Notice is given that an ordinary meeting of the Nelson Regional Sewerage Business Unit will be held on:

Date:	**Friday 8 December 2017**
Time:	**1.00 pm**
Meeting Room:	**Tasman Council Chamber**
Venue:	**189 Queen Street**
	Richmond

Nelson Regional Sewerage Business Unit

AGENDA

MEMBERSHIP

Acting Chairperson	Cr Kit Maling
Members	Cr Dean McNamara
	Cr Tim Skinner
	Cr Stuart Walker

(Quorum 2 members)

Contact Telephone: 03 543 8524
Email: robyn.scherer@tasman.govt.nz
Website: www.tasman.govt.nz

Note: The reports contained within this agenda are for consideration and should not be construed as Council policy unless and until adopted.

AGENDA

1 OPENING, WELCOME

Tasman District Councillor Kit Maling will act as Chairperson until until a new Chair has been appointed.

2 APOLOGIES AND LEAVE OF ABSENCE

Recommendation
That apologies be accepted.

3 APPOINTMENT OF INDEPENDENT MEMBER

Consideration of the appointment of one member who is independent of either Council and not involved in any business related to the Nelson Regional Sewerage Business Unit activities. This consideration has arisen because Michael Higgins, previous Chair of the NRSBU and independent member, has been replaced by a Tasman District Councillor.

Clause 4.2iii of the NRSBU Memorandum of Understanding states:

This [independent] member is discretionary and would only be appointed if mutually agreed to by both the Councils. This independent member could be remunerated in accordance with the Joint Council Policy for the Appointment of Directors. If there is support from the board to appoint an independent member, then a recommendation will be forwarded to both Council Mayors.

4 APPOINTMENT OF A CHAIRPERSON

5 DECLARATIONS OF INTEREST

6 PUBLIC FORUM

7 CONFIRMATION OF MINUTES

That the minutes of the Nelson Regional Sewerage Business Unit meeting held on Friday, 15 September 2017, be confirmed as a true and correct record of the meeting.

8 PRESENTATIONS

Nil

9 REPORTS

9 REPORTS

9.1 NELSON REGIONAL SEWERAGE BUSINESS UNIT GENERAL MANAGER'S REPORT

Decision Required

Report To:	Nelson Regional Sewerage Business Unit
Meeting Date:	8 December 2017
Report Author:	Jeff Robinson, General Manager
Report Number:	NRSBU17-12-01

1 Summary

1.1 This is the General Manager's three-monthly update report.

2 Draft Resolution

That the Nelson Regional Sewerage Business Unit

1. **receives the Nelson Regional Sewerage Business Unit General Manager's Report; and**
2. **approves the Draft Business Plan 2018/2019 to be forwarded to each Council.**

3 Purpose of the Report

3.1 This report provides the three monthly update on Nelson Regional Sewerage Business Unit (NRSBU) activities and an outline what is proposed over the next few months.

4 Health and Safety

4.1 There have been 5 inductions and 222 visitors to the Bell Island WWTP over the past three months.

4.2 The following three Health and Safety incidents were reported:

- ute backed over the edge of the waveband in an old aeration basin;
- near miss incident, handling of acid in laboratory; and
- operator drove over a raised manhole cover.

5 Abberational (Accidental) Discharge Consent

5.1 The NRSBU lodged an application for a resource consent with the consenting authority (Nelson City Council) on 23 July 2015, which was publicly notified in August/September 2016. Submissions closed at the beginning of November 2016.

5.2 Following discussions with the consenting authority, the NRSBU applied for and was granted a suspension in the processing of the application to allow for caucusing between the NRSBU witnesses and the consent authority advisers.

5.3 The process is on track for the hearing scheduled to start on 12 December 2017.

5.3.1 The NCC Officer report will be circulated on 20 November 2018;

5.3.2 NRSBU witness statements must be finalised by 27 November 2018.

5.4 The project costs are shown in the following table:

	Estimate	Cost to date
Landmarklile	$60,104.00	$42,105.94
Legal	$71,282.00	$42,301.00
Environmental assessment	$105,000.00	$88,476.16
Engineering	$14,500.00	$8,376.25
Iwi Liaiso/CIA	$2,500.00	$2,500.00
Public Health	$21,000.00	$10,975.70
Recreation	$1,140.00	$1,140.00
Hydrodynamic model	$36,000.00	$36,000.00
Consent fees	$65,000.00	$45,834.53
Total	$376,526.00	$277,709.58

6 Bell Island Discharge Consent Renewal

6.1 The discharge consents for the Bell Island Wastewater Treatment Plant expire on 7 February 2018.

6.2 The application was lodged on 7 November 2017.

6.3 Project costs are shown in the following table:

	Contract Value/Estimate	Cost to date
Primary consultant	$220,000	$111,806
Legal	$40,000	$37,768
Iwi Liaison/CIA	$16,000	$11,285
Environmental assessment	$70,000	$44,646
Hydrodynamic model	$60,000	$48,000
Hydrodynamic Field work	$25,000	$23,490
Iwi facilitation (Estimate)	$15,000	$721
Consent fees (Estimate)	$30,000	$5,000
Total	$476,000	$282,716

6.4 All reports are all available on the NRSBU website. (www.nrsbu.govt.nz)

6.5 The QMRA reports that:

6.5.1 The discharge of treated wastewater from Bell Island generally poses low risk of illness associated with swimming and harvesting of local shellfish consumed raw, provided that sufficient log-removal of viruses is incorporated in the treatment system.

6.5.2 Provided adequate removal efficacy is attained by the Wastewater Treatment Plant (2log removal), the daily illness risk associated with recreational water contact or scallop collection will be well below the appropriate NOAEL (No observable adverse effect level) levels adopted in national guidelines. Greater log-reductions are required to adequately reduce the illness risk associated with other shellfish flesh consumption, at least 3log.

6.5.3 Previous reports have shown that the Bell Island treatment plant log removal capacity to be between four and 6log removal.

6.6 A report on the nutrient assimilation capacity of the Waimea Inlet by Cawthron reports:

6.6.1 Monitoring results to date have not identified any significant benthic or water column ecological effects due to nutrients discharged from the Bell Island WWTP.

6.6.2 Considering a potential 17% increase in effluent TN discharge loads, and assuming that dilution factors remain the same, concentrations of contaminants in the effluent plume would not be expected to increase noticeably beyond present levels.

6.6.3 An outcome from the consent process may be that an increase in nutrient load from the treatment plant is undesirable and require the NRSBU to consider/respond to the nutrient load in the discharge.

6.6.4 We need to explore options as a matter of good practice and initial options include the following:

- Nutrient removal prior to activated sludge processing;
- Increase the hydraulic capacity of the treatment plant through the construction of additional oxidation ponds;
- Increase the volume of treated wastewater that is used for land application;
- A combination of the above. (These improvements were discussed in the NRSBU Long Term Plan considered by the Board in June 2017).

7 Contract 3458 – Operation and Maintenance

7.1 The reticulation and treatment operations have continued as normal over the last few months. The effluent discharge continues to meet consent conditions and sludge produced at the treatment plant continues to comply with Class A biosolid quality.

7.2 The primary sludge continues to settle well and there has been no need to run the gravity belt thickener. This diverts the use of chemicals and generate power supply cost savings.

7.3 The QMRA has confirmed that the NRSBU can bypass the activated sludge process during summer generating significant cost savings in terms of power costs while maintaining treated wastewater quality that will have no more than a minor effect on public health.

7.4 Nelmac is expected to take the activated sludge process units out of operation from the start of December 2017 through to the end of March 2018.

7.5 The pond conditions are variable but they are performing well.

7.6 The curtains for M5 are being manufactured and will be installed in early December 2017.

7.7 A solar powered ultrasonic unit will be installed at the cost of just under $10,000 in pond M5 to control algae. The project was funded from the capital budget for improvements to pond M5.

7.7.1 The performance of the system will be monitored by comparing algae counts in the three compartments that will be formed through the installation of the curtains in M5 with algae counts in M1 and the discharge channel.

7.8 A condition assessment was carried out on the outfall diffuser lines during October 2017.

7.8.1 The assessment showed a significant build-up of oysters in the diffusers pipes and that two of the 26 duckbill valves were missing.

7.8.2 The diffusers ports were cleared.

7.8.3 New duckbills were fitted to the two ports where these were found to be missing.

7.8.4 The organic growth were removed through mechanical means from the two diffuser pipe strings.

7.8.5 The contractor reported that some of the growth remained in short diffuser.

7.8.6 A proposal by the contractor to use a pesticide, Dichlor, to treat the organic growth in the diffusers pipe are being investigated. A solution of Dichlor is used inside the pipeline to kill the living organisms inside the pipeline. The solution and residue is then released after applying a neutralising agent.

7.8.7 The use of this technique has been approved by Nelson City Council and is used to clean the hulls of ships in many jurisdictions.

7.8.8 The contractor is liaising with the consent authority to gain approval to use this method to remove growth inside the diffuser pipelines.

7.9 A dredging trial in M5 will be carried out during December 2017. This trial forms part of the development of a strategy to desludge the ponds.

7.10 During the storm on 7 November 2017 it was surprising to see storm pumps at pump stations called into operation during an event where less than 10mm of rain-fall was experienced.

7.10.1 The observation that storm pumps were called to operate following such low rainfall indicate that the cause of the increased flows can be attributed to direct inflow of storm water into sewer gravity lines.

7.10.2 The regional infrastructure coped well during the extended power outage that occurred during the same storm event.

7.10.3 All four large pump stations diverted to generator power without any issue.

7.10.4 Contingency plans were implemented to manage events that could result from a phased restoration of power supply to prevent overflows.

7.11 The sludge survey completed on 30 October 2017 showed that the hydraulic capacity of all three facultative ponds has increased since the last survey was completed in November 2015.

Sludge survey 30 October 2017	F1	F2	F3
Average water column above sludge layer (m)	1.31	1.27	1.33
Sludge Volume (m^3)	45390	60160	46400
% area where water column above sludge layer < 1m	<2.5%	<2.5%	Nil

Figure 4.11: Results from sludge survey completed on 30 October 2017

7.12 The trigger level for desludging is when the sludge comes within one metre of the surface for greater than 10% of the pond area while the pond is at normal dry weather operating level or when the treatment appears to be significantly reduced.

7.13 Sludge surveys carried out by the same contractor have indicated an annual increase in sludge build up over time. However, the most recent sludge survey has indicated a drop in the volume of sludge in the F2 while the sludge volume in the other two ponds have continued to increase.

	Nov-12	Jun-14	Nov-15	Nov-17	Change 2015 to 2017	Change 2012 to 2017
F1	49450	52340	51930	55260	6%	12%
F2	64900	66240	71220	70050	-2%	8%
F3	46650	52900	51170	56400	10%	21%

Figure 6.12 Change in volume of sludge in ponds

7.14 Due to the variability in sludge survey results it is recommended that a follow up survey be programmed for November 2019.

8 Contract 3619: Biosolids Operation

8.1 The 12 month rolling average of biosolids sprayed has decreased to 29,600m3 following increases in annual biosolid volumes to well above 32,000m3 per annum since the 2010 treatment plant upgrade.

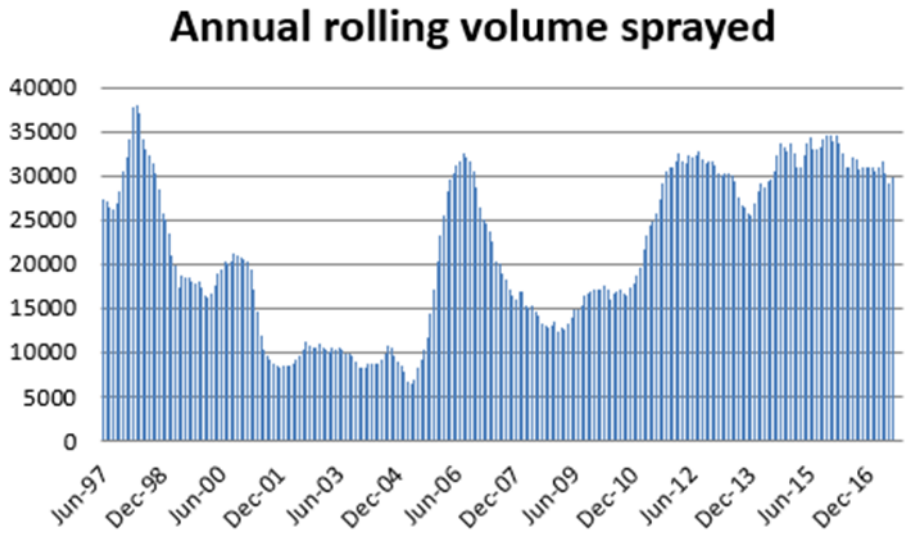


Figure 5.2 Volume of biosolids applied

9 Accel-o-FaC Evaluation of Performance

9.1 Wind generated mixers were installed in one of the facultative ponds at Bell Island to trial the effectiveness of these mixers to replace the existing mixers used at Bell Island.

9.2 The proposition was made that these mixers will improve the anaerobic and facultative processes in the ponds through improved mixing. The introduction of these mixers would improve wastewater and sludge stabilisation in the ponds.

9.3 Monitoring has shown that the loads to the three facultative ponds are not shared equally.

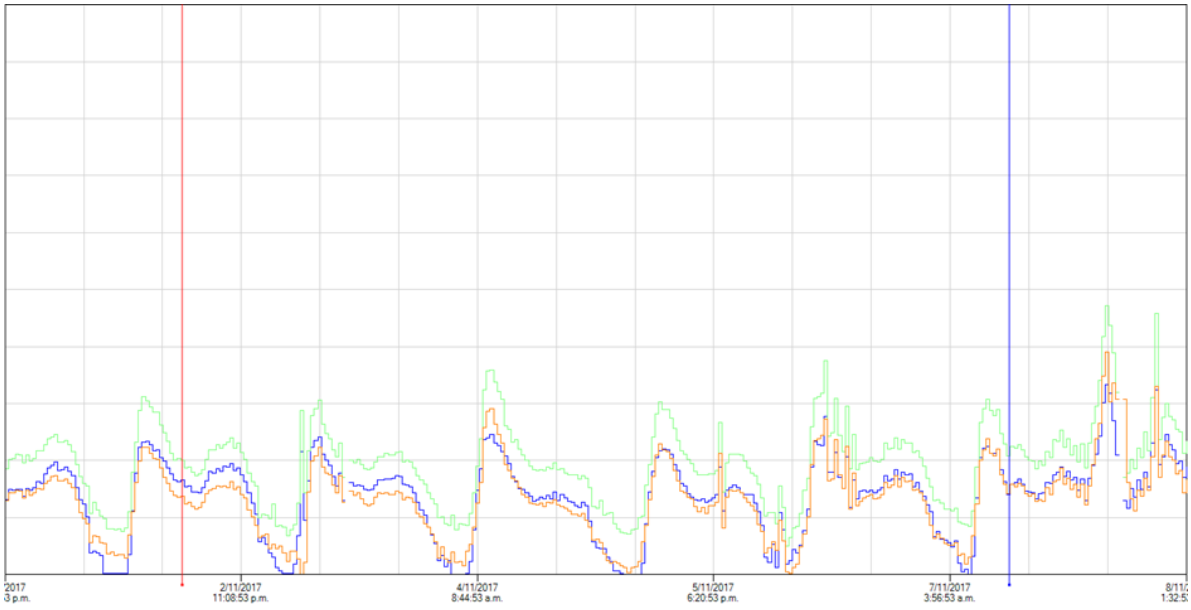


Figure 6.3 Flow and load to facultative ponds (F1 – Blue, F2 green and F3 red)

9.4 The nine new wind powered mixers have been in place in F2 since April 2017, with no adverse effects observed.

9.5 Assessing the relative quality of effluent discharged from the facultative ponds is complicated by the fact that the ponds are not subject to the same load and also by the effects of sludge on the hydraulic capacity of the individual ponds.

9.5.1 It is known that F2 receives higher loads and has been shown to contain more sludge than the other two ponds during previous sludge surveys.

9.5.2 During the period following the installation of the mixers the loads to F1 and F3 needed to be adjusted to ensure that the health of these two ponds are maintained.

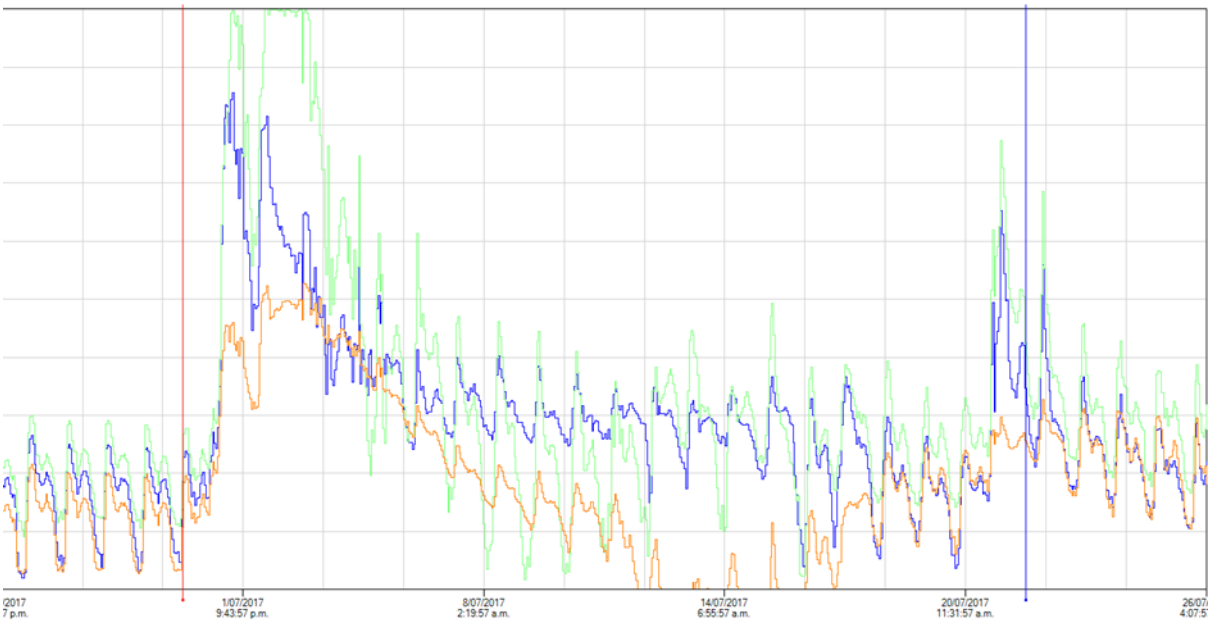


Figure 6.5.2: Typical variances in pond loading

9.6 Changes in residual dissolved oxygen levels and pond temperatures suggest that pond F2 is reacting differently from the other two ponds.

9.7 A review of the performance of the ponds appears to show that the discharge quality from F2 has improved. (The pond parameters measured are attached as attachment 1).

9.8 Observations have confirmed that residual dissolved oxygen levels in the water column have improved and will continue to meet odour management objectives.

9.9 The sludge survey carried out on 30th October 2017 show that the volume of and depth of sludge in Facultative pond F2 have decreased since the previous sludge survey carried out in 2015.

9.10 It is my conclusion that test results have confirmed that the introduction of Accel-o-Fac mixers have shown improvements in quality of effluent and sludge stabilisation

9.11 The improvements observed in the ponds provide the opportunity to extend the period over which the effectiveness of the new mixers can be evaluated without the risk of process failure due to a decrease in hydraulic capacity in the ponds to treat effluent. It is therefore

advisable to review the performance of the ponds again in March and/or June 2018 before final decisions are made regarding replacing the mechanical mixers in the other two facultative ponds.

10 Recommendation

10.1 That the NRSBU release the second instalment for the installation of the mixer in F2 to Gurney Environmental.

10.2 And that a further report be prepared that will allow the Board to consider the implementation of similar mixing systems in the other two facultative ponds.

11 Key Performance Indicators

11.1 The outcomes of key performance indicators for the 3 month period to 31 October 2017.

GREEN Low Risk
ORANGE Medium Risk
RED High Risk

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

12 Compliance Outcome

12.1 The compliance outcome for the 12 months to 31 October 2017 are outline in the following table.

i)	**Resource Consent Compliance (rolling 12 month record)**
	➢ Discharge to Estuary Permit — Achieved. ➢ Aberrational discharges (Consent for Aberrational Discharges within Nelson City Council area is being sought at present) — No overflows during the past 12 months. ➢ 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**
	In past three months: ➢ Four call outs were recorded. • Milliscreen faulted and was reset. • The secondary clarifier faulted and required repairs to the gear box. • The system alarm faulted and was reset. • Two pumps at the Beach Road pump station faulted and was reset. (Power spike?) • Primary sludge transfer pipeline blockage.
	➢ Response within 30 minutes. Achieved.

13 Review of Action Plan Implementation – 2017 assessment Management Plan and 2017/2018 Business Plan

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

IP	Business Plan Action	Target Date	Completion Date	Comments
1/17	Consolidate all natural disaster information and review 3 yearly.	Jun 2019		
2/17	Renewal of effluent discharge permits.	Feb 2018		On track.
3/17	Develop sludge removal programme.	Jun 2018		On track.
4/17	Review long term plan	Dec 2019		
5/17	Review AMP	Aug 2020		
6/17	Investigate use of gravity belt thickener for use to thicken secondary sludge.	Jun 2020		
BP2	Review secondary sludge separation.	Jun 2018		Depends on completion of treatment plant model.
BP10	Construction second sludge storage tank.	Jun 2018		Delayed from June 2016.
BP11	Develop sludge removal programme.	May 2018		Subject to review of the performance of the improvement of mixing in F2.
BP13	Renewal of effluent discharge permit	Aug 2018		On schedule.
AP	**AMP Action**	**Target Date**	**Completion Date**	**Comments**
1	Annual customer survey.	Jun 2018		
2	Business Continuity Plan review.	Mar 2018		
3	Consider benefits of succession planning and how it might be implemented once governance issues (TDC and NCC) have been resolved.	Mar 2018		
4	A programme of regular pipe inspections of (high)	Sep 2018		

IP	Business Plan Action	Target Date	Completion Date	Comments
	risk areas to be developed.			
5	Monitor sludge levels in ponds and ascertain long term removal and disposal requirements.	Mar 2018		
6	The existing maintenance schedules and procedures, quality/procedure, decision making process, contingency and operation and maintenance manuals are to be formalised, updated where required.	Sep 2018		
7	Consolidate all known natural disaster events information for consideration by the board. (lifelines)	Dec 2018		
8	All condition and performance data shown in INFOR	Jan 2019		
9	Review of security required at all facilities.	Dec 2018		
10	Biosolids application permits renewal.	June 2020		

14 Financial Status

14.1 Attachment 2 is:

- NRSBU Financial Report for the period up to 31st October 2017
- NRSBU Balance Sheet as at 31st October 2017

14.2 Operational Expenditure is tracking to budget.

14.2.1 Electricity costs will decrease over the next few month when we take the activated sludge process off line.

14.2.2 Electricity costs for pump stations are tracking higher than budget due to increases in use of storm pumps following periods of wet weather experienced during the first part of the financial year.

14.2.3 The cost of biosolids spraying are tracking well ahead of budget and this budget is projected to be exceeded.

14.2.4 The contract disbursements for the operation and maintenance contract is projected to stay within budget.

14.2.5 Re-active maintenance and pro-active maintenance costs are trending above budget and we will need to take care with discretionary pro-active works to ensure that we stay within budget for the year.

14.2.6 This will result in delaying discretionary pro-active maintenance work until later in the financial year. (Additional work on diffuser pipeline etc)

14.3 Capital and renewal work.

14.3.1 Pond improvements through installation of curtains were deferred from 2016/17 to 2017/18. The improvements in M5 is expected to be completed within budget by December 2017. Work on the improvements for M1 will be delayed until the effectiveness of the improvements in M5 has been confirmed.

14.3.2 The work to develop the strategy for the desluding of the ponds is expected to be completed before the end of January 2018.

14.3.3 Work on the project to install emergency power at the inlet will be initiated following the decision regarding development of volunteer consent conditions for the Bell Island discharge.

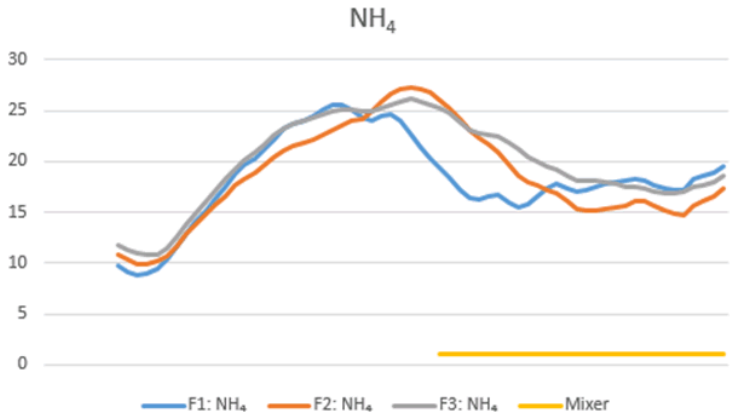
15 NRSBU Draft Business Plan 2018/2019

15.1 Attachment 3 is a copy of our Draft Business plan for the next financial year. We need to work through this draft and then with any changes – resolve to forward it to the two Councils.

16 NRSBU Status Report

16.1 Attachment 4 is a table that keeps track of key resolutions of the Board and is a handy quick reference point.

17 Attachments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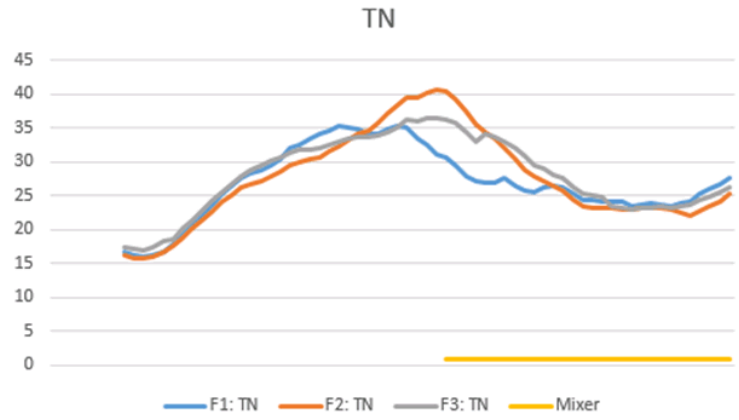
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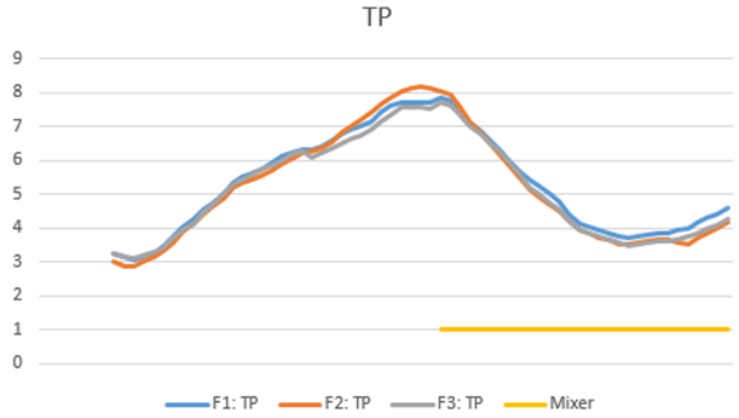
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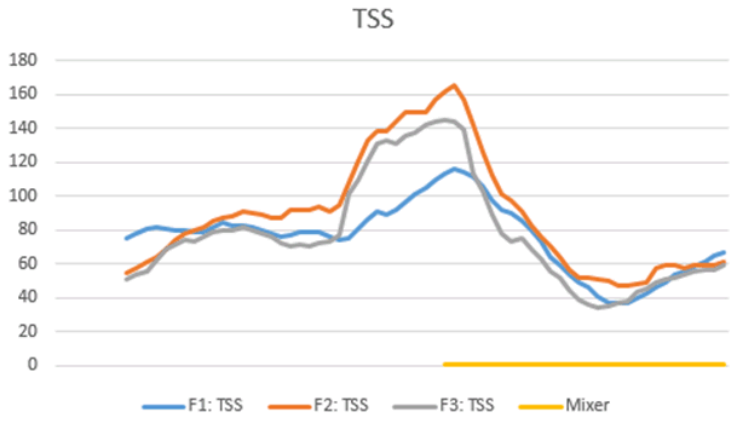
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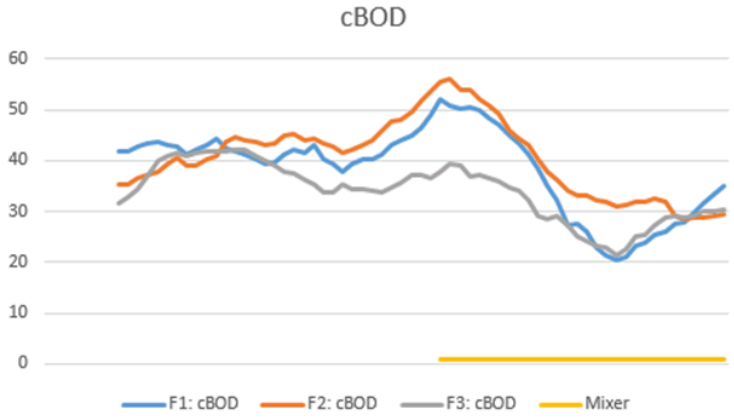
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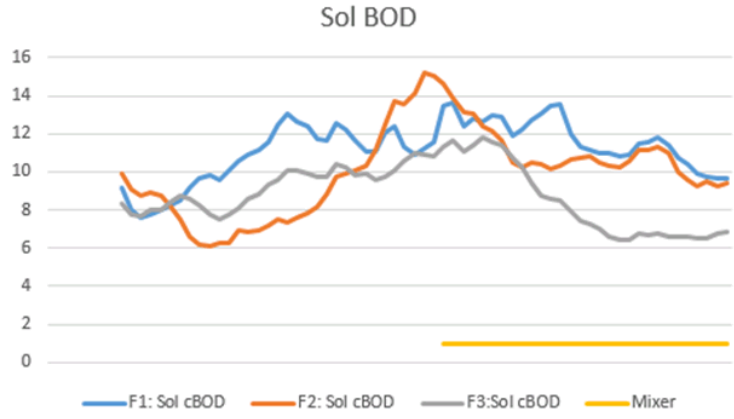
Sol BOD
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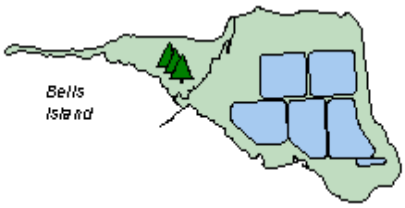
F3:Sol cBOD
Mixer

Nelson Regional Sewerage Business Unit
Financial Report
Income Account for the period to 31st October 2017

	Actual Month	Budget Month	Actual YTD	% YTD	% Year	2017/18 Budget YTD	2017/18 Budget Annual	YTD Variation
Income								
Contributions Fixed	367,155	344,167	1,468,619	107	36	1,376,700	4,130,000	91,919
Contributions Variable	226,471	258,750	1,305,997	126	42	1,035,000	3,105,000	270,997
Other Recoveries	13,489	12,000	58,629	122	41	48,000	144,000	10,629
Interest	2	-	9			-	-	9
Forestry Income	-	-	-			-	-	0
Revaluation Derivative Instruments	-		-					
Vested Assets	-		-			-		
Total Income	**607,117**	**614,917**	**2,833,254**	115	38	**2,459,700**	**7,379,000**	**373,554**
Less Expenses								
Management	13,374	19,175	72,091	94	31	76,700	230,104	4,609
Electricity	63,323	61,543	287,987	117	39	246,200	738,500	(41,787)
Contract Maintenance	47,250	64,776	218,659	84	28	259,100	777,321	40,441
Reactive and Proactive Maintenance	59,261	40,294	260,286	161	54	161,200	483,500	(99,086)
Monitoring	13,824	15,631	60,369	97	32	62,500	187,560	2,131
Consultancy	5,162	6,250	17,649	71	24	25,000	75,000	7,351
Insurance	4,008	5,000	26,147	131	44	20,000	60,000	(6,147)
Sundry	3,263	5,564	39,365	177	59	22,300	66,770	(17,065)
Biosolids Disposal	64,653	52,514	236,847	113	38	210,100	630,168	(26,747)
Operating & Maintenance Expenses	**274,118**	**270,747**	**1,219,400**	**113**	**38**	**1,083,100**	**3,248,923**	**(136,300)**
Financial	45,802	48,083	180,406	94	31	192,300	577,000	11,894
Depreciation	158,530	149,583	634,119	106	35	598,300	1,795,000	(35,819)
Total Expenses	**478,450**	**468,413**	**2,033,925**	109	36	**1,873,700**	**5,620,923**	**- 160,225**
Net Income before Rebate	**128,667**	**146,504**	**799,329**	136	45	**586,000**	**1,758,077**	**213,329**
Owners rebate	**0**		**0**					
Net Income after rebate	**128,667**	**146,504**	**799,329**			**586,000**	**1,758,077**	**213,329**
Capital Expenditure								
Renewals	71,521	93,900	217,692			375,670	1,127,000	
New Capital Expenditure	18,270	102,900	142,364			411,670	1,235,000	
Total Capital Expenditure	**89,792**	**196,800**	**360,056**			**787,340**	**2,362,000**	

Nelson Regional Sewerage Business Unit			
Balance Sheet as at	31st October 2017		
	Current	Last Month	June 2017
Equity			
Opening Equity (July)	46,966,781	46,966,781	39,685,993
Plus Net Income YTD	799,329	670,662	(25,627)
Plus Revaluation	0	0	7,306,415
Closing Equity	47,766,110	47,637,443	46,966,781
Contingency Reserve	100,000	100,000	100,000
	47,866,110	**47,737,443**	**47,066,781**
Which was Invested as follows -			
Current Assets			
Bank	28,174	28,171	21,345
Debtors	45,360	65,006	354,795
NCC Current account	330,824	23,670	0
Total Current Assets	**404,358**	**116,848**	**376,139**
Fixed Assets	**62,703,294**	**62,772,032**	**62,977,357**
Current Liabilities			
Creditors	(111,105)	(21,000)	(16,700)
NCC Loan	(400,000)	(400,000)	(450,000)
TDC Current Account	(730,437)	(730,437)	(490,010)
NCC Current account	0	0	(1,330,005)
Total Current Liabilities	**(1,241,542)**	**(1,151,437)**	**(2,286,715)**
Term Liabilities	**(14,000,000)**	**(14,000,000)**	**(14,000,000)**
Derivative Financial Instruments	**0**	**0**	**0**
	47,866,110	**47,737,443**	**47,066,781**

Nelson Regional Sewerage Business Unit



BUSINESS PLAN

2018/19

NRSBU BUSINESS PLAN 2018/19

APPENDICES

Prepared by: Johan Thiart
Senior Asset Engineer – Solid Waste

Reviewed by: Jeff Robinson
General Manager

Nelson Regional Sewerage Business Unit

Approved:

Cover photograph: Bell Island

1. PURPOSE

The purpose of the Nelson Regional Sewerage Business Unit Business Plan 2018/19 is to detail management goals and objectives to not only deliver the wastewater collection and treatment services to the region but to also improve the effectiveness and efficiency in the delivery of those services.

2. MEMORANDUM OF UNDERSTANDING REQUIREMENTS

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

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

3. INTRODUCTION

This Business Plan 2018/19 outlines the projects and initiatives to be implemented during the year. It also outlines the associated funding required and the details on the performance targets and measures.

The Business Plan is aligned with the NRSBU Strategic Plan and the NRSBU Wastewater Asset Management Plan 2017. It incorporates the business objectives and performance targets (Section 4) and the 3 year financial forecasts (Section 6). The following key pieces of information from these other documents are included in the appendices of this business plan;

Appendix A – Board Activity Schedule;

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

Appendix C - Internal business improvement plan;

Appendix D - The 10 year financial plan;

Appendix E - Schematic layout of the NRSBU operations.

4. MISSION STATEMENT

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

5. STRATEGIC GOALS

The NRSBU aspire to achieve the following goals:

- Wastewater reticulation, treatment and disposal services meet customers' long term needs.
- The costs of wastewater reticulation, treatment and disposal services are minimised.

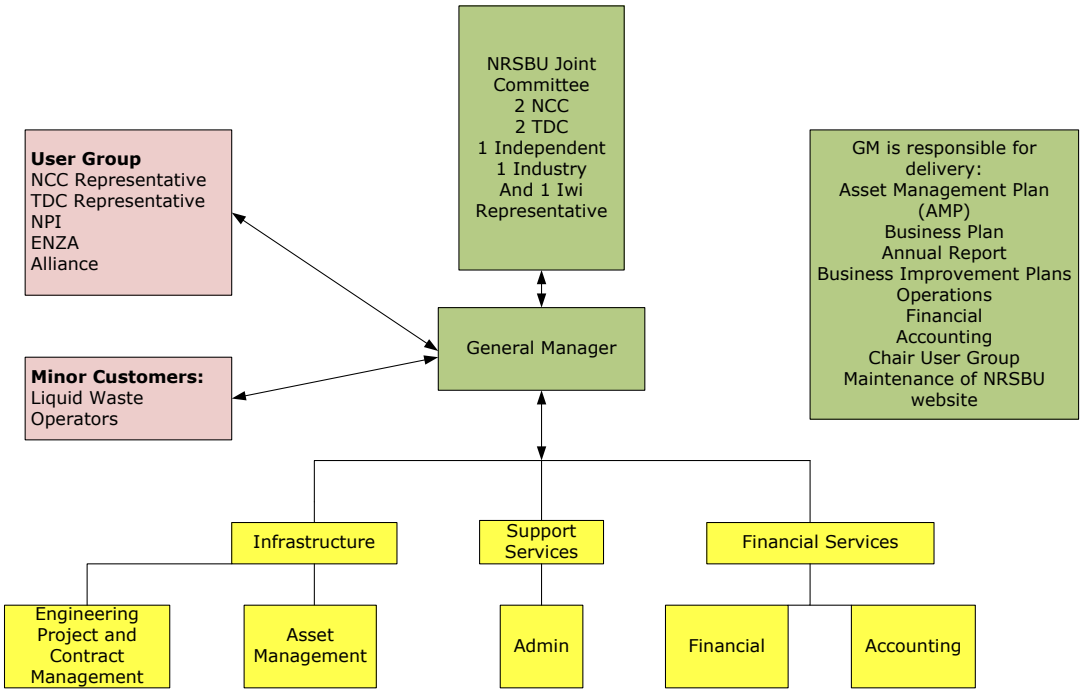
- Risks associated with the services provided are identified and mitigated to a level agreed with customers and owners.
- We engage the right people with the right skills and experience
- NRSBU operates sustainably and endeavours to remedy or mitigate any identified adverse environmental, social and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

The NRSBU functional activities are managed by the Nelson City Council and therefore the NRSBU functional activities shall comply with the requirements of the Nelson City Council Health and Safety Policy, and fully subscribe to the vision for a Zero Harm Culture.

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

6. NRSBU STRUCTURE AND BACKGROUND

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



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

Following the adoption of a new Strategic Plan in August 2013 the 2017 Wastewater Asset Management Plan was developed and adopted on 15 September 2017. A draft of the long term financial plan based on the Asset Management Plan was provided to Tasman District Council and Nelson City Engineers in July and October 2017 respectively to enable them to consolidate the NRSBU long term plan into their own strategic documents.

With the completion of significant upgrade programmes over the last few years the treatment plant now has adequate capacity to treat projected loads beyond 2025 without further significant capital investment. A review of the biosolids produced at the plant, as well as the capacity of the Radiata pine plantations on Bell Island and Rabbit Island to

receive biosolids, has demonstrated that the land available for the disposal of biosolids is also adequate for projected loads up to 2025.

7. BUSINESS OBJECTIVES AND PERFORMANCE MEASURES

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

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

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

Long Term Objectives	Key Performance Measures
Good relationships are maintained with all stakeholders including owners, iwi, customers, contractors, neighbours, and the wider community.	All complaints or objections are addressed promptly. All applications for resource consents are approved. Up to date information on activities and achievements are publically available.
All statutory obligations are met	
All statutory obligations are identified and met and are included in contracts with suppliers.	100% compliance with all statutory obligations.
All resource consent requirements are met.	100% compliance with all resource consents.

8. THREE YEAR RENEWAL EXPENDITURE FORECAST ($'000)

Renewal Plan ($,000)	Projected 2017/18	2018/19	2019/20	2020/21
Miscellaneous	20	20	20	20
Pump Stations and Rising Mains	50	85	67	42
Inlet, Aeration Basin, Clarifier and Ponds	172	188	318	190
Solids Handling	0	119	55	357
Rabbit Island	24	223	38	154
Roads	0	0	0	75
Consents	381	228	136	0
Total =	**647**	**635**	**1.049**	**1,014**

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

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

The major components that will be considered for renewal during 2018/19 are:

- PLC Control upgrade at activated sludge and sludge facilities;
- Renewal of ATAD aerator;
- Renewal of aeration basin aerator;
- Sealing of road;
- Renewal of sludge storage tank.

9. NRSBU Capital Upgrade Plan ($,000)

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

Year	Description of Projects	Estimated Costs
2018/19	Desludging oxidation ponds	1,520,000
	Treatment Plant Upgrade (Consent dependent)	2,500,000
2019/20	Modification Facultative Ponds	420,000
	Treatment Plant Upgrade (Consent dependent)	2,500,000
	Rabbit Island Biosolids Consent	240,000
	Regional Pipeline Upgrade	1,000,000
2020/21	Regional Pipeline Upgrade	6,500,000

10. Commentary on Upgrade Proposals for 2018/19;

Desludging of Ponds: The desludging will be carried out over two financial years. The project is conditional to the outcome of a review of the performance of mixer upgrade in one of the three facultative ponds

Treatment Plant upgrade is conditional to the outcome of the conditions of consent associated with the discharge consent that is currently being applied for.

Modification of ponds is conditional to the review of the performance of improvements made to the final maturation pond.

The consent for the application of biosolids at Rabbit Island expires 8 November 2020.

Regional Pipeline Upgrade: Conditional to a review of growth projections of wastewater generated in Nelson and Tasman.

FINANCIAL PLAN

Nelson Regional Sewerage Business Unit
Budget Summary for 2018 to 2021

	Projection	Budget		
	17/18	18/19	19/20	20/21
Income				
Contributors	7,533	7,633	7,947	8,266
Interest	0	0	0	0
Other Recoveries	174	174	174	174
Total Income	7,707	7,807	8,121	8,440
Expenditure				
Operations & Maintenance	3,226	3,283	3,290	3,197
Interest	563	619	777	1,004
Insurance	60	60	60	60
Depreciation	1,923	1,870	1,891	1,998
Total Operating Cost	5,772	5,832	6,018	6,259
Surplus/Deficit	1,935	1,975	2,103	2,181
Use of Funds				
Loan Repayment	1,276	1,235	1,256	1,455
Renewals	647	635	635	543
Owners Distribution	1,935	1,975	2,103	2,181
Upgrades	1,027	4,020	4,160	6,500
	4,885	7,865	8,154	10,679
Sources of Funds				
Surplus/Deficit	1,935	1,975	2,103	2,181
Depreciation	1,923	1,870	1,891	1,998
New Loans	1,027	4,020	4,160	6,500
	4,885	7,865	8,154	10,679

LONG TERM FINANCIAL STRATEGY

The long term financial strategy (Appendix D) is a complete picture of the operations and maintenance costs and capital projects to be undertaken over the next 10 years. This strategy is based on the Nelson Regional Sewerage Business Unit Asset Management Plan 2017.

APPENDIX A

NELSON REGIONAL SEWERAGE BUSINESS UNIT BOARD ACTIVITY SCHEDULE 2015-16

Date	Activity	Papers required
By 31 August 2018	Review draft Annual Report and Financial Statement.	Draft annual report and financial statement.
By 30 September 2018	Deliver annual financial statement to Councils.	Financial Statement.
By 15 December 2018	Review board planning/meeting timetable. Adopt draft business plan for presentation to Tasman District Council and Nelson City Council. Review and update Interests Register. Adopt business continuity plan.	Planning/meeting timetable. Business Plan. Interests Register. Draft business continuity plan.
By 31 March 2018	Present Annual Report and Business Plan to Tasman District Council and Nelson City Council.	Annual Report and Business Plan.

Date	Activity	Papers required
By 30 June 2018	Review board performance	Checklist for board effectiveness.
	Review governance policy	Governance Policy
	Review Demand Management Plan	Draft Demand Management Plan.
	Receive report on Contingency Plan review by customer representatives.	Report on Contingency Plan review by customer representatives.
	Receive report on Risk Management review by customer representatives.	Report on Risk Management review by customer representatives.
	Review customer satisfaction survey results	Customer survey report.
	Annual review of Strategic Plan	Strategic plan.
	Adopt Energy Conservation Plan	Energy Conservation Programme.
	Review Audit Management Report	

APPENDIX B

LEVELS OF SERVICE

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

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

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

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

Appendix C

BUSINESS IMPROVEMENT PLAN

This section describes initiatives to improve the efficiency and effectiveness of the Business Unit and is based on the Nelson Regional Sewerage Business Unit Strategic Plan and referenced to the 2017 Wastewater Asset Management Plan.

IP	Description	Resource Requirements	Progress
IP-1	Consolidate all natural disaster information and review 3 yearly.	In-house	On-going.
IP-2	Renewal of effluent discharge permits.	In-house	On-going.
IP-3	Develop sludge removal programme.	In-house	On-going.
IP-4	Review long term plan.	In-house	2018-2020.
IP-5	Review AMP.	In house.	2018-2020.
IP-6	Investigate use of gravity belt thickener for use to thicken secondary sludge..	In-house.	2018/2021.

APPENDIX D

10 YEAR PLANS

OPERATIONS, MAINTENANCE AND CAPITAL EXPENDITURE

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

	Proj	1	2	3	4	5	6	7	8	9	10
	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28
Total Management	221	225	225	225	225	225	225	225	225	225	225
Total Financial	563	619	777	1004	1297	1465	1437	1412	1405	1389	1446
Depreciation	1923	1870	1891	1998	2128	2193	2193	2200	2215	2230	2237
Total Electricity	820	820	800	800	800	800	800	800	800	800	800
TP Maintenance	938	941	941	935	935	935	935	935	935	935	935
PS & RM Maintenance	245	244	244	244	244	244	244	244	244	244	244
Total Monitoring	184	206	254	184	256	184	184	186	244	254	186
Consultancy	75	75	75	75	75	50	50	50	50	50	50
Insurance	60	60	60	60	60	60	60	60	60	60	60
Rates & Rental	61	61	61	61	61	61	61	61	61	61	61
Water Charges	22	44	44	44	44	44	44	44	44	44	44
Forestry	42	42	20	4	4	4	4	4	4	4	4
Biosolids Disposal	630	623	623	623	623	623	623	623	623	623	623
Telephone/Computers	3	3	3	3	3	3	3	3	3	3	3
Total Expenses	**5787**	**5832**	**6018**	**6259**	**6754**	**6890**	**6862**	**6846**	**6912**	**6921**	**6917**

NELSON REGIONAL SEWERAGE BUSINESS UNIT											
10 Year Renewal Plan ($,000)	**Proj**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
	17/18	**18/19**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**27/28**
Miscellaneous	20	20	20	20	20	20	20	20	20	20	20
Pump Stations and Rising Mains	50	85	67	42	218	168	228	85	344	518	31
Inlet, Aeration Basin, Clarifier and Ponds	172	188	318	190	259	154	179	193	29	697	250
Solids Handling		119	55	63	336	52		8	15	153	105
Rabbit Island	24	223	38	154	47	186	67	233	7	798	
Roads				75		138					35
Consents	381		136								
Total =	647	635	635	543	881	717	494	539	415	2,187	441

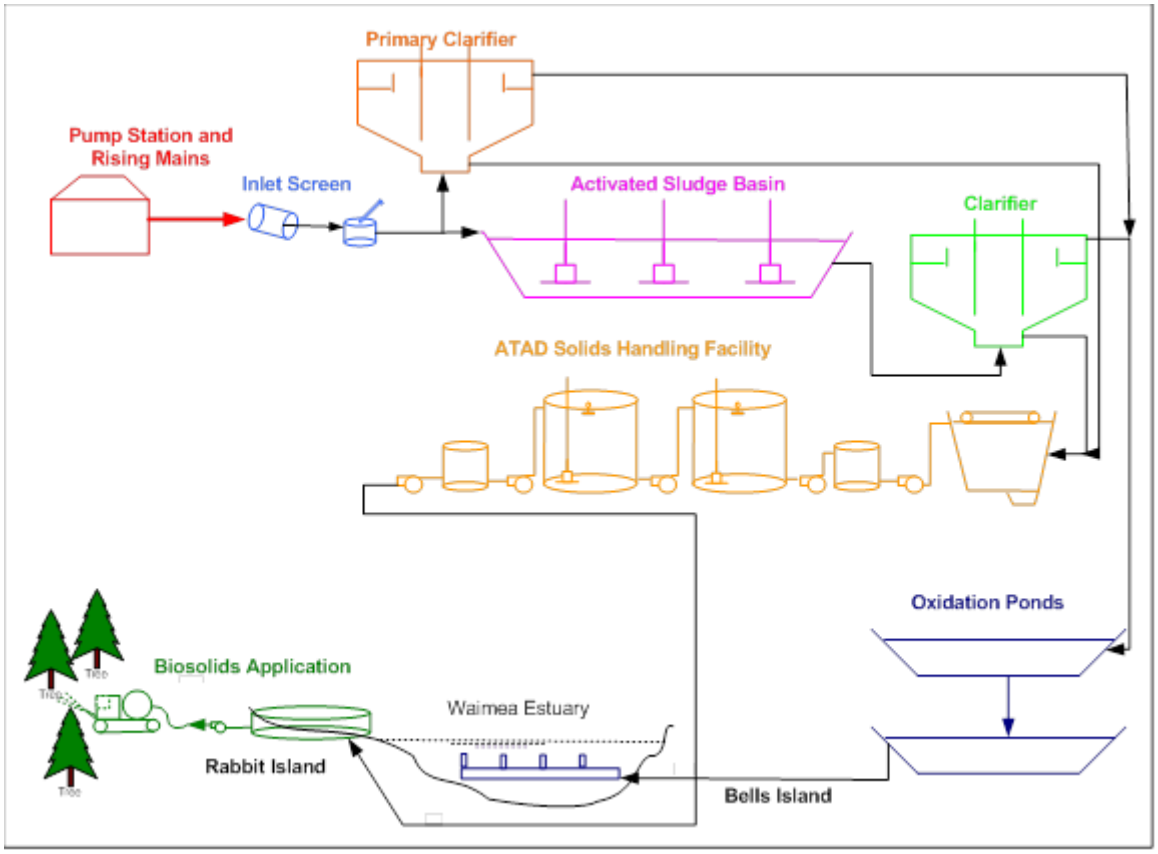
Note: More detailed review of expected life of solids handling facilities and electrical control and equipment are likely to affect the renewal programme.

The renewal programme beyond tear 1 is indicative total cost only. Specific renewal items will be subject to condition and lifecycle assessment leading up to the development of the 2018/19 Business Plan.

Upgrade programme		
Year	**Description of Projects**	**Estimated Costs**
2018/19	Desludging oxidation ponds	1,520,000
	Treatment Plant and Network Upgrade (Bell Island Discharge and Aberrational Discharge Consent dependent)	2,500,000
2019/20	Modification Facultative Pond (Consent dependent)	420,000
	Treatment Plant Upgrade (Consent dependent)	2,500,000
	Regional Pipeline Upgrade (Demand dependent)	1,000,000
	Rabbit Island Biosolids Consent Application	240,000
2020/21	Regional Pipeline Upgrade (Demand dependent)	6,500,000
2021/22	Regional Pipeline Upgrade (Demand dependent)	6,500,000
2024/25	Disposal of dried sludge	700,000
2025/26	Songer street upgrade (Demand dependent)	100,000
	Disposal of dried sludge	700,000
2026/27	Disposal of dried sludge	700,000
2030/31	Activated sludge management (2nd Secondary clarifier)	2,800,000

APPENDIX E

BELL ISLAND TREATMENT PLANT SCHEMATIC



NRSBU STATUS REPORT - 8 December 2017

No	Meeting Date	Document Number	Report Date	Report Title / Item Title	Officer	Resolution or Action or Issue	Status
a	30/06/17	A1971112	30/06/17	Minutes	R Kirby	General Manager to request TDC to reconsider their contribution to the cost of the SCION biosolids trial site study and reinfi-orce thbe economic benefits that will accrue to TDC.	Continue.
b	10/03/17	R7164	10/03/17	GM report		Treated wastewater recirculation.	The trial was completed in April 2017 and the outcome is being reviewed and will be reported on in a future GM report.
c	24/06/16	M1761	24/06/16	Minutes	J Thiart	Review of Trade Waste Agreement Amendments.	Signed agreements received from TDC and Alliance. Reminders sent to other contributors.
d	24/06/16	M1761	24/06/16	Minutes	J Thiart	Cawthron assessment of the capacity of Bell Island for the disposal of sludge to land.	Project defered until we have evaluated the outcome of the Accel-o-Fac upgrade of the ponds.
1	15/09/17	A1842853	15/09/17	Minutes	J Robinson	That the Nelson Regional Sewerage Business Unit Committee adopts the draft Annual Report to be forwarded to Nelson City Council and Tasman District Council for consideration.	Report to be sent to NCC and TDC by 31 December 2017 once Chair and GM has signed the report.
2	15/09/17	A1842853	15/09/17	Minutes	J Thiart	That the NRSBU Asset Management Plan be addopted, as amended.	
3	10/03/17	R7164	10/03/17	GM report		Approves expenditure up to $29,000 in the 2017/18 year for the initial eradication treatment of Argentine Ants at Bell Island, scheduled for November 2017.	Following initial baiting in March 2017 a follow up baiting exercise was completed in November 2017. An eveluation of the efficacy of the programme will be carried out and reported to the Board in March 2018.
4	9/12/16	M2249	9/12/16	Minutes	J Thiart	Requests that the outcome of the monitoring be reported back to the NRSBU for approval prior to the remaining 50% payment being made to Gurney Environmental.	Review of the performance of the mixers are reported in the General Managers report.
5	19/06/15	M1272	19/06/15	General Manager's report		THAT NRSBU contribute an amount of $20,000 for the completion of the research by SCION payable on receipt of the final environmental report; AND THAT NRSBU contribute an amount of $10,000 payable on receipt for the final harvest report.	Awaiting report from SCION
6	22/06/12	1307226	22/06/12	Bell Island Energy Audit	J Thiart	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.	To be included in AMP. Contractor instructed to investigate the cost of integrating the power supply to the ponds and the irrigation pump station.