

NRSBU | Nelson Regional **Sewerage** Business Unit

Business Plan 2023/24



1080325921-246

NRSBU Business Plan 2023-24

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with input from

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Cover Image Bell Island WWTP inlet area, including odour treatment upgrade and MBR plant

*Nelson Regional Sewerage Business Unit Business Plan
2023/24 Rev 0*

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1. PURPOSE

The purpose of the Nelson Regional Sewerage Business Unit Business Plan 2023/24 is to summarise management goals and objectives to deliver wastewater collection and treatment services to the region; and to 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 31 December each year supply to the Councils (Nelson City and Tasman District Councils) a copy of its Business Plan. The Business Plan outlines 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) commenced on 1 July 2015 and shall terminate on 30 June 2025. The MoU was updated in March 2019.

3. INTRODUCTION

This Business Plan 2023/24 outlines the projects and initiatives to be implemented during the year. It also outlines the associated funding required and the details of the performance targets and measures.

The Business Plan is aligned with the NRSBU Strategic Plan and the NRSBU Activity Management Plan 2021-2031. It includes business objectives and performance targets (Section 7) and the three-year financial renewal forecasts (Section 8) and the three-year capital plan (Section 9). The following key pieces of information from those other documents are included in the appendices of this business plan:

APPENDIX B: Business Improvement Plan

APPENDIX C: Bell Island Treatment Schematic

APPENDIX D: Focus on Community and Environmental Benefits

APPENDIX E: Draft 10 Year Capital Expenditure Diagram

4. MISSION STATEMENT

The NRSBU's mission statement is:

Resilient, reliable, and effective infrastructure that supports and protects our community and environment.

Area	Goal
Our approach	Implement and operate infrastructure considering the needs of our community. Our priorities for this are protection of public health, the environment, and cultural values.
Our Vision/Ambition/Aspiration	We will work towards the beneficial reuse of resources.
Our conduct	We will undertake our activities transparently, fairly, respectfully, in a timely manner and we will provide regional infrastructure leadership.

5. STRATEGIC GOALS AND PERFORMANCE OBJECTIVES

The NRSBU aspires to achieve the following goals:

Strategic Goal	Objective (This is what it looks like)	Level of Service (This is how we do it)
We will implement and operate infrastructure considering the needs of our community. Our priorities for this are protection of public health, the environment, and cultural values.	Containment and conveyance that is resilient and minimises adverse impacts on the health of the environment and community	We have sufficient capacity in our network to cope with peak flows
		We are resilient to mechanical and electrical failures and natural hazards
		We can readily maintain the network
	Resilient wastewater treatment that minimises the impact on the environment and community	The treatment plant can reliably accept (N+1 for critical assets) all peak flows from the network
		The treatment plant can fully treat all dry weather flows
		The treatment plant does not create odour issues for the community
		Effluent Quality meets or exceeds required discharge requirements
	Long term vision that considers the future needs of the community	Our ongoing business is safeguarded through engagement with council planning processes
		We have long term plans for our activities and their impacts
		Have systems in place for the ongoing monitoring and reporting of emissions
Alternative methods of biosolids disposal that protect public health and the environment and are sensitive to cultural values	Have a backstop for issues with biosolids disposal	
We will work towards the beneficial reuse of resources	Use of ongoing improvement processes to identify, implement, and operate feasible biosolids reuse	Treatment to maintain 100% reuse of biosolids
		Increase reuse value
		Maintain 100% diversion of biosolids from disposal to landfill
	Identified implement and operate feasible systems and infrastructure for the reuse of wastewater	We minimise the amount of effluent we discharge to water

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.

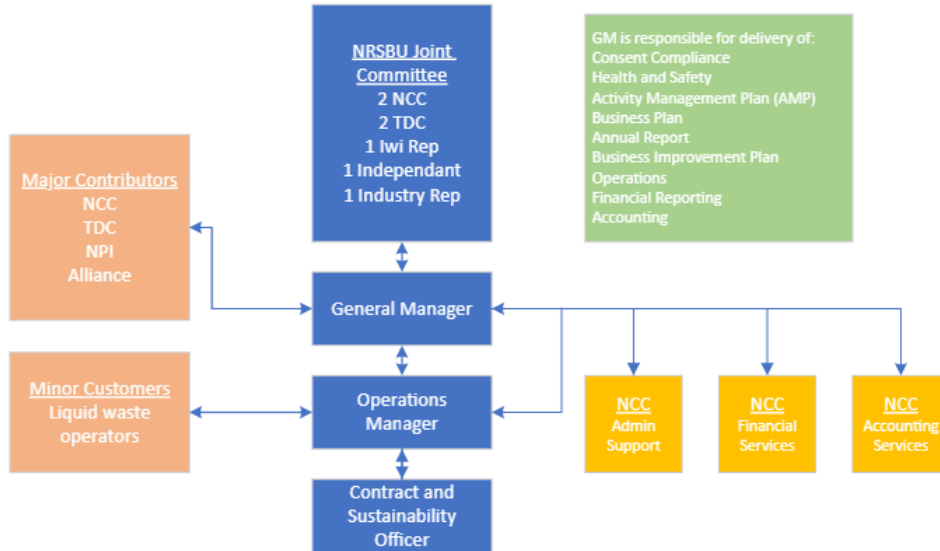
All strategic goals are important and no one goal will be pursued at the expense of another.

It is important to note that discussion is occurring nationally regarding the delivery of water services in New Zealand. This discussion includes the implementation of national discharge standards for wastewater treatment facilities. This work could have a significant influence on NRSBU, at this time NRSBU is unable to identify the outcome of this work and therefore will continue with Business as Usual.

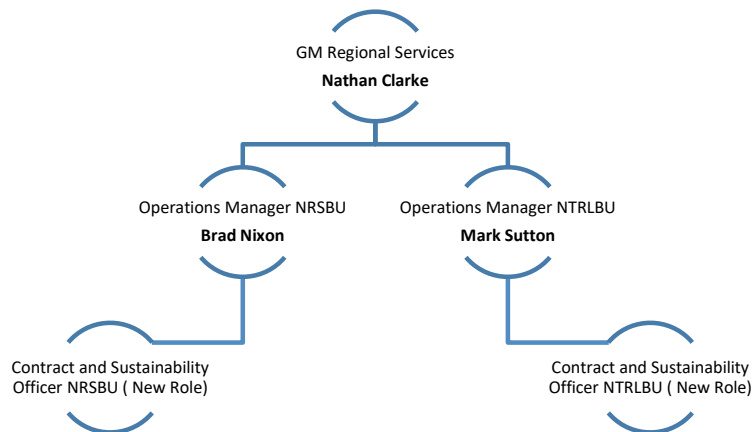
It is necessary for NRSBU to maintain an understanding of these issues so that an appropriate response can be made if required.

6. NRSBU STRUCTURE

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



A revised structure has been developed for the Regional Services team which is in the process of being approved. This structure has a dedicated Operations Manager for each Business Unit, and one additional staff member for each business unit. This revised structure adds some additional capacity, removes the Activity Manager roles as a dedicated role, and sets the business units up for the transition to three waters to allow capacity in both NRSBU and NTRLBU once three waters transfer occurs. The revised structure proposed is shown below.



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

This business plan relates to the third year of the NRSBU Activity Management Plan 2021-2031 adopted by NCC and TDC during June 2021.

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 Activity Management Plan. Performance will be reported quarterly to the Board and annually to the shareholding councils.

Performance Measure (This is how we know we're doing it)	Target
Number of overflows per year (all networks) due to NRSBU network capacity constraints, or mechanical or electrical failures.	Zero
Number of pump stations with redundant pumps and power supply.	All by June 2023**
Pump stations are to a level 3 importance level standard.	All by 2023
Number of pump stations where able to carry out routine PS maintenance works while managing ADWF.	All by 2031
Number of times PWWF flows exceed inlet works capacity.	Zero by 2031
Number of times diurnal flows bypass the mechanical system annually OR Treatment capacity of mechanical plant.	Zero OR 500L/s by 2029
Number of odour complaint events annually.	Zero by 2025
Pond free water above sludge layer.	>1m in all ponds by June 2023
Chemical parameters comply with consents for discharge to water when discharge occurs.	Ongoing consent compliance for all parameters
Effluent quality appropriate for safe and sustainable use with land irrigation systems.	Pathogens, Nitrogen defined for land application requirements by 2023
Obtain reuse consents for appropriate land areas for Reuse Water.	Demonstrated quality performance and consents in place for reuse for dust suppression or one additional irrigation system by June 2024.
We have up to date plans as follows: Master plan (50 years focus) Activity Plan (10 years Focus) Business plan (1 year focus, but also with tentative three-year actions)	Master plan developed by June 2023 Activity and Business Plans are reviewed annually
The number of alternate methods/options for biosolids disposal.	One by 2035
Increase in quality of biosolids.	Biosolids Reuse Development Plan Draft by June 2023
Percentage of biosolids that is reused.	100%
Annual volume of biosolids sold.	Biosolids Reuse Development Plan Draft by June 2023
Proportion of biosolids to land or reuse/sale	100%
Number of days effluent is discharged to water in summer period (1 Dec to 31 March).	Draft Wastewater reuse plan developed by June 2023, with a goal to reaching zero by 2035
Volume of high-value water-reuse we achieve.	Draft Wastewater reuse plan developed by June 2023
Amount of total flow we can divert from discharge to water during summer period.	At least 75 th percentile by 2040

** Redundant pumps may include Duty / Assist with a Shelf Spare until pumpstation upgrades are complete

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

Renewal Plan (\$,000)	2022/23	2023/24	2024/25	2025/26
Pump Stations and Rising Mains	753	999	255	348
Inlet, Aeration Basin, Clarifier and Ponds	1,648	327	263	263
Solids Handling and Biosolids pipelines.	652	486	250	1,273
ATAD rust proofing			30	
Rabbit Island	110	55	25	
Fittal Street Septage Facility			200	
Facilities and Roads	347	68	112	74
Wet Weather Discharge Pump			95	
General	136	158	190	190
Total	3,646	2,093	1,308	2,148

Note: 2022/23 renewals budget includes carryover from 2021/22. 2023/24 renewals budgets do not include carry overs from the 2022/2023 financial year

The renewal programme of the 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 a review of remaining useful life of assets.

Condition assessment reports may be commissioned where additional information is required to ensure optimal spend on renewals.

One key renewal item that is currently unquantified is any repair works arising following the inspection work in 22/23 for the existing 600mm diameter concrete pipe between Monaco and Bell Island. This work may necessitate reprioritisation of the Capital and Renewal plans if significant repairs are required.

General items are at the discretion of the General Manager.

9. THREE YEAR CAPITAL UPGRADE PLAN

The following table outlines the capital upgrades proposed over the next three years.

Project	22/23	23/24	24/25	25/26
Pumping station overflow screens and monitoring systems	538	250		
Regional pipeline capacity upgrades	5,110	4,648		
Pump and discharge pipework upgrades at pump stations	2,050	672		
Strategic review and seismic strengthening of pump stations	50	56		112
Flood protection of pump stations	86			
Storage at pumping stations		56	56	123
Pump Stations - land purchase for storage/adaptation			1,680	
Improvements required following resource consent for treated effluent discharge	-442	1,000	500	
New operator building and lab	213			
Rabbit Island biosolids consent	-198	250		
Carbon management system	21			
Aberrational Discharge consent	-107	150		
Duplicate grit trap at WWTP			56	560
Hydraulic capacity upgrades at WWTP		80	1,680	
Secondary treatment system upgrade (MBR)		753	2,792	5,536
Pilot trial of system to remove algae from pond	20			
Desludging ponds	-308	1,200	250	
New technology assessments to meet Consent	50		56	
Sludge & Biosolids Storage Tanks	756	500		
Biosolids drying pilot trial	100			
Odour and equipment upgrades at Rabbit Island	274	168		
Duplication of discharge pump, improvement of metering		28	224	1,120
UV disinfection for re-use water				56
Bell and Best irrigation and effluent re-use	55	156		280
Rabbit Island Irrigation				28
Septage Facility relocation & upgrade			400	400
'New Water' distribution pipework		200	500	500
Plant & Equipment	80	100	20	20
TOTAL spend per FY (\$k)	8,348	10,087	8,214	8,735

Note: the 2022/23 column has been updated to include the 2021/22 carryover.

Commentary on Upgrades for 2023/24

The programme of work for the NRSBU has been significantly altered as a result of the Activity Management Plan (AMP) review. The smoothing undertaken during the AMP process means that the regional pipework funding may need to be bought forward if the schedule can be accelerated, and current progress on the regional rising main duplication work suggests that this can be completed by the end of the 2023 calendar year, noting that Section 5 commencement is subject to NCCs completion of the Saxton Creek upgrade.

Tasman District Council staff have requested NRSBU minimise delays in implementation of the upgrade.

A number of overflows to the estuary have been caused by insufficient capacity being available at the Beach Road Pumpstation.

The GM has also included several additional capital items in the budget in regard to the inlet works and the treatment capacity at the Bell Island plant, as the inflows being received during rain events is increasing, and it is expected that the duplication of the rising main will allow all flows to reach Bell Island rather than have overflows to the estuary.

Additional upgrade capital includes the sludge storage tanks and workshop and facilities requiring additional funding compared to previous budgets due to increasing costs, and a clearer understanding of the scope of work required

Additional funding has been included to allow the installation of a water reuse pipe between Songer St pumpstation and Saxton Road pumpstation. This pipe will fill one of the gaps in the reuse pipework and will facilitate the implementation of wastewater reuse on the Saxton Field sports facility. This will also require a consent application.

Funding has also been added from the 2023/24 year onwards to meet the requirements of the Bell Island resource consent. Initial AMP budgets represented the estimated scope at the time of the AMP preparation. As design of works has proceeded the costs required to meet these conditions have exceeded the initial estimates. These figures also incorporate cost implications because of increasing raw materials and labour costs.

The Capital upgrades for 2023/24 covers items such as:

- Works associated with the Beach Road to Saxtons Rd pipeline, including pump reconfiguration, MCC upgrades and new pipework.
- New Water recycle pipe between Songer St and Saxton Rd pumpstations
- Sludge & biosolids storage tank upgrades
- Operator building, incorporating facilities, laboratory, workshop

Regional Pipeline Upgrade:

- Capacity improvements will continue during 2023/24 with the Beach Road and Heslops sections of pipework commencing during the latter half of 2023. This may require some funding to be bought forward.

Emission Management System

Emission management will be ongoing, however 2023/24 will be used to develop a plan for the aeration upgrade. There is a technology (MABR) that is being assessed that appears able to reduce nitrous oxide emission by around 100 times (nitrous oxide emissions are one of the largest greenhouse gas emissions from Bell Island) while also reducing aeration energy consumption by as much as 70%. This MABR system needs to be reviewed in detail to assess whether it can result in substantive CO₂ emission reductions while also reducing energy consumption.

Further work is being undertaken to develop the solar power supply for the Bell Island facility.

NRSBU records and data

NRSBU will continue to collate all the NRSBU historic and current information into a single access point electronic storage location, and this record system will disaggregate the asset information further than currently undertaken by NCC GIS system. The system will include all NRSBU data irrespective of it being located in TDC or NCC territories.

The GIS, dashboards and asset information development remains an area of focus, with the goal of having all NRSBU asset data, GIS data, and dashboard to a high standard by the end of the 2023 calendar year.

10. FINANCIAL PLAN

Nelson Regional Sewerage Business Unit				
Annual Plan Budget Summary				
2023/24 to 2025/26				
	Budget	1	2	3
	22/23	23/24	24/25	25/26
Income				
Contributors	10,594	13,702	14,671	15,646
Interest	0	0	0	0
Other Recoveries	330	330	330	330
Total Income	10,924	14,032	15,001	15,976
Expenditure				
Operations & Maintenance	4,606	5,126	5,163	5,643
Management	500	500	500	500
Interest	802	1,749	2,271	2,736
Insurance	98	110	110	110
Depreciation	3,039	3,186	3,267	3,314
Total Operating Cost	9,045	10,671	11,311	12,303
Surplus/Deficit	1,879	3,361	3,690	3,673
Use of Funds				
Loan Repayment	1,894	1,093	2,181	1,165
Renewals	1,146	2,093	1,086	2,149
Owners Distribution	1,879	3,361	3,690	3,673
Upgrades	4,850	9,417	8,214	8,675
	9,769	15,964	15,171	15,662
Sources of Funds				
Surplus/Deficit	1,879	3,361	3,690	3,673
Depreciation	3,039	3,186	3,267	3,314
New Loans	4,850	9,417	8,214	8,675
	9,769	15,964	15,171	15,662

Note: the 2022/23 New Loan has been changed to reflect the carryover from 2021/22

Item 6: Nelson Regional Sewerage Business Unit - 2023/24 Business Plan: Attachment 1

APPENDIX A: Nelson Regional Sewerage Business Unit Committee Activity Schedule 2023-2024

Date	Activity	Papers required
By 31 August 2023	Review draft Annual Report and Financial Statement.	Draft annual report and financial statement. (also draft AMP required for the 3 Waters Entity?)
By 30 September 2023	Deliver annual financial statement to Councils.	Financial Statement.
By 31 December 2023	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 20 March 2024	Present Annual Report and Business Plan to Tasman District Council and Nelson City Council.	Annual Report and Business Plan.
By 30 June 2024	<i>Note: Transfer to the 3 waters entity likely to occur at end of June 2024 therefore some of this work may not be required, and additional items may be required</i> Review board performance Review governance policy. Review Demand Management Plan. Receive report on Contingency Plan review by customer representatives. Receive report on Risk Management review by customer representatives. Review customer satisfaction survey results. Annual review of Strategic Plan. Adopt Energy Conservation Plan. Review Audit Management Report. Annual Carbon Emission Review.	Checklist for committee effectiveness. Governance Policy. Draft Demand Management Plan. Report on Contingency Plan review by customer representatives. Report on Risk Management review by customer representatives. Customer survey report. Strategic plan. Energy Conservation Programme. Carbon Mission Measurement System development

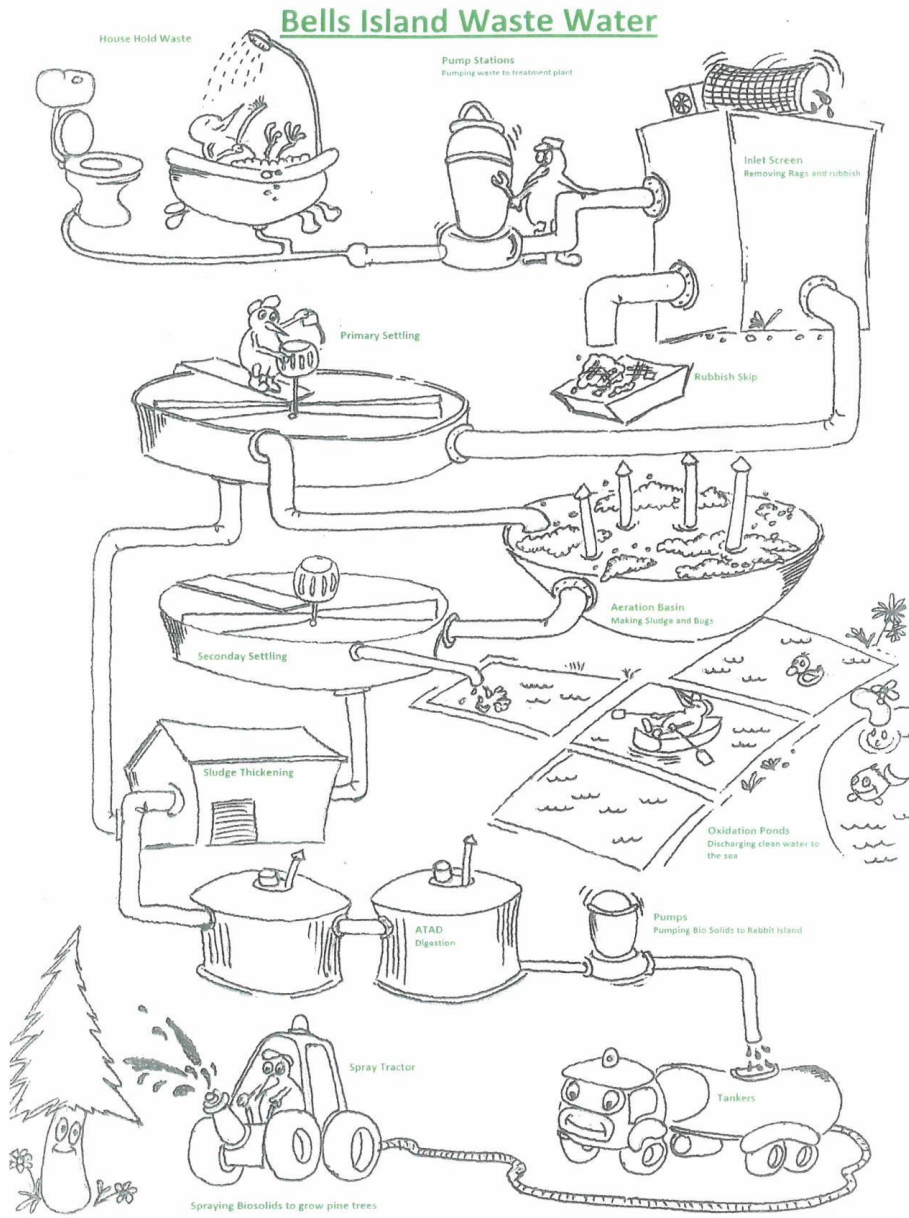
APPENDIX B: Business Improvement Plan

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	<p>Consolidate all data and information; review and develop access method.</p> <p>July 23- June 24 will include adding detail to the GIS system to cover the disaggregation of assets undertaken during 22/23. this will include links from this system to dashboards, asset information system, and other visualisation tools.</p>	<p>In-house and consultants</p> <p>External consultants will need to work with NCC IT and GIS to host the new system</p>	<p>Implementation ongoing for completion by June 2022 for the initial consolidation access method.</p> <p>July 23- 24 progress is expected to include all non-critical but significant assets to have specific assets with data and maintenance information accessible through this single system.</p>
IP-2	<p>Continue sludge removal programme (to be complete during early 23/24).</p>	<p>In-house and Contractor</p>	<p>On-going, Sludge Bund Consent granted 2019/20..</p> <p>Sludge containment area complete 2020/21</p> <p>Desludging commenced – Pond F2 completed.</p> <p>F1 desludging underway with completion during 2022/23 and F3 during 2022/23 and into 2023/24.</p>
IP-3	<p>Determine the long-term strategy (Master Plan)</p>	<p>In-house and consultants</p>	<p>Consultant seconded to assist preparation.</p> <p>Hui process to develop cultural and community values to allow solutions to be developed that where possible encompass those values.</p> <p>Draft to be available by June 2023 and the finalised Master Plan to be completed by December 2023</p>
IP-4	<p>Implement Hazardous Gas Management system for Gravity Belt Thickener system</p>	<p>In-house and consultants</p>	<p>This work stream is currently on hold, pending review of the future of the GBT</p>
IP5	<p>Electrical Supply to Bell Island</p>	<p>In-house and Consultants.</p>	<p>Investigation and implementation of mitigation measures.</p> <p>Progress 2022/23 Generators installed, final connection to</p>

			<p>pumpstations & WWTP required</p> <p>2022/23 Solar array licence and options agreement signed. Investigations underway</p> <p>Additional power cable options review and consent application depending on the solar array and implementation timeframes.</p>
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APPENDIX C: Bell Island Treatment Schematic



APPENDIX D: Focus on Community and Environmental Benefits

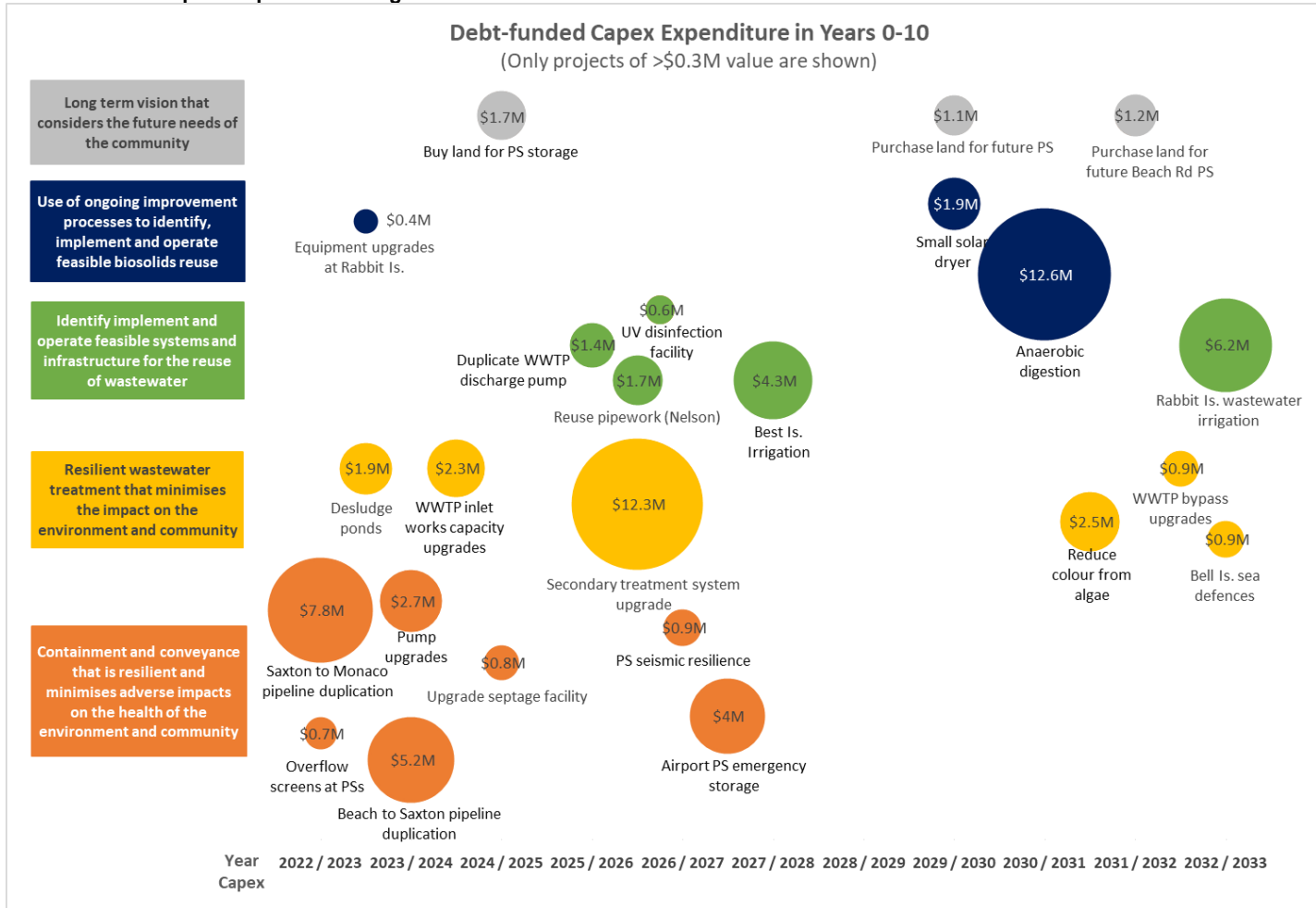
The NRSBU intends to:

- have facilities that are robust and resilient – focusing on collection and conveyance system, followed by Bell Island volumetric treatment capacity.
- reduce overflows into the coastal marine environment and Tasman Bay beyond
- have a greater focus on the immediate coastal marine environment and impacts on the ecology of Tasman Bay
- Develop a water reuse strategy and implement initial reuse actions using existing reuse water and expand as financial constraints allow reuse water volume and infrastructure.
- reduce the volume of wastewater discharged to Waimea Inlet over time
- Maintain focus on biodiversity and estuary health as priorities over the next two years.
- increase attention to facilitating cultural and recreational and educational activities where these don't adversely affect core business activities.

To implement this vision, the NRSBU will:

- develop a programme of work to investigate and implement ways to reduce overflows from the sewerage pump stations to the estuary
- implement the conditions associated with the pump stations Aberrational Discharge resource consent
- undertake a trial to re-use treated wastewater to clean the inlet screens (reducing the use of potable water and consequently the volume discharged to the estuary)
- further develop investigations into the potential re-use (by others) of treated wastewater and install additional pipework to convey treated wastewater to locations where it can be reused by others in the community (including use for irrigation and industrial processes.)
- investigate potential tree and vegetation planting around the perimeter of Bell Island
- continue to operate the treatment plant well and achieve high quality effluent
- commission a high-level report into alternative wastewater treatment systems (that would avoid or significantly reduce the discharge of treated wastewater to the Waimea Inlet).

APPENDIX E: Draft 10 Year Capital Expenditure Diagram



- Notes:
1. Expenditure indicated above does not take into account any requirements resulting from the 3 Waters transition
 2. The plan above does not currently incorporate any allowance for relocation of treatment components due to cultural or climate change considerations. Indicative changes to expenditure could include items such as land purchase, and relocation of anaerobic digestion to a remote site.

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