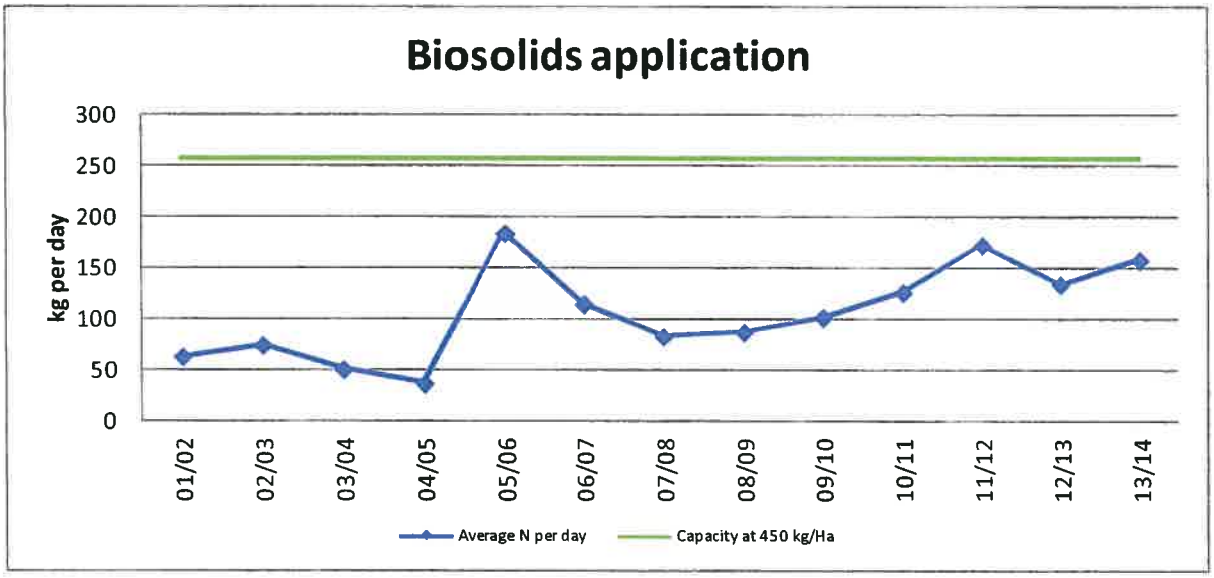


Figure 15: Average daily biosolids application

7.8 The diversion of solids away from the ponds since the completion of the primary clarifier upgrade is significant. This allows flexibility in the management of sludge treatment at Bells Island without compromising the ponds.

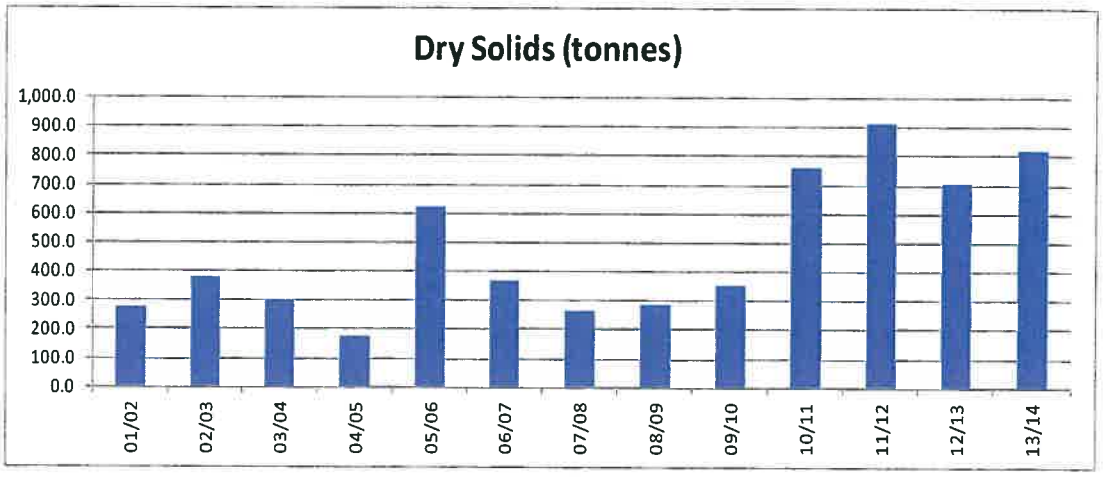


Figure 16: Dry solids diverted to pine plantations

Contributors

7.9 The trends for discharges from contributors to the NRSBU network shows continued growth in flows and loads. However, BOD, COD and SS loads received at Bell Island are decreasing.

7.10 This phenomenon is considered to result from biological activity occurring in the network through the interaction of organisms developed in the pre-treatment of wastewater at on-site treatment facilities and also the significantly increased aeration of wastewater that now occurs at pump stations and the combined effect of discharges from contributors.

7.11 Substantial volumes of storm water continue to enter Bell Island. NRSBU is working with the two Councils to improve long term strategies to reduce inflow and infiltration.

7.12 In summary, analysis of the scheme capacity trends confirms that there is adequate capacity within the system to treat wastewater discharged to Bell Island and that the decreases in nutrients discharged to Bell Island are significant enough to indicate that a review of the current strategies for additional nutrient removal is required.

8. Financial Performance

8.1 Explanations for major variations from the NRSBU's 2013/14 Business Plan are as follows:

Statement of Comprehensive Income

8.2 Total Expenses are $272,000 less than budget.

8.3 The net surplus is $262,000 more than budget largely due to the revaluation of derivative instruments.

8.4 The 30 June 2013 fixed asset revaluation is $1,223,000 more than the opening value.

Statement of Financial Position

8.5 The revaluation reserve has increased by $4,053,000 to $21,365,235 compared to budget principally due to the movement in valuation indices in both 2013 and 2014.

8.6 Borrowings are $2,529,000 less than budget due to savings in capital expenditure.

Signed:_____ Date:____/____/____

Michael Higgins
Chair
NRSBU

Appendix A Discharge Consent Compliance

Regional Sewerage Scheme - Coastal Permit RCAC 0431
Bells Island - Effluent Test Results (Current)

Month	Average Daily Inflow	Average Daily Discharge			BOD5	CBOD5	Suspended Solids	Total Nitrogen	Total Phosphorous	Feacal Coliforms	Enterococci
	m3/day	hrs/day	m3/day	Meter Diff (%)	g/m3	g/m3	g/m3	kg/day	kg/day	MPN/100ml	MPN/100 ml
Limit	20,000		20,000	5.00	50		150	600	150	100,000	
Jul 13	13,716	4.1	13,579		29	31	41	217	30	3.90E+04	3.70E+03
					30	31	52	204	29	7.30E+04	1.00E+04
					38	40	50	231	45	8.60E+04	8.60E+03
					31	30	56	258	37	2.00E+04	9.40E+02
					15	19	45	231	34	8.10E+02	4.00E+01
Aug 13	15,792	4.0	12,908		33	32	54	142	41	2.10E+03	2.20E+02
Sep 13	15,132	4.9	13,507		29	31	84	297	57	3.00E+03	7.40E+01
Oct 13	15,553	5.2	14,844		47	45	95	416	86	4.00E+03	1.80E+01
Nov 13	12,982	3.2	8,627		32	31	76	259	49	4.10E+02	9.00E+00
Dec 13	12,239	3.2	8,248		16	16	38	247	59	3.60E+01	9.00E+00
Jan 14	13,766	4.0	9,430	3	21	22	73	349	79	2.50E+03	6.30E+02
Feb 14	10,898	3.7	8,823		35	29	140	159	78	3.00E+02	9.90E+01
Mar 14	13,795	3.4	8,783		32	33	140	88	47	2.50E+03	1.60E+02
Apr 14	19,309	5.2	16,371		45	45	91	327	121	8.30E+04	5.40E+01
May 14	15,001	5.0	13,856		27	30	37	679	62	5.60E+03	9.90E+01
Jun 14	18,297	5.4	15,950		20	21	17	367	62	6.90E+04	4.80E+01
	14,707		12,077	3.00%	31	31	55	253	53	3.50E+03	9.90E+01

Test	Results	Limits	Comments
Median Faecal Coliform Count	3.50E+03 /100ml	**<20,000 /100ml**	O.K
No of samples over 100,000/100ml	0	**<6.25%**	O.K
Median BOD5	31 g/m3	**<40 g/m3**	O.K
No of samples over 50 g/m3	0	**<6.25%**	O.K
Median Suspended Solids	55 g/m3	**<100 g/m3**	O.K
No of samples over 150 g/m3	0	**<6.25%**	O.K
1 April - 31 July			
Median Total Nitrogen	245 kg/day	**<500 kg**	O.K
No of samples over 600 kg	1	**<12.5%**	O.K
1 Aug - 31 March			
Maximum Total Nitrogen	416 kg/day	**<600 kg**	O.K
No of samples over 500 kg	0	**<12.5%**	O.K
Maxiumum Total Phosphorous	121 kg/day	**<180 kg**	O.K
No of samples over 150 kg	0	**<6.25%**	O.K
Mean Daily Flow	12,077 m3	**<20,000**	O.K

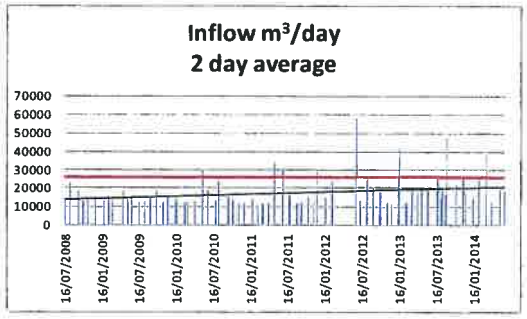
Appendix B Contributor Heavy Metal Results

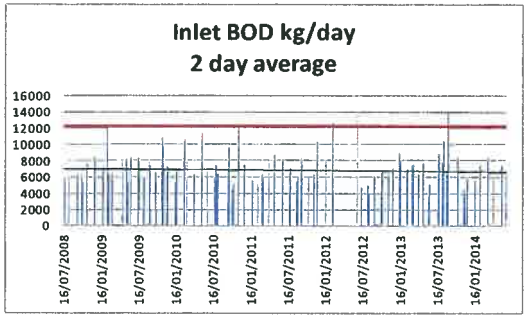
2013-14

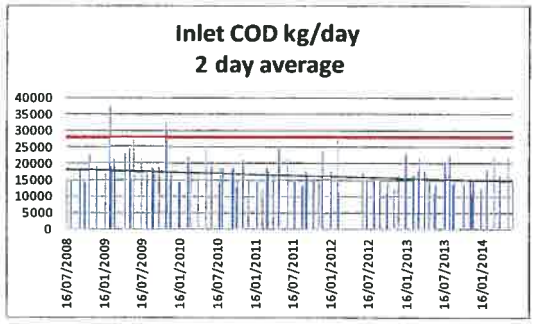
Heavy Metals & Other Substances	Alliance 28/11/2013	ENZA 28/11/2013	Saxtons 28/11/2013	Richmond 28/11/2013	Airport 28/11/2013	Mapua 28/11/2013	NPI 28/11/2013	Wakatu 28/11/2013	Songer 28/11/2013	Trade Waste Bylaw Limit
Cadmium	0.00039	<0.0011	0.00015	0.000096	0.00043	0.0001	0.00053	0.00027	0.000055	0.5
Copper	0.14	0.051	0.045	0.056	0.041	0.16	0.063	0.12	0.021	5
Nickel	0.0098	<0.011	0.0038	0.0037	0.0083	0.0055	0.019	0.0083	0.0021	5
Zinc	0.61	0.07	0.13	0.078	0.15	0.14	0.29	0.22	0.045	5
Chromium	0.016	0.012	0.0035	0.0043	0.022	0.0019	0.017	0.008	0.007	5
Lead	0.011	0.0057	0.002	0.002	0.0051	0.0031	0.0023	0.013	0.0013	5
Boron		0.13								25
Arsenic	0.0062	<0.021	0.00099	0.0013	0.0083	0.0021	0.0049	0.0022	0.00083	1
Fluoride		<0.05	<0.02	0.059	0.046	0.057	0.42	0.056	0.069	5
Sulphide	1.7	0.042	5.4	0.3	3.8	0.5	<0.1	0.2	0.1	1
Sulphates(SO4)	8.5	6.5	17	32	15	23	12	36	21	200
Phenols	<0.2	0.080	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	50
Oil and Grease	120	17	31	54	49	44	490	51	13	
Mercury	0.000054	<0.0021	<0.00005	0.00013	0.00012	0.000081	0.00018	0.000091	<0.00005	0.05
pH	7.4	7	6.2	7.1	6.9	7.7	4.9	7.4	7.2	
Pesticides										
Cyanide	0.250	0.001	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	5

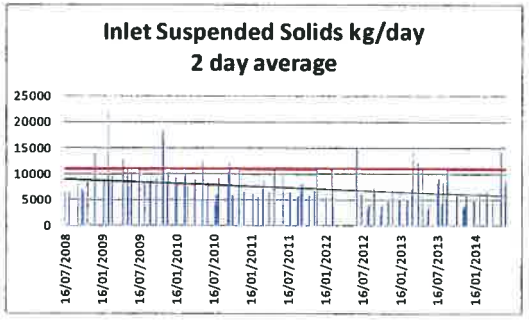
Appendix C

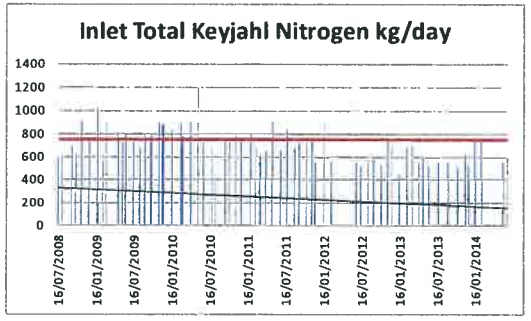
Discharge to Bells Island

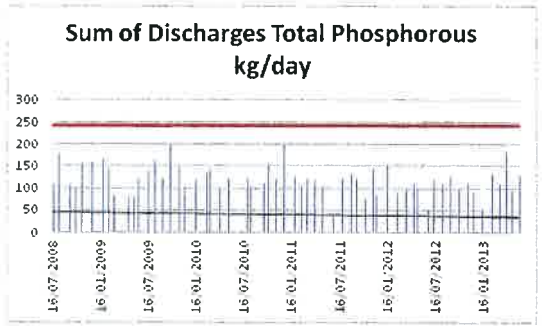




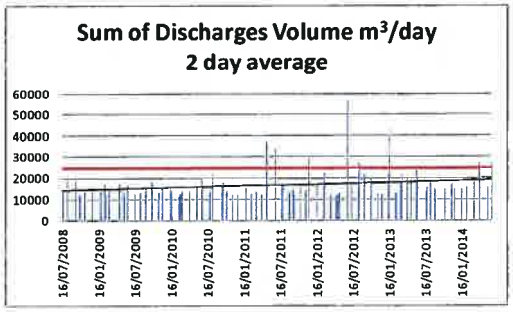


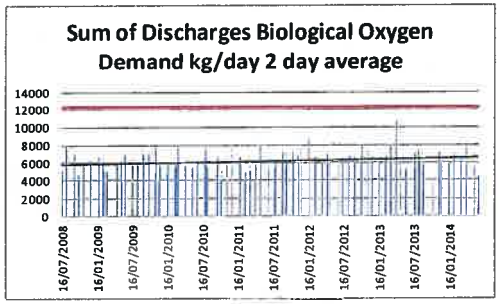


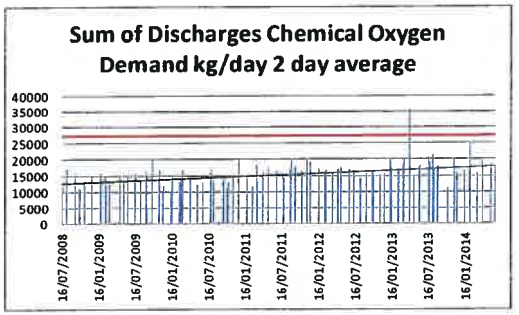


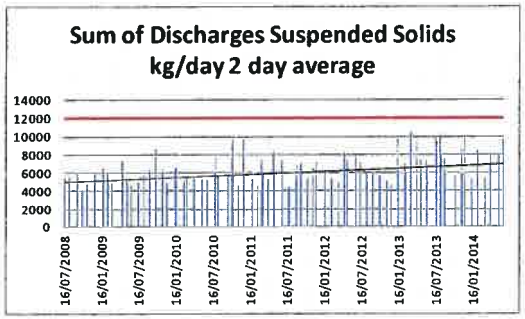


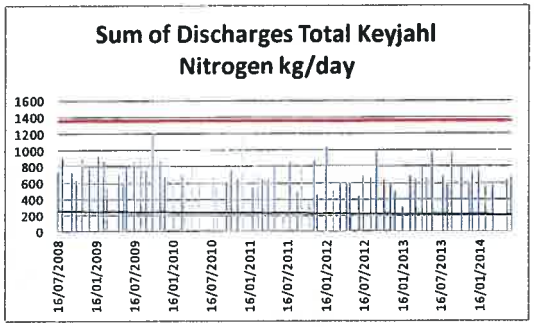
Sum of Discharges to NRSBU Network

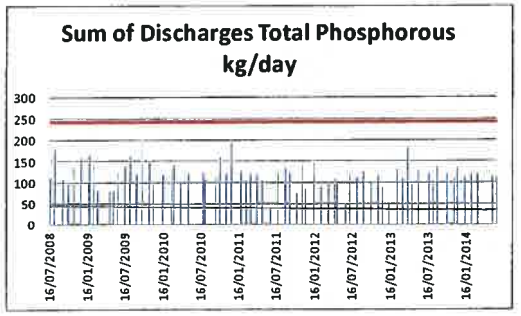




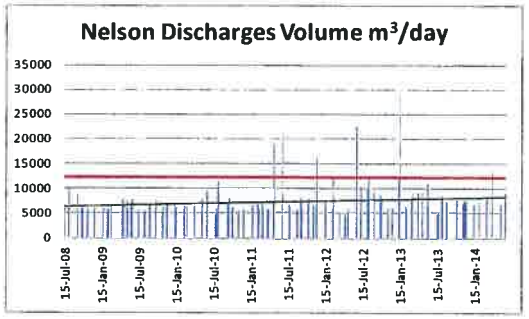


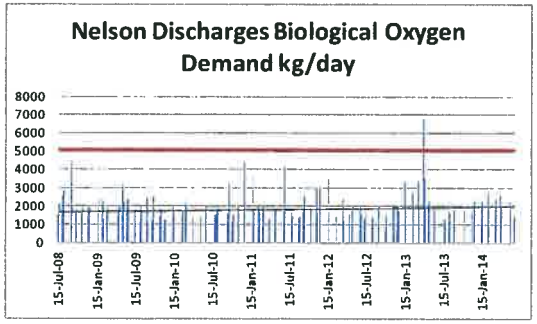


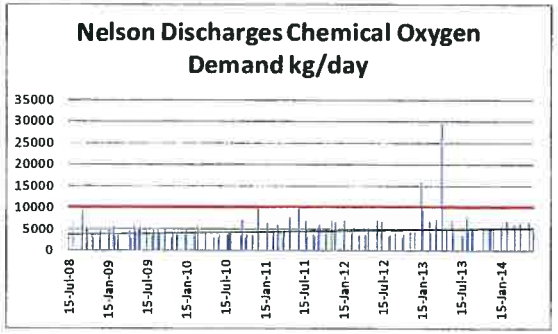


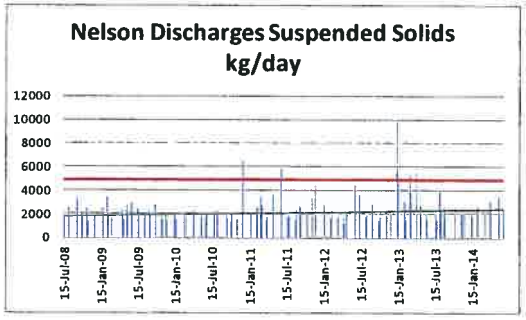


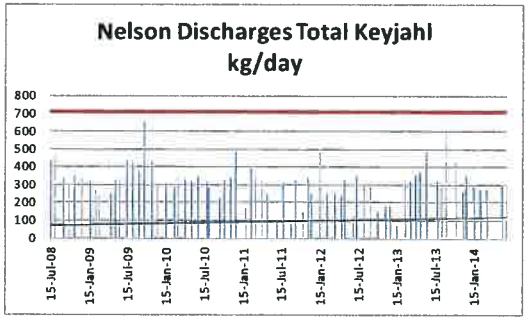
Sum of Nelson City Council Discharges to NRSBU Network

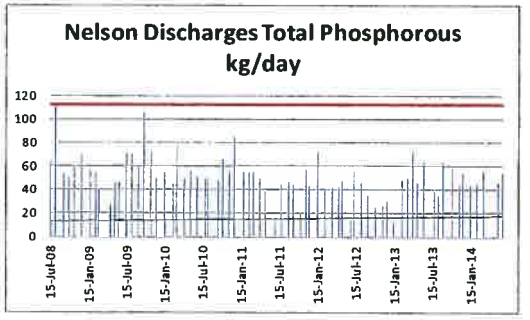




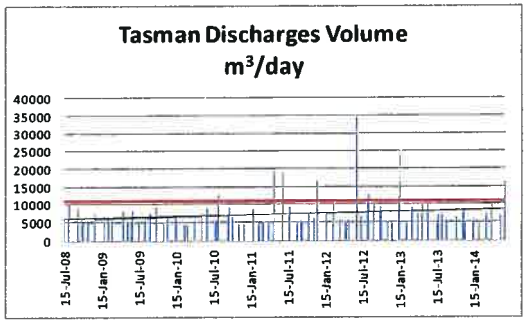


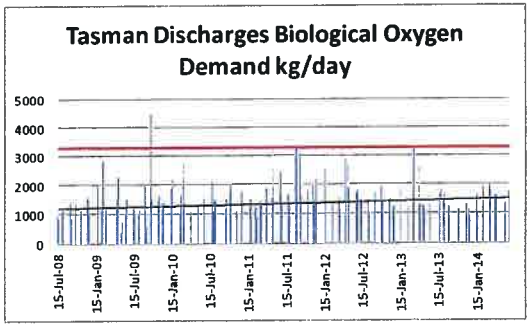


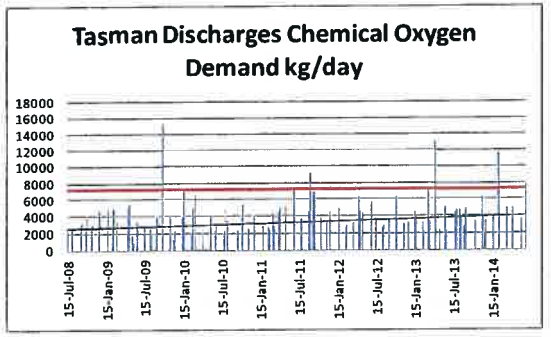


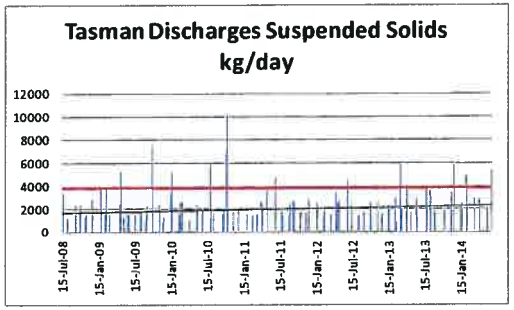


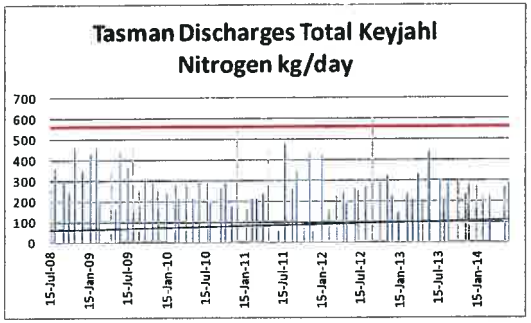
Sum of Tasman District Council Discharges to NRSBU Network

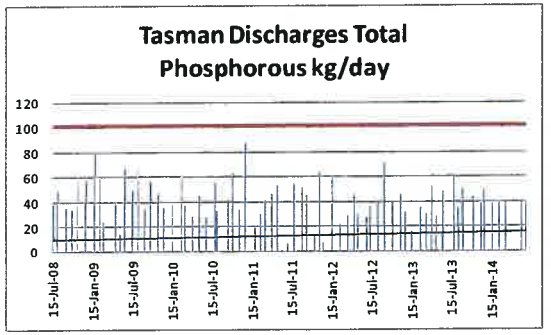




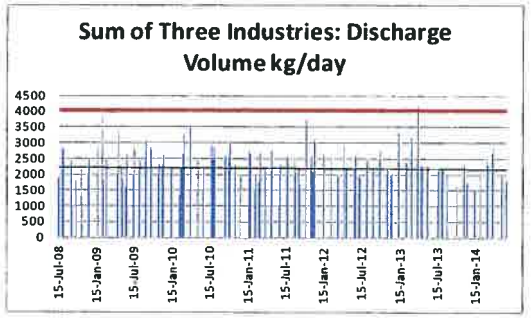


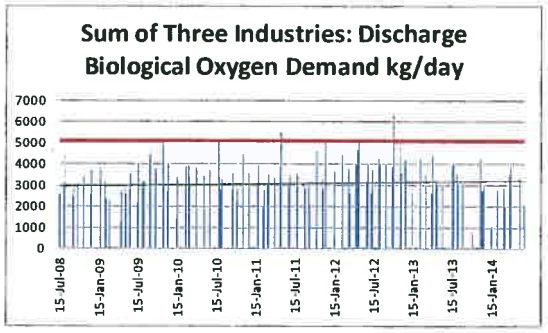


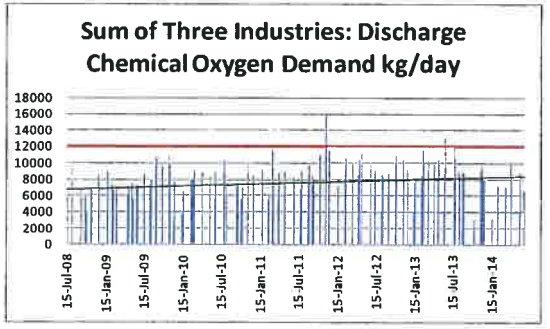


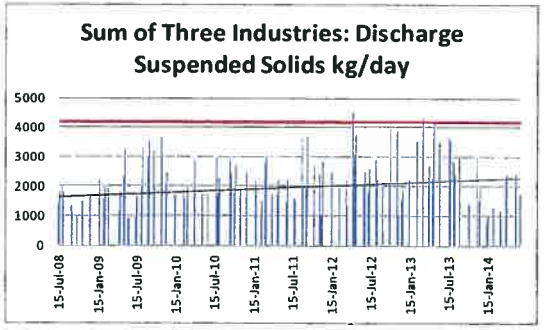


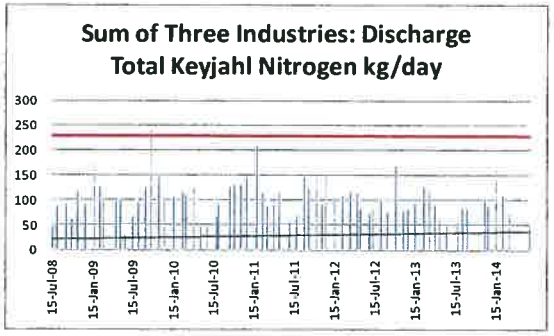
Sum of the Three Industries

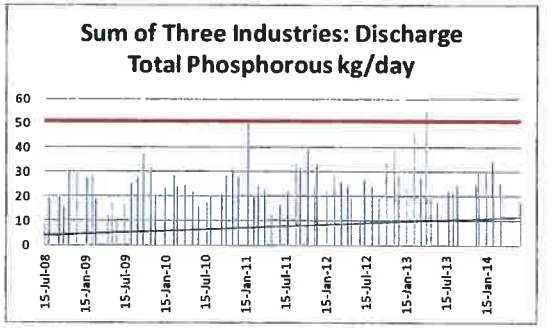






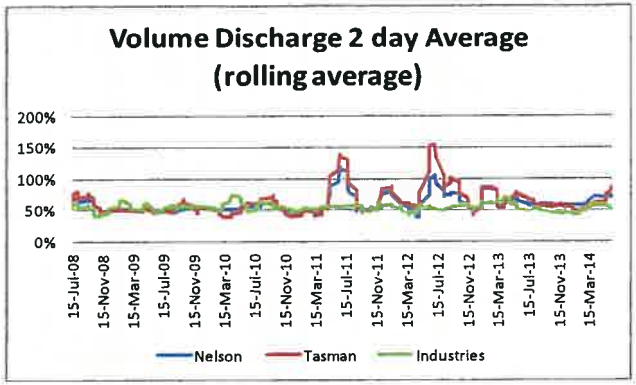


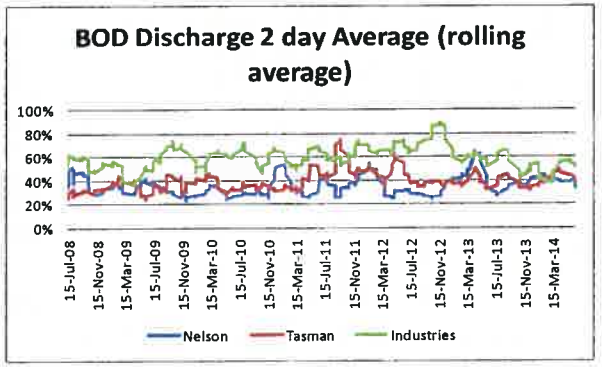


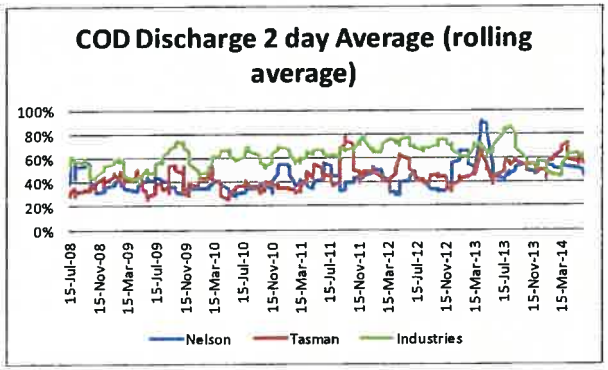


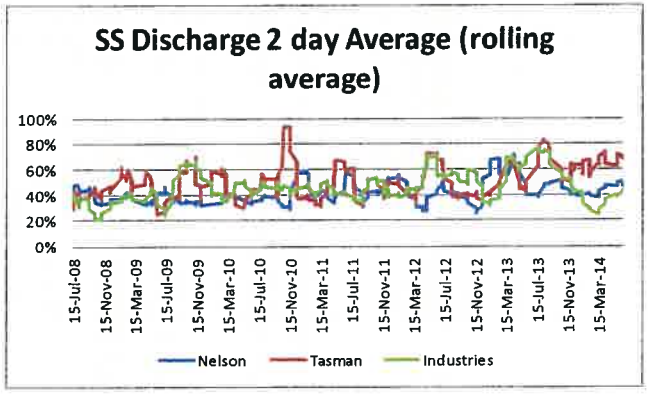
The sum of the three industries demonstrates that agreed limits were occasionally exceeded.

60 Day Rolling Average of Discharges to NRSBU Network as % of Contracted Quotas



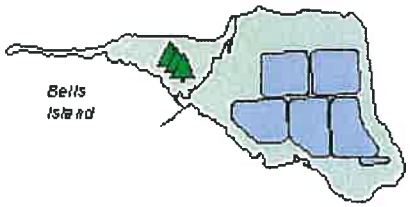






The three groups are well under the agreed allocations.

NRSBU LONG TERM PLAN 2014



1. Purpose of Report

1.1. To consider the proposed changes to the LTP.

2. Recommendation

<u>THAT</u> NRSBU officers continue to develop the Long Term Plan based on the plan reported.

3. Background

3.1. The NRSBU conducted a strategic planning session on 25 June 2014. Notes of the meeting are appended.

4. Growth and Demand

4.1. TDC indicated that the current TDC quotas are sufficient and that current flow projections are considered adequate for future planning. TDC supports the demand review reflected in the draft AMP.

Table 3.3.3: TDC Wastewater Profile (12 month rolling average)

2013/14	Flow m^3/day	Peak Flow l/s	BOD kg/day	COD kg/day	SS kg/day	TKN kg/day	TP kg/day
Actual	7,814	297	1,375	4,203	2,590	295	47
Maximum last 12 months	14,164	521	1677	7,682	3,755	487	80
Limit	11,141	820	3,346	7,355	3,682	580	102
Variation Actual/Limit	30%	64%	59%	43%	29%	49%	54%
Variation Maximum/Limit	-27%	36%	50%	-4%	-3%	16%	22%
Population Equivalent			22,900 to 27,958				

4.2. Table 3.3.3 above indicates that the Tasman District Council is well positioned for future growth within the district. However, it also indicates that stormwater inflow is a significant issue that needs consideration. Improved management of storm water inflows into the Tasman and Nelson networks will delay future upgrade work significantly. TDC plan to implement and improve on the following demand management initiatives:

4.2.1. TDC will focus on installing pumped systems for internal property services to limit inflow and infiltration in future development areas.

4.2.2. TDC plans to place more emphasis on trade waste controls to identify and target significant polluters.

4.2.3. TDC is in the process of reviewing Tasman Tradewaste Bylaw.

4.2.4. TDC is continuing to focus renewals based on asset condition and age.

4.2.5. All new properties are developed with boundary inspections that can be accessed to inspect private property flows during rain events.

4.3. NCC expressed confidence in the NRSBU load forecast and indicated that these should be used for future planning. NCC supports the demand review reflected in the draft AMP.

Table 3.3.2: NCC Wastewater Profile (12 month rolling average)

2013/14	Flow m^3/ day	Peak Flow l/s	BOD kg/ day	COD kg/ day	SS kg/ day	TKN kg/ day	TP kg/ day
Actual	7,800	515	2,161	5,759	2,360	357	55
Maximum last 12 months	8,066	575	2,187	5,978	2,646	357	55
Limit	10,141	605	4,036	8,080	3,950	590	90
Variation Actual/Limit	23%	15%	46%	29%	40%	39%	39%
Variation Maximum/Limit	-3%	-12%	-1%	-4%	-12%	0%	1%
Population Equivalent			36,000 to 36,450				

Population equivalent based on 60g BOD/person/day

4.4. There is adequate capacity within the NCC quota to accommodate moderate growth. It is anticipated that Nelson can create additional capacity by continuing renewal programmes and improvements in infiltration and inflow management.

4.5. NCC plan to implement the following management strategies that will affect demand at Bell Island:

4.5.1. NCC is planning to ban the use of domestic insinkerators in their new Bylaw that will go to public consultation soon.

4.5.2. NCC plan to place more emphasis on trade waste controls in order to charge significant polluters appropriately.

4.5.3. NCC continues to improve asset condition assessments in order to target renewals in areas where asset condition warrants renewals.

4.5.4. NCC is placing more emphasis on Inflow and Infiltration (I/I) control and are preparing an I/I strategic plan for adoption by Nelson City Council.

4.5.5. All new properties are developed with boundary inspections that can be accessed to inspect private property flows during rain events.

4.6. The following presents the combined industrial contributor flows and loads.

Table 3.3.7: Industrial Contributors Wastewater Profile (12 month rolling average) Industrial "Club"

2013/14	Average Flow m^3/day	Peak Flow l/s	BOD kg/day	COD kg/day	SS kg/day	TKN kg/day	TP kg/day
Actual	1,750	67	3,006	8,247	2,203	90	28
Maximum last 12 months	1,873	73	3,607	8,668	2,457	101	31
Limit/Design	4,040	88	5,100	11,987	4,200	230	51
Variation Actual/Limit	57%	24%	41%	31%	48%	61%	45%
Variation Maximum/Limit	54%	17%	29%	28%	41%	56%	540%
Population Equivalent			50,106 to 60,100				

4.6.1. When the industrial contributors discharges are considered as one block it becomes clear that their collective quota exceeds their combined current demand by a considerable margin. The industries therefore have considerable capacity for growth. The industry representatives have also indicated that when growth takes place that they are likely to improve pre-treatment and they do not consider that they require additional quota allocations from the NRSBU. The industries are more likely to reconsider their load allocations with a view to adjusting their loads downward as savings can be made by the industrial contributors.

4.6.2. The fact that two of the industrial contributors have recently invested in further improvements at their on-site treatment facilities to improve the quality of the effluent discharges to the NRSBU network indicate that the Disposal of Tradewaste Agreements continue to provide incentives to industrial contributors to improve the quality of their effluent.

4.6.3. Following the desludging of the Nelson North ponds it is anticipated that the primary solids received from this treatment plant for treatment at Bell Island will decrease significantly as NCC revert back to using the oxidation pond optimally. This will have the effect of decreasing the sludge processed in the ATADs by between 10% and 15%.

4.7. Conclusion: While all parties agreed to use the existing flow projections. There was also consensus that these projections do not reflect demand management strategies implemented by Councils.

Contributor	Individual Contributor Flow Projections (l/s)				
	AMP Design Flow	Assessed Present Peak Flow	Projected Flows to 2025	Projected Flows to 2035	Projected Flows to 2085
Nelson Pine Industries (NPI)	23	23	23	23	23
TDC (Beach Road PS)	680	389	475	525	725
Alliance Group	35	35	35	35	35
NCC Wakatu	84	5	58	64	84
NCC Stoke (Saxton Road PS)	65	58	84	93	113
ENZAfoods	30	30	30	30	30
NCC Songer (Songer Street PS)	458	143	254	273	285
NCC Airport (Airport PS)		304	291	306	316
Contributor Total	1375	987	1251	1349	1610

Flow projections used in 2009 Design Flow Projections (A354183)

Conclusion: The successful implementation of the demand management strategies of the two council contributors will effectively result in a decrease in demand implying that there will be adequate capacity at Bell Island to treat sewage discharged to the treatment plant.

5. Treatment Plant Capacity Assumptions

5.1. The 2006 Bell Island Wastewater Treatment Plant Capacity Testing Report reported the constraints of the Treatment Plant.

5.2. The 2008-2010 Wastewater Treatment Plant Upgrade addressed many of the issues and resulted in the 2011 Bell Island Wastewater Treatment Plant Treatment Capacity and Commissioning report.

5.3. The upgrade plan for the future is based on the findings of these two reports, the Pipeline Strategy report and further in-house capacity analysis of components of the treatment plant.

Capacity	Average flow m^3/day	Peak flow l/s	BOD kg/day	COD kg/day	SS kg/day	TKN kg/day	TP kg/day
Estimated Capacity	25,920	1,508	12,226	28,000	11,000	750	230

Figure 5.3: Treatment Plant Capacity

5.4. A wastewater treatment plant process model is being developed as part of the O&M contract and will be used to inform the future development of the wastewater treatment plant. While the completion of the model will not inform the 2014 Long Term Plan deliberations it will be used to calibrate capital and operational programmes in future.

6. NRSBU Wastewater Treatment Plant Constraints

6.1. Analyses of loads and flows discharged to and from the treatment plant suggest that the plant performs well under current loads.

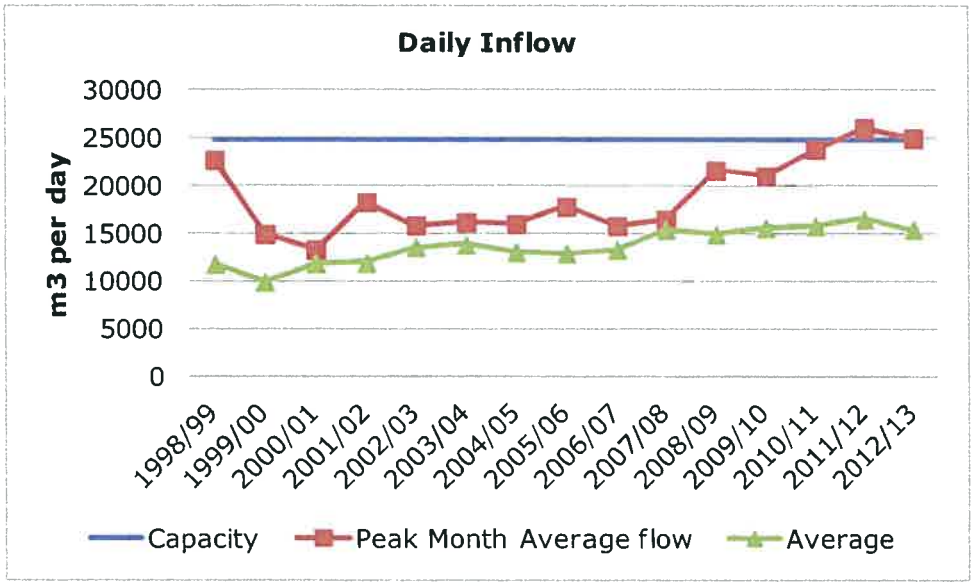


Figure 6.1: Daily flows

- Average inflow into the plant is less than 62% of the daily average discharge consent limit.
- Peak month average flow is less than the maximum daily discharge consent limit. (14% average volume loss through the treatment plant process – mainly resulting from evaporation)
- After the Outfall Capacity Upgrade the outlet has a demonstrated capacity exceeding the daily maximum discharge consent limit.
- Maintaining a buffer capacity in the ponds is therefore dependant on sound management of the buffer capacity in the ponds.

6.2. A combination of Peak Month 2 day averages, 90 percentile values and averages have traditionally been used to determine the capacity of the treatment plant to process incoming loads. It is essential to link the changes in inflows with changes in discharges from the treatment plant.

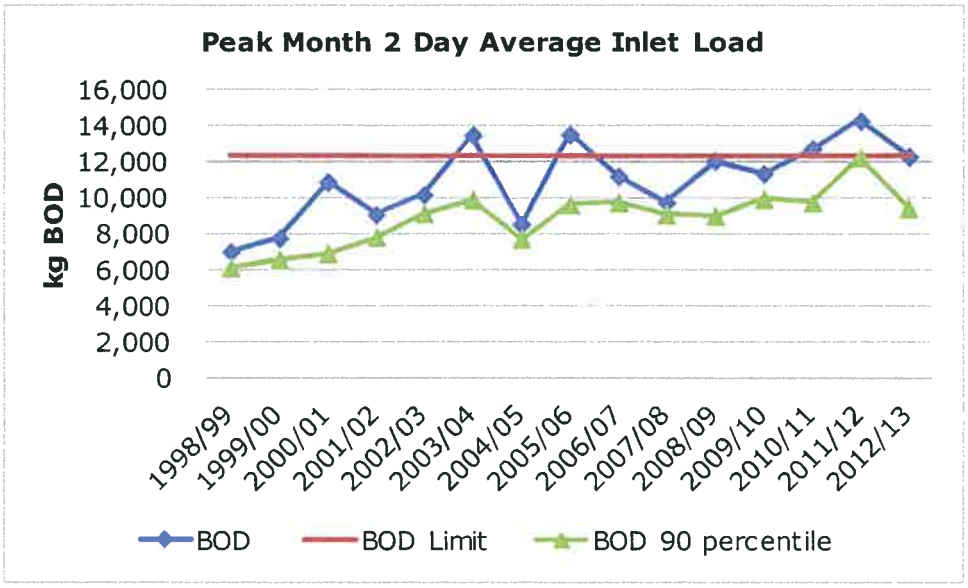


Figure 6.2: Peak month inlet loads BOD

- The peak month two day average inlet BOD load exceeds "capacity" of the plant.
- The 90 percentile BOD load is 76% of the "capacity" of the plant.

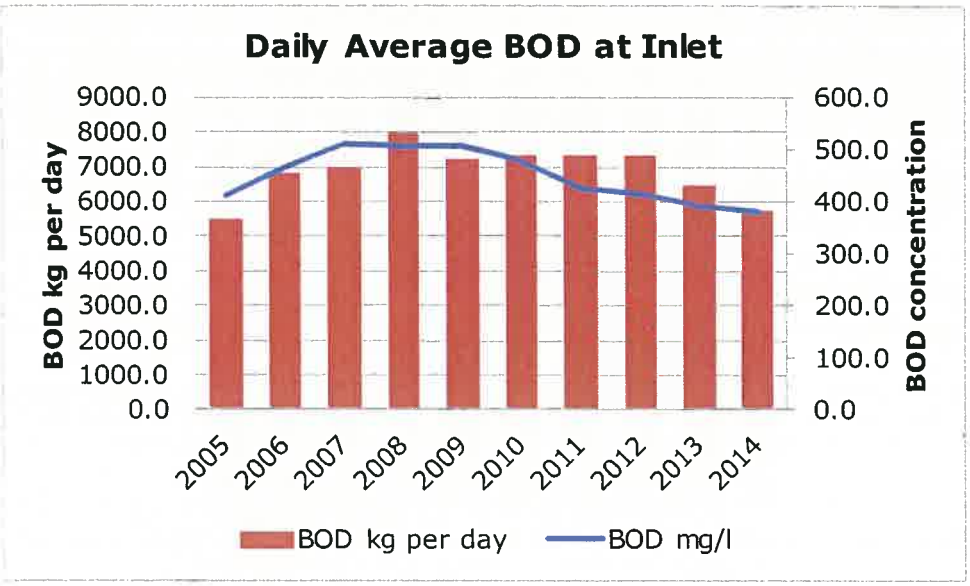


Figure 6.3: Daily Average BOD

- The declining daily average BOD load at the inlet demonstrates that the plant capacity to treat BOD is adequate.

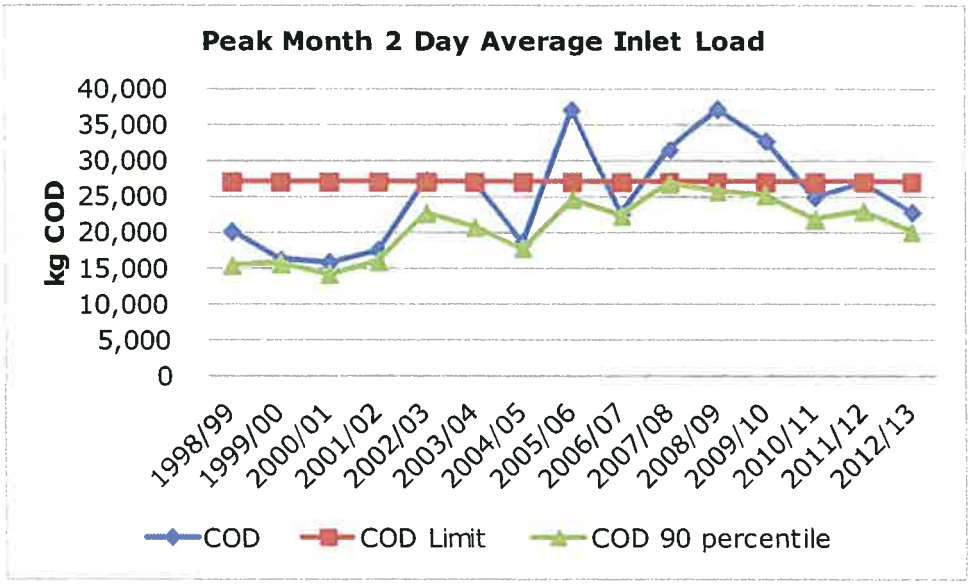


Figure 6.4: Peak month inlet load COD

- The peak month 2 day average inlet load equals the "capacity" of the plant.
- The 90 percentile COD load is at 74% of "capacity" of the plant.

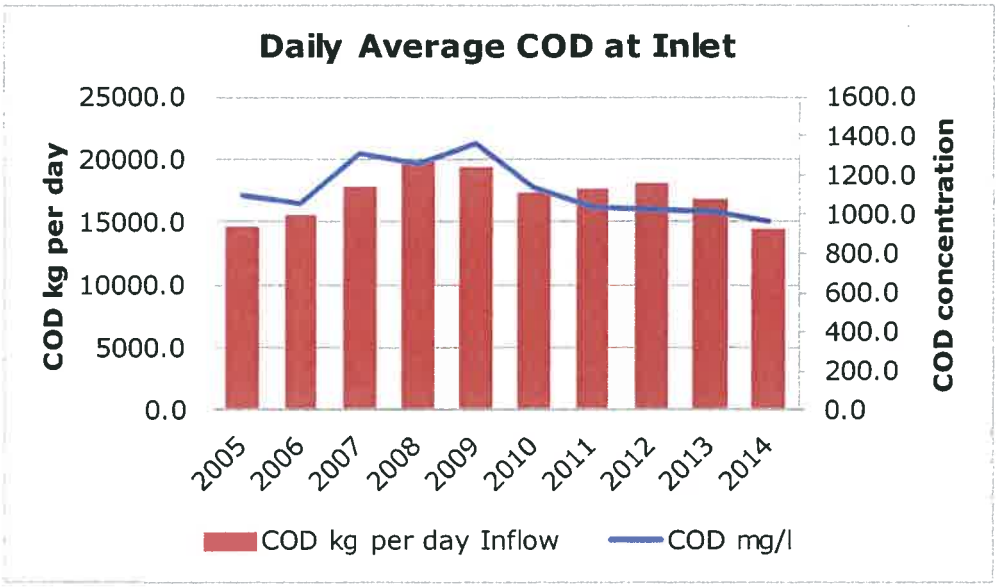


Figure 6.5: Daily Average COD

- The declining daily average COD load at the inlet demonstrates that the plant capacity to treat COD is adequate.

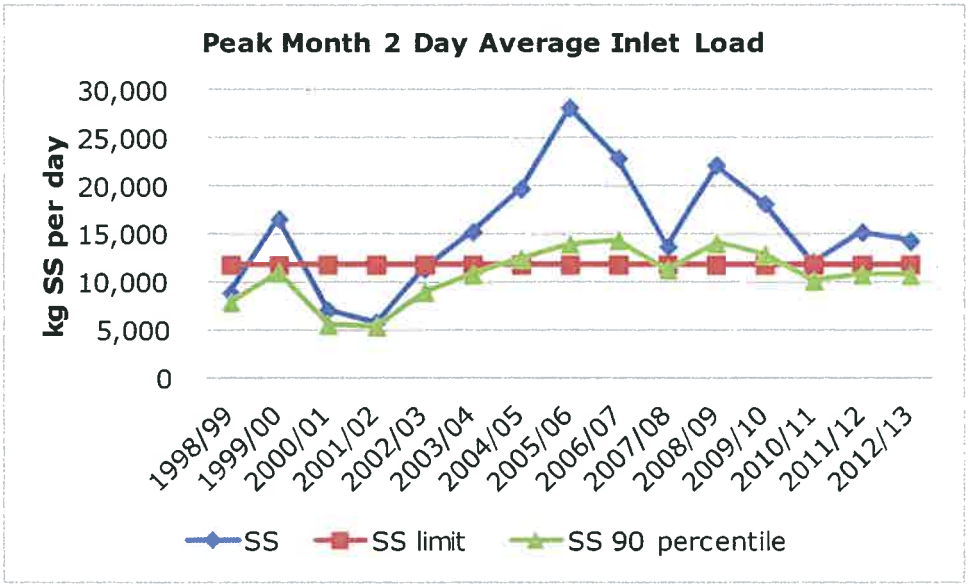


Figure 6.6: Peak month inlet loads SS

- The peak month 2 day average inlet load exceeds the "capacity" of the plant.
- 90 percentile SS load is at 90% of the plant "capacity".

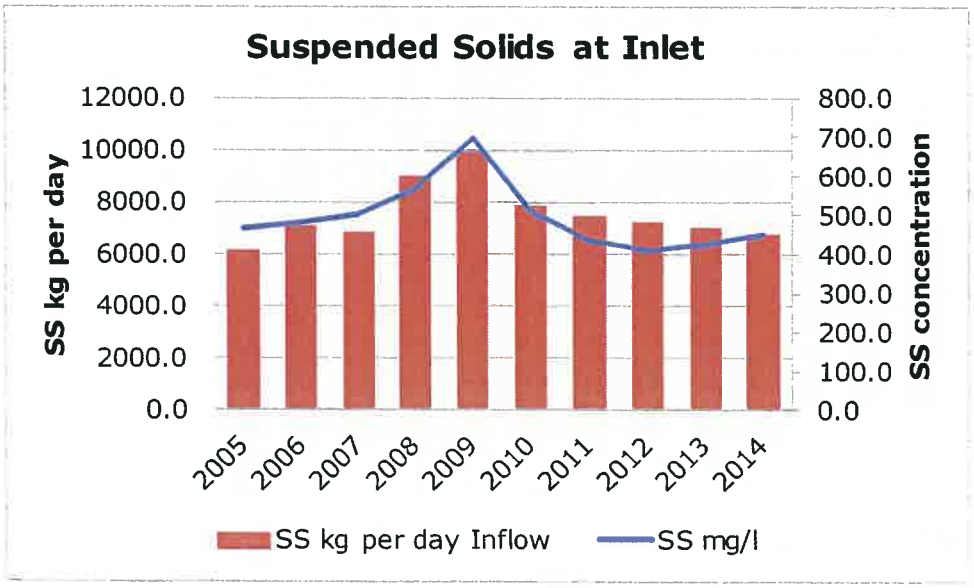


Figure 6.7: Daily Average SS

- The declining daily average SS load at the inlet demonstrates that the plant capacity to treat SS is adequate.

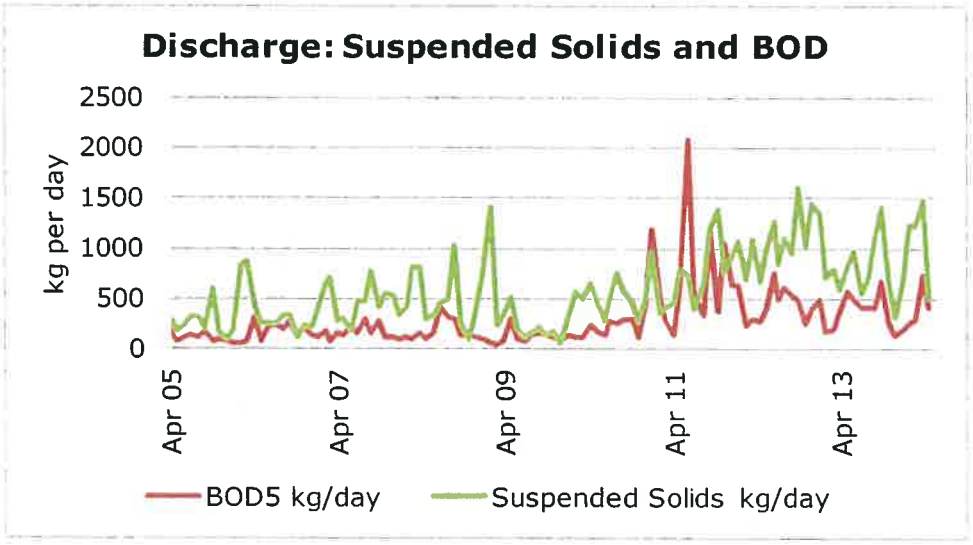


Figure 6.8: Suspended Solids and BOD in discharge

6.3. Suspended solids and BOD in the discharge has increased over time and continue to trend upward. This increase is related to the decrease in hydraulic capacity of the ponds with the sludge build up over time. The timing of desludging the ponds now requirse special attention.

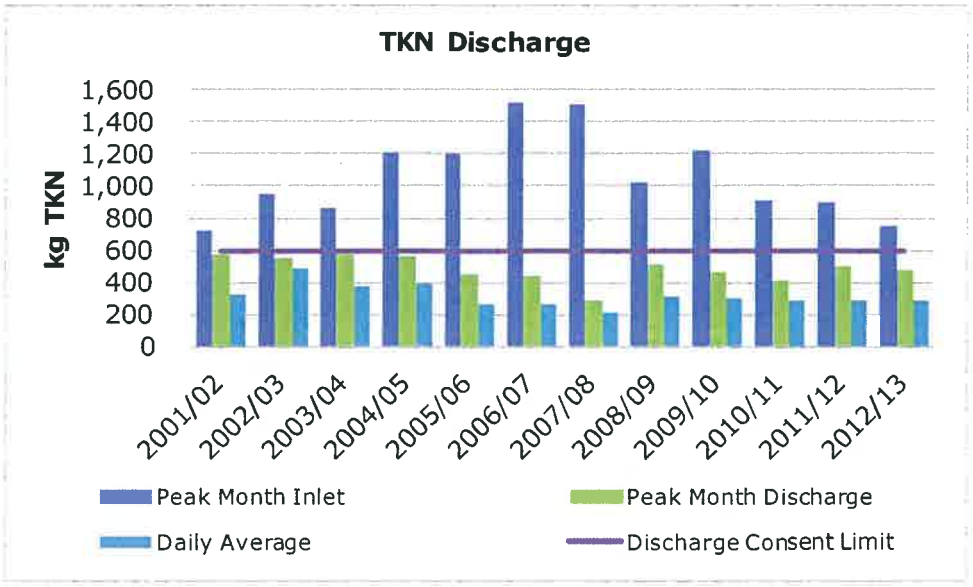


Figure 6.8: Nutrient loads TKN

6.4. The discharge of nutrients to the environment is significantly lower than the consent limits and suggests that the plant is operating well within its capacity.

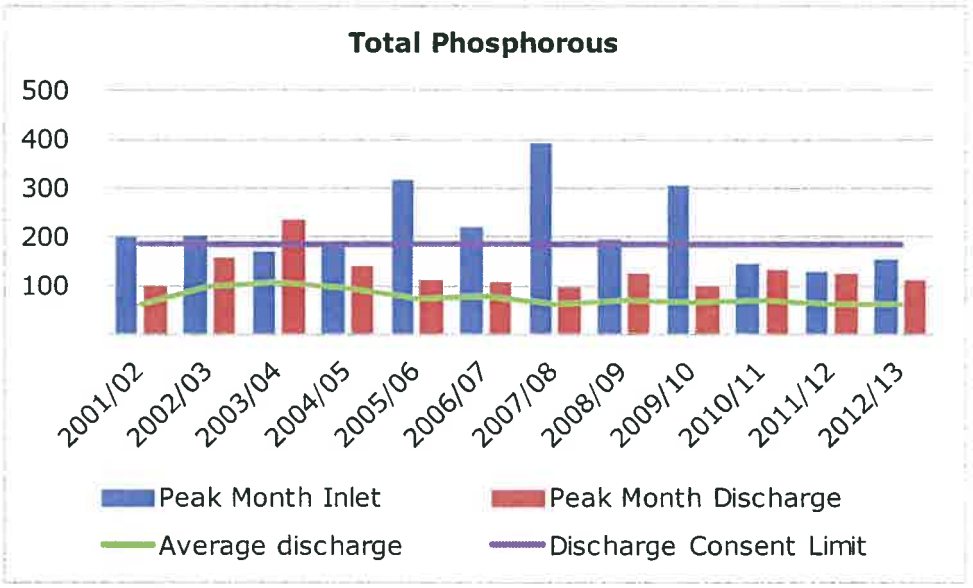


Figure 6.9: Nutrient loads TP

6.5. Discharge quality confirms the observation in the Capacity and Commisioning report that there is adequate capacity for the foreseeable future.

6.6. An analysis of nutrient discharges suggests that nitrogen and phosphorous cannot be considered a serious problem at the Bell Island treatment plant at this time.

6.7. It is important to make allowance in the long term strategy for a contingency to cater for nutrient and phosphorous management if this becomes a requirement following the next resource consent.

6.8. Observations of the quality of discharges have indicated increases in the average faecal coliforms.

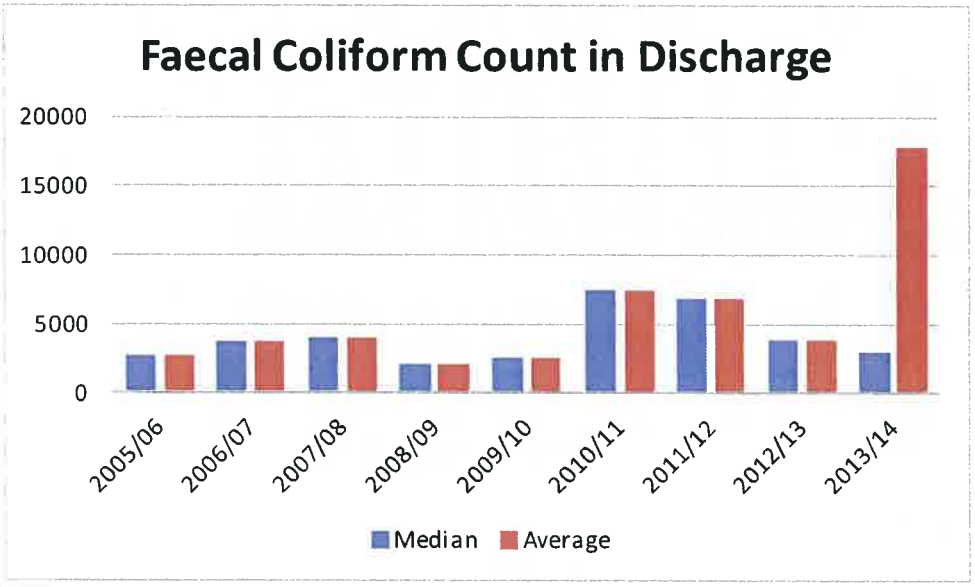


Figure 6.10: Faecal Coliforms

6.9. The increase in average faecal coliforms is linked to increased algae levels in the maturation ponds.

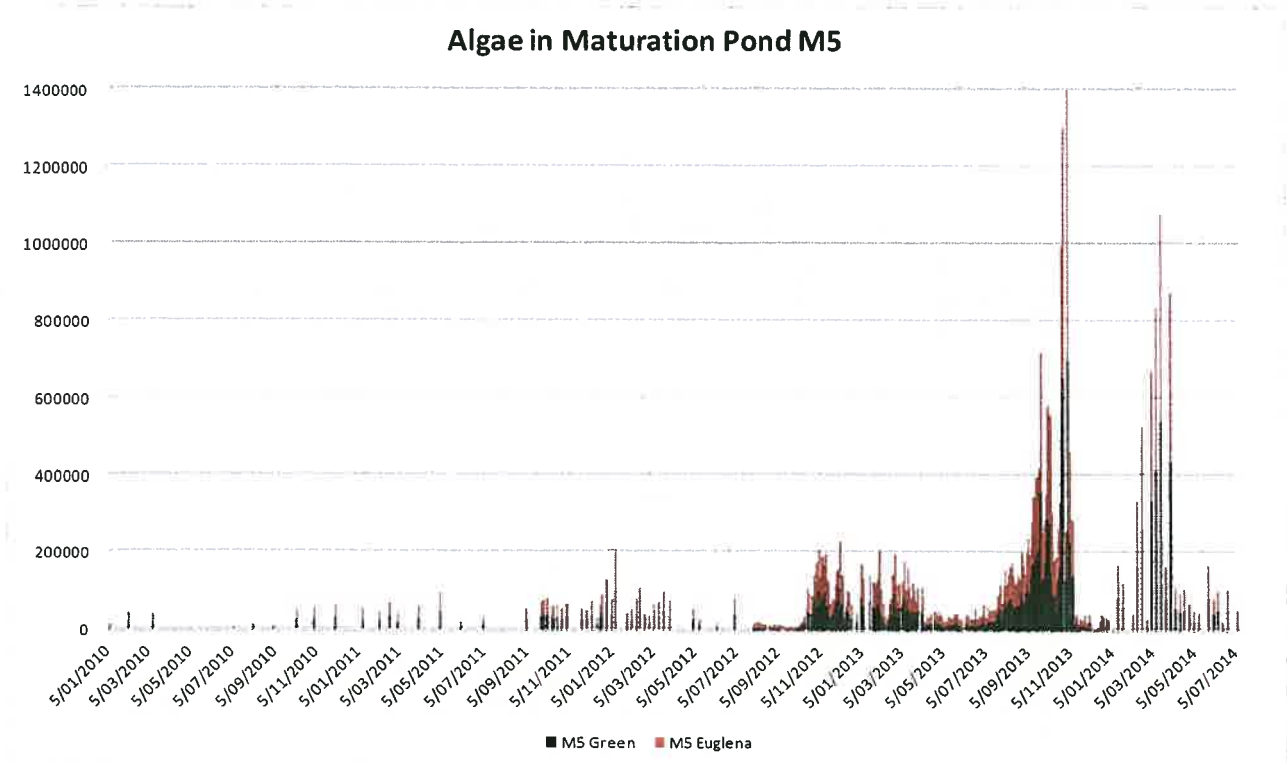


Figure 6.11: Algae in Pond M5.

6.10. Records dating back to 2004 suggest that the increase in algae observed in 2013/2014 is unusual for Bell Island. While the discharge quality continues to be well within the resource consent limits it is apparent that there has been a deterioration of the effluent quality over time. Consideration need to be given to improve the management of algae in

the ponds to ensure improved coliform reduction in the maturation ponds.

6.11. The linkages between feeding the ponds with predominantly primary effluent or secondary effluent is not well understood but the increased algae levels in the ponds appear to be associated with changes in the material fed into the ponds. The higher levels of algae appear to follow periods of increased primary effluent fed to the ponds (Changes to process control under the management of the NELMAC team to optimise the operation of the oxidation ponds).

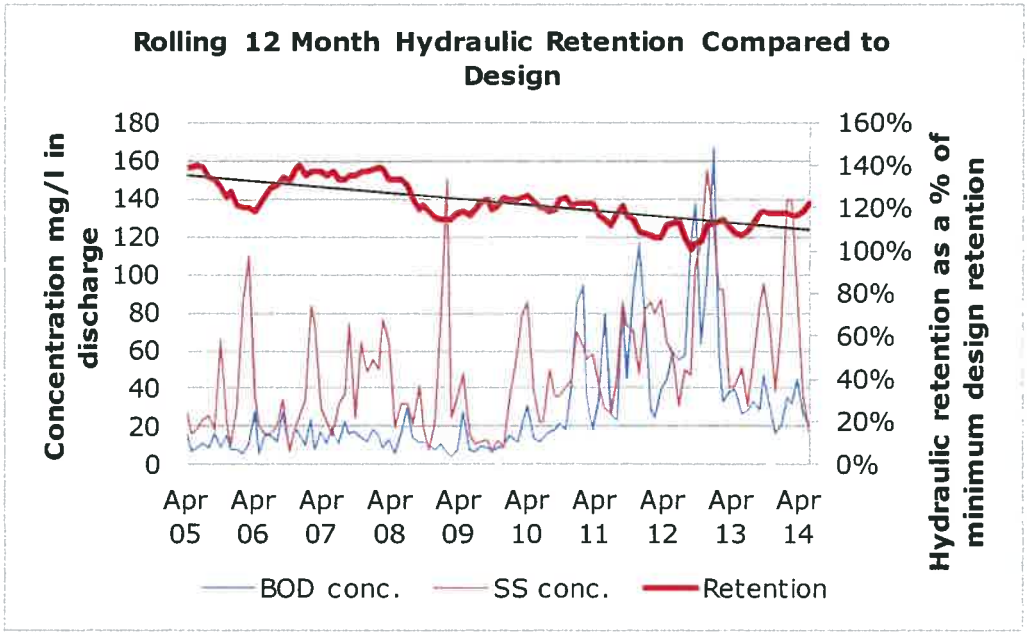


Figure 6.12: Hydraulic retention time in ponds.

6.11.1. The graph shows that the hydraulic retention time has decreased over time and it is projected that the design hydraulic retention time will be exceeded within the next few years. Consideration will need to be given to constructing additional pond capacity during the next 10 years if we continue with the current operating regime.

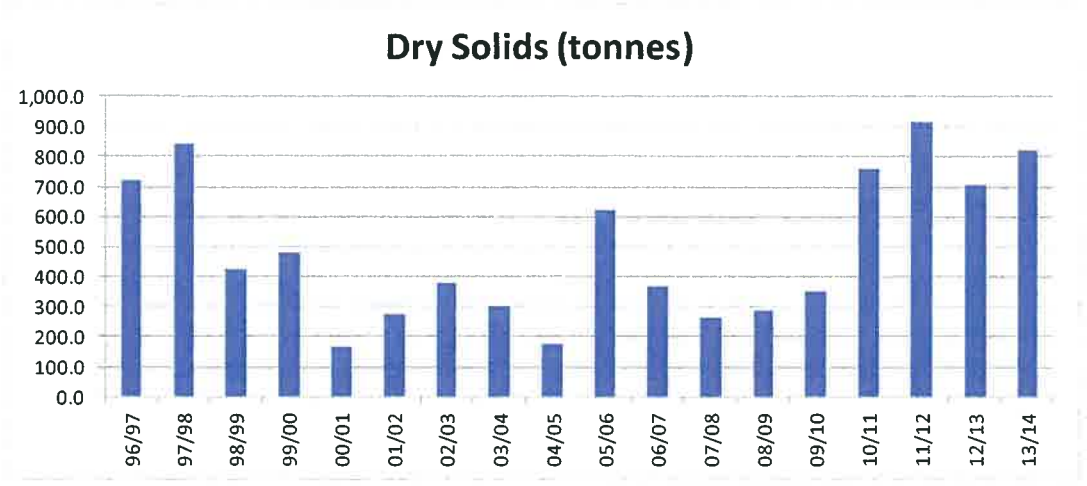


Figure 6.13: Biosolids application.

6.12. It is apparent that the ponds have a significant capacity to treat sludge but this capacity is not consistently used. The increase in dry solids in 2005/06 followed the upgrade of the ATADs in 2004/05. The decrease

in dry solids after 2005/06 suggests that a higher percentage of sludge was treated in the ponds during the period that followed. The sharp increase following the 2010 upgrade is associated with the commissioning of the primary clarifier and a focus on diverting sludge away from the ponds and processing sludge in the ATADs.

6.13. It is apparent that no serious issues developed during the period when higher volumes of sludge was diverted to the ponds for treatment. The build up of sludge in the ponds can be managed in different ways. (i.e. Using the treatment capacity prior to the ponds optimally and treat as much of the sludge within the ATADs as possbile or determine the capacity of the ponds to treat sludge and optimise the operation of the ATAD's.)

6.14. The land available for biosolid application is not considered to be a constraint.

Biosolids		
36 Month Rolling Average/Used as percentage of capacity available		
Nitrogen Capacity used in 3 year cycle	Concentration Workability limit 5%	Area used in 3 year cycle
60%	2.8%	69%

7. Operational observations.

7.1. Observations by the NELMAC team during the first seven months of the operation of the treatment plant under the current contract has demonstrated that it is likely that the treatment plant can be operated without loss of effluent quality for considerable periods of time whilst bypassing the activated sludge area. This has the potential to generate significant cost savings and reduce energy use. However, operational strategies are still being developed and are linked to the modelling work being carried out at the moment.

7.2. The NELMAC team has pointed out that the aeration basin is struggling to maintain acceptable dissolved oxygen (DO) concentration and that this can probably be associated with the low oxygen transfer efficiency of the existing aerators. It was further pointed out that the variability in performance of the aeration basin can be attributed to lack of long term stable operation due to the maintenance on major process items which resulted in variable loads to the aeration basin.

7.3. It is considered that it is not yet the appropriate time to implement drastic changes to the aeration system within an environment where the operator continues to develop and optimise the operation processes.

7.4. A high level investigation into the effectiveness of the aerators suggests that the impellors and diffusers of the aerators have not been maintained optimally. It is therefore considered appropriate to implement the new operation strategy, renew the impellors and diffusers, and evaluate the outcomes before embarking on an upgrade of the aeration system.

7.5. The improvements of screening following the installation of the milliscreen are considered a particular success story following the 2010 upgrade. The cost of maintaining downstream equipment has decreased significantly since the installation of the milliscreen.

7.6. Downstream issues developed rapidly when it was required to remove the milliscreen for major repairs and servicing recently. It was found that the step screen was less effective at screening the wastewater and resulted in problems with the primary clarifier, the primary sludge transfer pumps, primary A-Train charge nozzles, increased blockages on the return activiated sludge pumps, and the sludge transfer pumps.

7.7. Over the last few years the discharge quality has decreased. Investigations into the issues recorded, increased BOD and Suspended Solids and erratic ecoli results, is continuing.

7.7.1. Intermittent elevated Total BOD compared to CBOD levels have been observed following the primary clarifier upgrade in 2010.

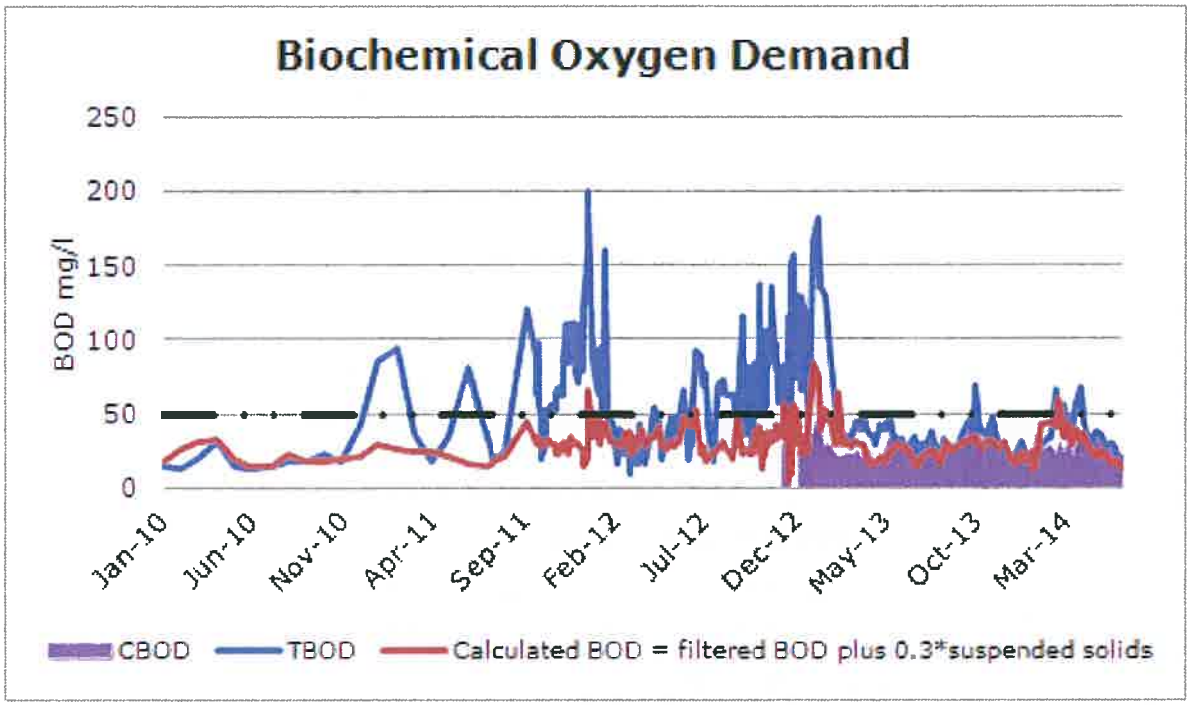


Figure 8.1: BOD in Effluent

7.7.2. Process changes made by the operator pre October 2013 to decrease the sludge retention in the aeration basin appear to have mitigated the problems experienced with elevated TBOD.

7.7.3. However, it is apparent that BOD and suspended solids levels in effluent discharges have increased over time.

7.8. Sludge surveys carried out in November 2012 indicated that the ponds will need to be desludged within the next seven years. The results of the annual sludge survey carried out by NELMAC in 2014 suggested that the sludge build up in the facultative ponds observed in the independent survey carried out in 2012 needed to be reviewed. A second independent sludge survey was carried out in June 2014 and the findings are shown in the table below.

Pond	Year	Average pond depth	Average sludge depth	Max sludge depth	Sludge level to pond surface
M1	2012	1.29	0.19	0.44	1.1
	2014	1.38	0.21	0.44	1.17
M5	2012	1.36	0.17	0.42	1.19
	2014	0.91	0.09	0.34	0.82
F1	2012	1.78	0.52	1.09	1.26
	2014	1.56	0.57	1.15	0.99
F2	2012	1.9	0.69	1.35	1.21
	2014	1.78	0.7	1.35	1.08
F3	2012	1.83	0.47	1.1	1.36
	2014	1.69	0.58	1.2	1.11

Table 6.5: Sludge Survey Results

Note: Design operating level of facultative ponds is 1.7m. The pond overflow in F1 was adjusted following the most recent pond survey. Following the adjustment the sludge level to surface will exceed 1m, which is consider the margin of safety required to operate facultative ponds.

7.8.1. Based on an average sludge build of 38mm per annum it is estimated that the ponds have capacity to operate without problems for at least the next two years.

7.8.2. The effect of the operational changes made to the ponds following the April 2013 heavy rainfall event needs to be monitored annually to determine the appropriate (optimised) timing for desludging of the ponds.

8. Variance from previous plan

This section outlines variations to items designated for an upgrade in the Ten Year Upgrade Plan as presented in the 2014/15 Business Plan.

8.1. Regional pipeline upgrade.

8.1.1. Regional pipeline upgrade was included in the 2014/15 Ten Year Upgrade Plan at a projected cost of $34.5mil and programmed for design and construction the period 2019 to 2022.

8.1.2. It is proposed that the Regional Pipeline Upgrade strategy be updated. This is following a reassessment of growth projections on which the Councils projected their flows and to allow funding for the cost to complete the pipeline upgrade by laying an additional pipeline from Heading Lane to Bell Island, and the conversion of the TDC pump station at Headingly Lane. To achieve this it is proposed to include the following items be included in the upgrade programme:

8.1.3. A review of the Regional Pipeline Strategy in year 2017/18 at a projected cost of $40,000.

8.1.4. Detailed design and consenting for the regional pipeline upgrade in year 2019/20 at a projected cost of $1,000,000.

8.1.5. Construction of regional pipeline upgrade project in years 2020/21 and 2021/22 at a projected cost of $13mil.

8.2. **Saxton Road Pump Station.**

8.2.1. The Saxton Road biofilter is partially located on NZTA land. In terms of the sales and purchase agreement the NRSBU will have the sole responsibility for the relocation of the biofilter.

8.2.2. An amount of $160,000 will be allowed for the construction of a Carbon filter at Saxton Road in year 2015/16.

8.3. **Songer street pump station.**

8.3.1. Provision is made in year 2025/26 for the upgrade of the Songer street pump station at a cost of $100,000 and will entail the replacement of the jockey pump with a third high capacity pump in line with the regional pipeline upgrade programme.

8.4. **Airport pump station.**

8.4.1. The airport pump station will be upgraded in through the replacement of the one of the duty pumps with a second storm pump to bring this pump station in line with the other major pump stations. $270,000 will be provided in year 2015/16 for this purpose.

8.5. **Treatment plant process monitoring.**

8.5.1. A thorough assessment of the value of the implementation of continuous process monitoring will be carried out following the development of the wastewater treatment plant model. A business plan will be developed for the consideration of the Board before implementation.

8.5.2. Amounts of $110,000 will be allowed in years 2015/16 and 2016/17 for the implementation of continuous process monitoring, thould it be proved cost-effective to do so.

8.6. **Inlet screen.**

8.6.1. It is considered best practice to operate a wastewater treatment plant with more than one screen.

8.6.2. The old step screen was retained to provide back up for the milliscreen but has effectively reached the end of its useful and economic life.

8.6.3. The inlet to Bell Island was constructed in such a way that a second screen could be fitted once the inlet flows increase beyond the capacity of the milliscreen. Following the completion of the pipeline upgrade the screening capacity is exceeded during high flow events.

8.6.4. The screening will be reviewed to determine the best type and combination of inlet screens for Bell Island.

8.6.5. An amount of $315,000 has been proposed in 2015/16 to upgrade the inlet screening.

8.7. **Nitrogen and Phosphorous removal.**

8.7.1. Nitrogen and phosphorous removal was included in the 2014/15 Ten Year Upgrade Plan at a projected cost of $4.56mil in year 2018/19.

8.7.2. Nitrogen and phosphorous removal was highlighted in the 2006 capacity review as items that could require future improved treatment.

8.7.3. However, nutrient levels in discharges from Bell Island and the trends observed in the customer discharges indicate that requirements for nutrient removal is unlikely to result from loads but will rather result from changes in discharge limits.

8.7.4. Nutrient and phosphorous removal may be needed to meet resource consent requirements that could be imposed following the renewal of the discharge permit in February 2018.

8.7.5. Literature studies have shown that nutrient removal can also be achieved by modifying the existing pond systems and by increasing retention times through adding additional maturation ponds and/or modifications to the ponds. The original wastewater treatment plant design allowed for the construction of up to three additional maturation ponds over time.

8.7.6. The construction of additional ponds will also create significant additional contingency capacity to manage high inflows to Bell Island following heavy rain events and will result in improved faecal coliform removal.

8.7.7. The new long term plan proposes an amount $5,000,000 in Year 2018/19 and 2019/20 to allow for work which may be required for improvements to the treatment plant that may be needed to meet future resource consent requirements.

8.8. **Activated sludge management**

8.8.1. The construction of a second secondary clarifier at a projected cost of $2.8mil is allowed in upgrade programme for year 2030/31 to cater for potential increased flow. This will only be needed if it is cost effective to do so.

8.9. **Sludge management.**

8.9.1. Sludge management upgrade was included in the 2014/15 Ten Year Upgrade Plan at a projected cost of $5,000,000 in year 2016/17. It is proposed this be removed.

8.9.2. During the renovations of A-train, to replace the roofs and refurbish the tank walls, it was demonstrated through in-house analysis and observation that the current sludge load can be successfully treated using two of the three ATAD trains for extended periods.

8.9.3. The sludge storage tank has shown signs of deterioration and will need to be renewed in the near future. The installation of a duplicate sludge storage tank will provide redundancy that will allow the opportunity to extend the economic life of the sludge storage facilities and provide redundancy in the event of component failure.

8.9.4. A dual facility will also allow for improved mixing of secondary and primary sludge if this should become an important consideration in future.

8.9.5. Duplicating the facility will also provide additional storage of sludge in events where sludge cannot be processed or sprayed in the Rabbit and Bell Island forests.

8.9.6. It is proposed that $200,000 be included in the upgrade programme for the installation of a second sludge storage tank in year 2015/16.

8.10. **Pond management.**

8.10.1. Consistency of the quality of effluent discharges can be obtained by creating directional flow through the ponds. This type of modification is common practice and has been implemented at many treatment plants internationally and in New Zealand. Floating plastic curtains can be installed in all the oxidation ponds and will lead to improved treatment of effluent throughout the treatment plant.

8.10.2. It is proposed that floating curtains be installed in maturation pond M5 in 2015/16, at an estimated cost of $140,000, to improve the quality of the treated effluent discharged to the Waimea Inlet. The installation of the curtains in M5 will create directional flow through the pond which will result in improved treatment and removal of algae.

8.10.3. The pond will be effectively separated into three ponds in series. The modifications will allow for further separation of ponds. This will allow the implementation of other techniques to manage algae and improve pond treatment. Some of the ponds created in this manner can be covered in order to accelerate algae removal or aquatic plants can be used in some of the ponds to accelerate nutrient removal through natural processes.

8.10.4. The modifications will allow for further separation of ponds. This will allow the implementation of other techniques to manage algae and improve pond treatment.

8.10.5. The effects of the curtains on the effluent will be monitored and if the results provide confidence that the improved treatment is significant similar modifications will be designed for M1 and the facultative ponds.

8.10.6. It is proposed that floating curtains be installed in maturation pond M1 in 2016/17, at an estimated cost of $140,000, to create directional flow through the pond which will result in improved treatment and removal of algae.

8.10.7. It is proposed that floating curtains be installed in the three facultative ponds in 2019/20, at an estimated cost of $420,000, to create directional flow through the ponds which will result in improved treatment.

8.11. **Desludging of ponds.**

8.11.1. An amount of $1,140,000 was included in the 2014/15 Ten year upgrade plan in year 2016/17 for the desludging of the oxidation ponds at Bell Island.

8.11.2. Funding will be allowed in the upgrade plan for desludging of the oxidation ponds at Bell Island. The desludging programme is based on an approach that will see the partial desludging of the facultative ponds in the period between 2016/17 and 2017/18 and the disposal of dried sludge to landfill in years 2024/25/26 and 27.

8.11.3. An options study will be funded in year 2015/16 at an estimated cost of $40,000 to determine the most appropriate desludging and disposal processes.

8.11.4. The desludging will be carried out over two financial years with $200,000 and $1.4mil programmed for this purpose in years 2016/17 and 2017/18 respectively.

8.11.5. $700,000 per annum will be allowed in the plan for the disposal of the dried sludge to landfill in years 2024/25, 2025/26 and 2026/27.

8.12. The following table summarises the capital upgrade and associated estimates in the NRSBU Long Term Plan.

NRSBU Capital Upgrade Plan ($,000)

Year	Description of Projects	Estimated Costs
	Modification pond M5	140,000
	Upgrade odour control at Saxton	160,000
	Sludge management (Sludge Storage Tank)	200,000
2015/16	Desludging of Ponds (Option study)	40,000
	Automation of Process monitoring	110,000
	Airport pump station upgrade (2nd storm pump)	270,000
	Screen upgrade	315,000
	Modification pond M1	140,000
2016/17	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
	Modification Facultative Ponds	420,000
2019/20	Treatment Plant Upgrade (Consent dependent)	2,500,000
	Richmond Regional Pipeline	1,000,000
2020/21	Richmond Regional Pipeline	6,500,000
2021/22	Richmond Regional Pipeline	6,500,000
2024/25	Disposal of dried sludge to landfill	700,000
2025/26	Songer street upgrade	100,000
	Disposal of dried sludge to landfill	700,000
2026/27	Disposal of dried sludge to landfill	700,000
2030/31	Activated sludge management (2nd Secondary clarifier)	2,800,000
Total		$27,545,000

8.13. Renewal Programe.

8.13.1. The renewal strategy of NRSBU assets are 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.

8.13.2. Specialised condition reports are commissioned where additional information is required to ensure optimal use of assets.

8.13.3. This approach works well due to the relatively small number of different assets managed by the NRSBU.

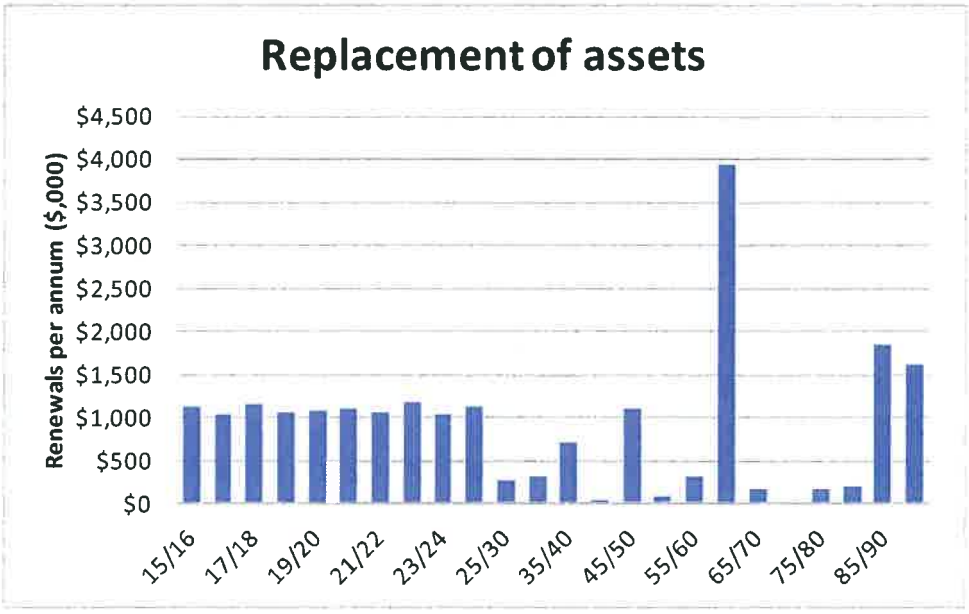


Figure 8.12: Renewal programme

NELSON REGIONAL SEWERAGE BUSINESS UNIT
12 Year Operations and Maintenance Plan ($,000)

Operational item	1	2	3	4	5	6	7	8	9	10	11	12
	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Total Management	195	195	215	195	195	215	195	195	215	195	195	195
Total Financial	794	878	879	920	1129	1359	1804	1930	1852	1803	1735	1671
Depreciation	1974	1974	2231	2231	2231	2322	2322	2322	2322	2897	2897	2897
Total Electricity	763	763	763	783	783	783	783	783	783	783	783	783
TP Maintenance	942	967	967	967	967	967	967	967	967	967	967	967
PS & RM Maintenance	227	227	227	227	227	227	227	227	227	227	227	227
Total Monitoring	138	179	136	121	166	139	198	119	136	121	136	209
Consultancy	50	50	50	50	50	50	50	50	50	50	50	50
Insurance	60	60	60	60	60	60	60	60	60	60	60	60
Rates & Rental	30	30	30	30	30	30	30	30	30	30	30	30
Water Charges	22	22	22	22	22	22	22	22	22	22	22	22
Forestry and spit restoration	8	25	8	26	20	8	8	8	8	8	8	8
Biosolids Disposal	520	520	520	520	520	520	520	520	520	520	520	520
Telephone/Computers	21	21	21	21	21	21	21	21	21	21	21	21
Total Expenses	5744	5911	6129	6173	6421	6723	7207	7254	7213	7704	7651	7660

9. Conclusion

9.1. The long term plan provides significant operational savings compared to the previous plan that was based on the 2006 capacity report.

9.2. The plan provides flexibility and generous opportunities to defer capital expenditure if outcomes of modifications to the ponds further streamlining and optimisation of operation processes.

Contact officer: Johan Thiart, Senior Asset Engineer: Solid Waste Engineering Adviser

Attachments Note of strategy meeting. A1212433

NRSBU Long Term Strategy : Meeting Notes

Meeting Name	NRSBU Strategy Day		
Meeting Venue	Trailways, Nelson		
Date Of Meeting	25/6/2014	Time Of Meeting	10am to 2.30pm
Chairperson	Richard Kirby		

Attendees
Richard Kirby – NRSBU - (RK)
Johan Thiart – NRSBU - (JT)
Phil Ruffell – Nelson City Council - (PR)
Jeff Cuthbertson- Tasman District Council- (JC)
Paul Barratt – Nelmac - (PB)
Lindsay Bell – Nelmac - (LB)
Rainer Hoffmann – MWH - (RH)
Richard Lester – MWH - (RL)

Councils Growth and Demand

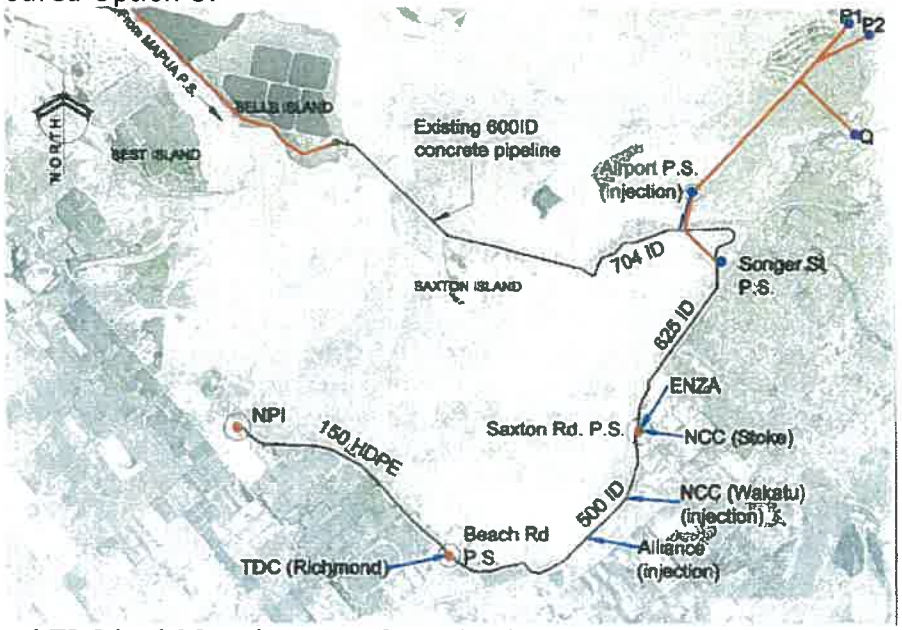
- JC confirmed that current contracted limits were sufficient for TDC.
- JC: TDC will focus on installation of pump systems for property services to limit inflow and infiltration. All properties are required to install boundary inspection points. This will allow for inspection of infiltration and inflow from private properties. TDC reviewing Tradewaste Bylaw. Renewals are based on condition assessment and age.
- JC indicated that TDC and NCC are continuing to work towards forming a club in order to improve the management of Council demands.
- JC raised a concern that some industrial customers in their jurisdiction discharge high loads intermittently and that it is difficult to pin them down. TDC is working towards improving trade waste compliance.
- JC indicated that recent significant increases in water charges to the three industrial contributors could affect their behaviour in terms of flows and loads discharged to the NRSBU. (Likely to lead to improved on site treatment)
- PR confirmed that NRSBU load forecast were good and was happy with them.
- PR: NCC reviewing Bylaw. Planning to ban insinkerators. Place more emphasis on implementation of tradewaste controls to identify and target significant polluters. Renewals based on condition assessment and age. I/I has been managed in an add hoc way and a strategy is being developed in order to improve the management of I/I programmes.
- Both Councils agreed to the current load limits and straight line extrapolation for the 30 year of the AMP using Figure 3.2 of the draft AMP circulated
- There was also agreement that demand is not directly related to population growth.
- Conclusion: While all parties agreed to use the existing flow projections there was consensus that these flows do not reflect demand management strategies implemented by the Councils.

Contributor	Individual Contributor Flow Projections (l/s)				
	AMP Design Flow	Assessed Present Peak Flow	Projected Flows to 2025	Projected Flows to 2035	Projected Flows to 2085
Nelson Pine Industries (NPI)	23	23	23	23	23
TDC (Beach Road PS)	680	389	475	525	725
Alliance Group	35	35	35	35	35
NCC Wakatu	84	5	58	64	84
NCC Stoke (Saxton Road PS)	65	58	84	93	113
ENZAfoods	30	30	30	30	30
NCC Songer (Songer Street PS)	458	143	254	273	285
NCC Airport (Airport PS)		304	291	306	316
Contributor Total	1375	987	1251	1349	1610

Flow projections used in 2009 design flow projections.
Discussion around programming of loads received from industrial contributors to equalise loads on the plant. Improve diurnal load pattern.
RH indicated that the implementation of a three bin system for solid waste collection, including kerb side organic waste collection, has decreased loads, specifically suspended solids, discharged to the wastewater treatment plant in Christchurch.

Pumping and Reticulation

- Richmond – Beach Road Pump Station:
  - JT summarised limited capacity of Pump Station (PS) and Rising main (RM) between Beach Rd and Saxton, and from Saxton onward to the Bell Island Wastewater Treatment Plant (WWTP). Also there is no security if the pipeline fails.
  - JT outlined 3 options considered, all looking to provide another (3rd) rising main to Bell Island WWTP more directly from Richmond:
    1. Around Lower Queen Street, land based route.
    2. Direct from Beach Road PS to Bell Island WWTP.
    3. From Beach Road PS to Headingly Lane PS/NPI area and then to Bell Island WWTP.
  - All favoured Option 3.



  - JC noted TDC had PS at bottom of Headingly Lane – could take Richmond South Growth, would need to be in NRSBU ownership if receiving NPI waste, would inject into trunk main passing, has designations to enable first phase of trunk main.

- JC noted that TDC has registered an easement between Beach Road and Headingly Lane that can accommodate this pipeline.

- Songer St PS – Consideration was given to the need to install larger pumping capacity within 30 years. The upgrade required at this pump station could be replacing the jockey pump with a third 200kW stormpump to allow for duty/assist and standby arrangement from around 2025.
- Airport PS – consideration was given to installing a second storm pump in place rather than having a spare pump. It was concluded the additional redundancy provided was a good measure and that this should be timed for year 15. That consideration be given to a duty/standby arrangement for storm pumps.
- Trunk Mains – all considered ok – provided Beach Road, Headlingly Lane, Bell Island Trunk main installed.
- JT advised he has included for a review of the Beach Road, Headlingly Lane, Bell Island Trunk main for Year 4 with construction of the trunk Main over 2020/21 and 2021/22 FYs.

Treatment Plant

Overall Plant

- RK asked the high level question – does the plant have adequate capacity to deal with the 30 year loads
- Overall RH summarised that yes – the plant has the horsepower to deal with projected flows, however there were some elements that are not operating to a level that provides reliable performance, and there might need to be some expansion to deal with nutrients if consent limits change. The overall concept of using the ponds more to take load and save energy is still sound, but the AS Basin needs to be able to deal effectively with load – when pond performance is lower in winter and for peaks. At the moment the AS Basin cannot keep DO at appropriate levels despite running with all aerators. Also secondary clarifier capacity needs to re-evaluated for the 30 year loads.

Inlet Works

- It was agreed to replace the step screen which is past it's design life. Civils have been designed to duplicate inlet milliscreen.
- LB noted the current milliscreen has been out for major repair which is early in life.
- RH recommended that other screen types be considered – his experience of band screen has been good.
- JT to look at prices of alternatives.Green Process Ltd are suppliers of band screens.
- The inlet screens should be reviewed to ensure that the most appropriate combination of screens is installed.

Grit Chamber

- Functions without O&M problems. Since the installation of the milliscreen there has been a significant decrease in grit and settled material in the aeration basin. Comment: The grit and material observed recently in the launder of the primary clarifier is more likely a result of the fact that the milliscreen has been out of action to allow for repairs.
- Not sufficient evidence to support for capex.

Primary Clarifier

- Sludge pipe very small – 75mm. Generally this is 150mm. Runs approx 100m. Has two cleaning eyes installed. Does get blocked if not regularly flushed.

- Consider including in capex to replace.
- The scum removal is directed back to inlet – risk re-circulation. Ideally should be diverted to digestors and ATADs. Need to investigate transfer of scum (fat) directly to ATAD's.
- Consider including in capex to divert.

AS Basin

- RH summarised his observations:
    - Aerators will be approaching the end of their useful service life.
    - Drawing only 300 kW when rated for 600 kW – indicates lower aeration performance. Comment: Probably a legacy of the incentive for previous contractor not to maintain the aerators optimally. Following discussion with contractor (team leader) it became apparent that impellors have not been renewed. The channel rings (diffuser plate) have not been renewed. Channel ring performance has not been evaluated since the improvements to the inlet. Evaluation of maintenance cost of aerators suggests that the unit cost to operate them have actually decreased over time. It is probably time to renew impellors and channel rings to gain efficiency.
    - Low DO levels support poor efficiency of aerators.Very hard to raise DO. Remains at minimal levels unless AS basin de-loaded (ie primary effluent bypassed to ponds) We need to evaluate the effectiveness and efficiency of the aerators. Within the context that the aeration basin will in future generally be operated under reduced loads or even only be used seasonally an upgrade of the aeration system should be reviewed as a detailed business case.
    - Low efficiency is reducing AS Basin performance – especially to take peaks and presents risks during winter when ponds at low performance. Will also be causing high electrical costs.
    - RH suggested that the aeration basin effectiveness can be improved by locating the RAS return away from the aeration basin outlet. Review required.
- LB noted operations observations:
    - Stator (diffuser plate?) channel and impellor are high maintenance. The technology relies on cavitation and this is erosive on the metal.
    - Replacement stator channel expensive - $15,000. They can be fabricating locally for tenth of cost. According to the team leader he has only replaced the channel rings for the ATAD aerators. (Basically the same aerator) He indicated that the ring channels in the aeration basin are all badly warn.
    - As they deteriorate they lose efficiency.
    - Expensive to remove and maintain and takes operators off other tasks.
- RH advised that fine-bubble aerators with surface blowers more reliable. No moving parts in liquor – much less corrosion. Blowers above ground and easy to maintain (LB noted ATAD A train blowers low maintenance).
- RH could not provide confident cost estimate – ball parked figure of $3m
- RK asked for MWH to provide high level estimate.
- RL noted a business case could be provided – O&M, energy, and renewal costs vs cost of capital.
- JT to review renewal budgets to see whether this could be used as funding mechanism.
- RH also noted RAS comes into basin at outlet instead of more conventional inlet where better mixing with influent would be achieved. JT to include provision for relocation in capex.

Secondary Clarifier

- RH noted problems with clarifier performance. Difficult to get good SS capture. Lot of carry-over problems. Carry-over is into FOPs which can accommodate with no problem.
- Scrapers and gearboxes will need to be replaced at some time which will be a major task. Allowed for under renewals. Detailed condition assessment needs to be carried out.
- It would be ideal to have a second clarifier – improved performance, better redundancy for maintenance, but an expensive provision. Considering that we might only use the activated sludge area on an as needed basis a second clarifier appears to be a bit of an over kill. Seasonal use of aeration basin. We found that the plant worked well during the two months, February and March, that the secondary clarifier was off line. Appears to be adequate redundancy in the plant.
- Concrete itself in good condition.
- RK proposed that an additional clarifier could be included for year 25 – 30.

Sludge Holding Tank

- JT noted condition problems in sludge holding tank and the desireability of having two tanks in front of ATADs would improve ability to store and mix different sludges.

Sludge From Councils

- JC asked whether TDC could transport sludge to site for treatment through ATADs.
- JT confirmed that primary sludge could be processed through system.
- Nelson North WWTP transports primary sludge to Bell Is WWTP but that this would cease going forward once the primary pond has been desludged.

ATADS

- 2 trains are sufficient for current loads. With third train, provides confidence ATADs can take 30 year capacity.
- LB reported that he has the perception that A Train provides best performance.
- B & C train use Frings aerators. These are not in the installed condition. The sparges have been taken off to make removal from the tanks easier for the contractors. The contractor has a perception that the mixing seems to be inadequate as they tend to accumulate increasing layer of solid material on top of sludge which builds up. When one train was emptied, this had to be sucker trucked to the old aeration basin.

Outfall Pump

- There is no replacement pump that is held as spare and with no redundancy, there is a risk that pump out could be compromised by pump failure.
- On the basis that pump out is a back-up system in event of high flows (ie not a frequent activity), and that holding a spare pump unused is not ideal, and that managing the water level in the ponds to provide storage could be implemented in time for rare event of extreme high flows and pump failure, that having a spare was not essential. Review the need for a spare pump.

Biosolids Disposal

- Good – no problems identified.

Ponds

- JT summarise sludge survey conclusions and noted that sludge is becoming a problem.
- All agreed that removing sludge is needed.
- JT has been considering whether sludge removal could be operationalised – purchase dredge, pass sludge to inlet works for settlement with primary sludge and pass through ATADs or pass directly through belt thickener and then to ATAD , or feed directly to geobags as done at NNWWTP currently.
- As a capital exercise – high cost. JC noted cost of Motueka tender - $2m. LB noted Nelson North WWTP desludging was $800k and they had a suitable area for geobags which was a significant saving.
- LB noted that an hour of dredging would take a day to run through ATADs. Operationalising desludge therefore has problems and will take several years to complete.
- This needs further investigation.
- All agreed the baffling of the ponds would be beneficial.
- JT supported baffling M5 to get better disinfection and some nutrient removal.
- RH considered F1 to F3 would be beneficial to improve pond treatment performance – reduce short circuiting.
- Consideration could also be given to covering the last pond with a floating wetland to reduce algae and also potentially reduce nutrients.
- The concept of building additional maturation ponds was considered – it was always part of original design, there is room, adds wet weather storage, improves polishing and disinfection, potentially removes nutrients and while current limits are met – 2018 consent renewal might result in tighter limits.
- RH noted that it might be a better investment to add to AS basin to lengthen solids retention time and achieve nutrient removal through nitrification and denitrification. This will increase power consumption but will reliably remove nutrients when compared to ponds with a reduced performance in winter.
- It was agreed there needs to be flexibility there – incorporate a $5m scale figure for "improvements to meet resource consent renewal requirements", in that way it could be used for either option.
- Improvements to model and influent monitoring data would help allow options to be considered.

- General strategy was:

    - Improve monitoring and thus model to have confidence plant performance, include diurnal and seasonal load variations in model.
    - Use model to develop plant capacity review (included for).
    - Baffle ponds.
    - Desludge ponds – as operational activity if practical – to be tested.
    - Determine upgrade needs between new ponds, extension of AS basin or another secondary clarifier as it becomes clear through 2018 consent renewal.

Nelson City Council
te kaunihera o whakatū

Nelson Regional Sewerage Business Unit Joint Committee

29 August 2014

REPORT A1236138

Health and Safety

1. Purpose of Report

1.1 To update the Joint Committee on how the NRSBU intend on managing its health and safety obligations outlined in the Health and Safety Reform Bill.

2. Recommendation

THAT the Health and Safety (A1236138) be received.

3. Health and Safety Reform Bill

3.1 The Health and Safety Reform Bill has not been passed by government.

3.2 If it is passed in its current form it will come into effect on 1 July 2016.

3.3 The implications for the NRSBU Joint Committee would be the same as for any committee of the Nelson City Council, in that all the activities engaged and/or contracted by the board operate under the Nelson City Council policies and procedures.

3.4 The Nelson City Council intends to review its Health and Safety policy and procedures once the Bill is passed and becomes an Act. Given that there is an election approaching in September, it is likely that the legislation will not be passed until later this calendar year or early next year.

3.5 In the meantime all the contractors engaged to undertake the NRSBU functions have to comply with the Nelson City Council Health and Safety requirements. These are mandatory and are included in the contract documentation.

4. Conclusion

4.1 It is proposed that the NRSBU be briefed on the variations to the Health and Safety Policies and Procedures once the Health and Safety Legislation is passed by government and the Nelson City Council has amended its Health and Safety contractual requirements.

R J Kirby
General Manager NRSBU

No supporting information follows.