Infrastructure Asset Management Plan

Community Wastewater Management System

Barunga West Council

3 November 2021

Ref: 210931R002RevC

Document History and Status

Rev	Description	Author	Reviewed	Approved	Date
A	Update 2019 to July 2021 include forecast of Fisherman's Bay and Bute scheme upgrade	RKE / SV	RKE	RKE	20 August 2021
B	Update based on Feedback from Audit Committee and internal review	RKE	TJF	RKE	29 October 2021
C	Amendments following Audit Committee review 3 November 2021	PJL	RKE	RKE	3 November 2021

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Client: Barunga West Council
Ref: 210931R002RevC

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1 Introduction

This 10-year plan outlines the requirements for the Council to continue to plan and deliver on the demands to maintain its CWMS infrastructure and outlines the expenditure demand for budget considerations and links to Council's Long Term Financial Plan (LTFP).

1.1 Background

Barunga West Council is situated within the Mid North region of South Australia on the Spencer Gulf coast, approximately 180km north of Adelaide. The council covers an area of approximately 1,528km^2 and has a population of approximately 2,500 people.

Council provides Community Wastewater Management Systems (CWMS) to residential and commercial properties in the townships of Port Broughton and Bute. Port Broughton is the major centre of the Council area with a population of approximately 1,030 people and Bute is a small rural town with a population of approximately 240 people.

In Port Broughton, the wastewater is collected through a gravity pipe network and nine pumping stations and pumped to a wastewater treatment plant and storage lagoon situated approximately 2.5km north of the town centre. Treated wastewater is pumped to a wastewater reuse storage facility adjacent to the town oval and supplied to both the golf course and the town oval for irrigation.

With the development of Fisherman Bay there will be a new collection vacuum sewer system and rising main installed during 2021-22 as part of the development and Council will be upgrading the treatment plant and irrigation system. It is planned to increase the quality for the reuse water to also irrigation the foreshore in Pt Broughton.

In Bute, the wastewater is collected through a gravity pipe network and one pumping station and pumped to a wastewater treatment lagoon site situated approximately 1.5km north of the town. Wastewater is treated in one lagoon with a second lagoon being available for overflow if required. Upon recent investigations into the potential to reuse water for the oval, it was revealed to achieve compliance an upgrade to the system was required. Council is also planning to deliver this upgrade project in 2021-22.

For both projects the expenditure will potentially occur in across years 2021-22 and 2022-23.

An overview of the CMWS infrastructure assets covered by this asset management plan is shown in Table 1 and Figure 1.

Table 1 CWMS Assets covered by this plan

CWMS Asset Category	Quantity	Replacement Value as of 1/7/2019
Port Broughton		
Gravity Pipes and Rising Mains	25,610m	$4,284,725
Collection Nodes	247	$161,526
Pump Stations	9	$1,022,507
Wastewater Treatment Plant, Lagoon and Reuse Sites	2	$1,153,359
Port Broughton Total		**$6,622,117**

CWMS Asset Category	Quantity	Replacement Value as of 1/7/2019
Bute		
Gravity Pipes and Rising Mains	8,208m	$1,467,471
Collection Nodes	106	$67,818
Pump Station	1	$101,857
Lagoon Sites	1	$253,968
Bute Total		**$1,891,114**
Total CWMS Current Replacement Cost		**$8,513,231**

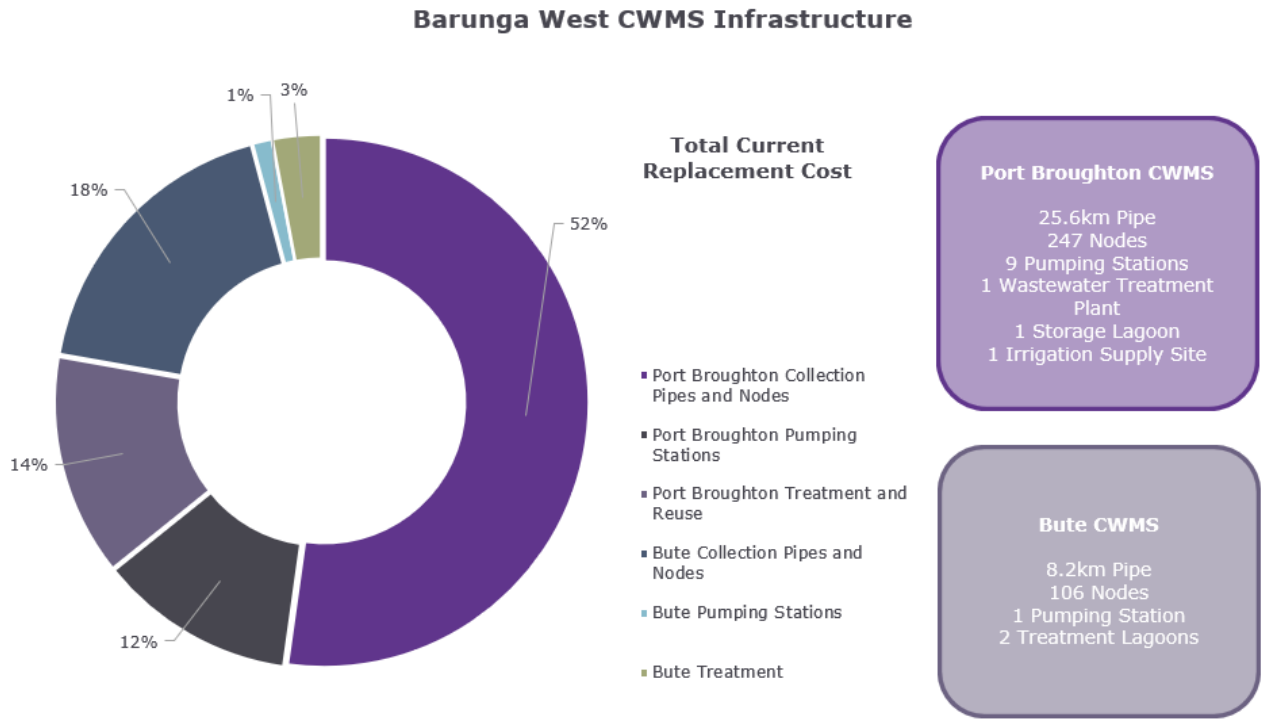


Figure 1 Distribution of CWMS Assets by Replacement Value as of 1 July 2019

This Plan includes the financial impact of the expansion of Pt Broughton Treatment Plant, upgrades at Bute and the Fisherman Bay system. The value of assets will increase from $8.51M to an estimated $18.9M. This will impact on increasing depreciation, increasing operational cost and in the long term will increase renewal, all of which are covered in this plan.

1.2 Plan Framework

This CWMS infrastructure asset management plan is based on the fundamental structure of the IPWEA NAMS 3 Asset Management for Small, Rural or Remote Communities template and has been simplified to minimise the content to suit Barunga West Council.

Barunga West Council provides services for the community in part through the provision of infrastructure assets. Council have acquired these assets directly through construction by Council staff or contractors and by donation of assets constructed by developers and others over time.

The goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach.
- Developing cost-effective management strategies for the long term.
- Providing a defined level of service and monitoring performance.
- Managing risks associated with asset failures.
- Sustainable use of physical resources.

Key elements of the plan are:

- Levels of service – specifies the services and levels of service to be provided by Council.
- Future demand - how this will impact on future service delivery and how this is to be met.
- Life cycle management – how the organisation will manage its existing and future assets to provide the required services.
- Financial summary – what funds are required to provide the required services.
- Plan improvement and monitoring – how the plan will be monitored to ensure it is meeting the organisation's objectives.

This asset management plan is prepared under the direction of Council's vision and values.

Council's vision is:

> *"We are a vibrant, thriving, safe and welcoming coastal and agricultural community with an unspoilt natural environment and relaxed country lifestyle."*
>
> *"Uniquely Barunga" 2020 – 2030*

Council's values are:

Respectful, Approachable & Consultative

We will listen and respond to community views as we make the day-to-day and the long term decisions of Council in the best interests of the district and community. We will demonstrate respect, care and empathy in our processes, considerations and dealings.

One District - One Community

We are diverse…from beach to bush, from town to farm, from young to old, from people who have lived here for a lifetime, to those who are new to the district. Respecting all and valuing all, we support the coming together as one community. Our considerations and decisions are made in the best interests of our district as a whole.

Brave

We understand that at times our decisions will find favour; and at times not. However we will pursue considerations and make decisions that are prudent, reliable and always in the best interest of our whole community.

Optimistic

We are optimistic about our future as we pursue harmony, opportunity and prosperity in our district. We are aspirational; working to provide greater opportunity for all within our community.

Integrity

We will work hard to develop and hold the trust of our community by acting with integrity and transparency in our dealings.

Excellence

We will be visionary in thinking, pragmatic in our decisions and professional in our execution as we deliver the best outcomes for our community. We will embrace innovation and creativity in our pursuit of quality and sustainability. We will continuously explore ways to improve.

1.3 Community Consultation

This asset management plan has been developed based on general feedback from the community through Council's consultation processes as part of the formulation of the strategic management plan.

The maturity of the asset plan is developing and as part of the improvement plan, it is planned to undertake further community consultation as future CWMS asset plans are developed to ensure alignment between community needs and Council's delivery.

2 Levels of Service

The community generally expect that Council will provide an effective method for collection and disposal of wastewater which meets the required Australian and State legislative regulations applicable to CWMS assets. Council has defined service levels in two terms and provides the level of service objective, performance measure process and service target in Table 2 and Table 3.

2.1 Community Levels of Service

Community levels of service relate to the service outcomes that the community wants in terms of quality, reliability, responsiveness, amenity, safety and financing.

Table 2 Community Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Quality	Well maintained and functioning CWMS collection, treatment, storage and reuse system	System compliance with SA Health and EPA licencing requirements	Delivery of CWMS services to customers to meet expectations
Reliability	Minimise interruption to service provision.	Reported service interruptions due to CWMS infrastructure failure.	<5 per year
	Collection system operation without blockage.	Reported or identified blockages.	<5 per year
	Maintenance of service during power outage.	Manage system in accordance with contingency plan to minimise and manage overflow.	Activation of contingency plan as required.
Responsiveness	Response to blockages and alarms within set timeframe.	Response to critical alarms and complaints.	Within 1 hour
		Response to non-critical alarms and complaints	Within 6 hours
Amenity	Maintain visual amenity of CWMS infrastructure.	Maintain equipment and land clear from weeds and debris.	Weed spraying of CWMS sites in conjunction with footpath spraying program.
	Control odour generation from pump stations, treatment plants and storage lagoons.	Reported odour complaints.	<5 per year

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Safety	Ensure public safety around high risk system components including pump stations, manholes, treatment plant and storage lagoons.	All lockable infrastructure secured from public access.	No unauthorised access to CWMS infrastructure.
	Provide "Restricted Access of Municipal Irrigation" quality water and control irrigation times by end users.	Irrigation supply in accordance with the Department of Health Requirements	Minimise risk to public health from public area irrigation.
Financing	Ensure annual services charges meet requirements for compliant operations of scheme and planned asset renewals. Annual budget reporting in line with Council financial processes.	Adequate recording and reporting on costs and charges.	Charges cover operations, maintenance and renewal.

2.2 Technical Levels of Service

Technical Levels of Service support the community service levels and are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the Council undertakes to best achieve the desired community outcomes.

Table 3 Technical Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Quality	Treated effluent to comply with license conditions.	Quarterly sampling using NATA accredited methodology and testing by NATA accredited laboratory.	Within SA Health requirements for water quality.
	Infrastructure compliant with current SA Health and EPA standards.	Infrastructure compliant or plans for upgrade to meet compliant levels.	
Reliability	Ongoing operation of pump stations and treatment plant.	System outage frequency and duration due to CWMS infrastructure failure.	<48 hours treatment plant downtime per annum.
	Availability of treated effluent for irrigation.	Acceptable quantity and quality of water to meet irrigation requirements.	95% of golf course and town oval irrigation requirements met through reclaimed water at Port Broughton.
Maintenance	System maintenance in accordance with component manufacturers' maintenance manual and Council Operations and Maintenance Manual.	Reporting	Records maintained of all system maintenance and compiled annually.
Renewal	Planned asset renewal and upgrade undertaken to maintain system in compliant operational condition.	Asset management plan integrated with Long Term Financial Plan and annual budget process.	Updated plans reviewed annually.
Capacity	Ensure adequate capacity for future growth forecasts.	System planning based on growth forecasts and development planning.	System catchment component plans completed and aligned to growth forecasts and development planning.
Safety	System free of preventable hazards	Assessment of hazardous components and tasks in accordance with Risk Management Procedure.	No lost time injury associated with CWMS operations.
Condition	CWMS Assets in good working condition to ensure effective collection and treatment and management of wastewater	Inspection and maintenance of assets	No wastewater overflows from pumping stations. Repair of asset failures within tolerance period to ensure ongoing transfer and treatment of wastewater.

3 Future Demand

3.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc. Demand factor trends and impacts on service delivery are summarised in Table 4.

Table 4 Demand Factors, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
Impending development of Fisherman Bay	Council and Fisherman Bay Management are working together to support this development	It is anticipated that the development will be completed by July 2022	Significant expansion of Councils maintenance obligations and asset ownership of wastewater system
Demand for reuse water for irrigation in Bute	Council has committed to a $1.1M project to upgrade the system including irrigation system	It is anticipated that the development will be completed by July 2022	Community will get access to reuse water to current standards for the oval. Potable water use will be offset by use of recycled water
Population growth and growth in existing CWMS system (excluding Fisherman Bay).	Port Broughton: Current expected population growth of 1% per annum.	Growth in accordance with historical background growth.	New developer contributed infrastructure.
	Bute: No expected population growth during the 10 year planning period.		Downstream impact on existing collection, transfer, treatment and storage infrastructure.
Regulatory change to CWMS standards and guidelines including ESCOSA/OTR requirements under Water Industry Act	Port Broughton and Bute Schemes compliant with current regulatory requirements of ESCOSA, EPA and Health SA. Report to ESCOSA annually.	No increased treatment or disposal requirements anticipated.	

3.2 Demand Management Plan

Demand for new CWMS services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets.

Based on the WGA report (ref: WGA202222RP-CV-0001 Rev C), the Port Broughton Scheme is nearing capacity and there is a need to cater for future development. In addition, with the development proposed for Fisherman Bay the report provides recommendations for upgrading the plant for 460 allotments. An additional 200 allotments is suggested for Port Broughton future development.

Opportunities identified to date for demand management are shown in Table 5. Further opportunities will be developed in future revisions of this asset management plan.

Table 5 Demand Management Plan Summary

Service Activity	Demand Management Plan
Sewer system Fisherman Bay	Included in this asset plan based on best available information prior to tender. Council supports the development and handover of CWMS assets at the completion of construction Council plans its workforce and external contractors to operate and maintain the system
Upgrade to Bute Treatment system	Included in this asset plan based on best available information prior to tender. Council plans its workforce and external contractors to operate and maintain the system
Wastewater Collection	Investigate capacity assessment of each pumping station Evaluation of impact of new allotments on existing infrastructure Assess Developer contributions as per Council assessment Negotiate developer system augmentations where required Planning to incorporate any identified population growth over asset life (currently 1% per annum for Port Broughton and no expected growth for Bute)
Wastewater Treatment, Storage and Reuse	Capacity assessment of wastewater treatment processes, storage and transfer of treated wastewater Evaluation of demand for irrigation of oval and golf course and assessment of capacity of treated wastewater supply
Climate Change	Planning for high sea levels that may cause inundation of the CWMS pumping stations situated adjacent to the coast.
Future vacuum system at Fisherman Bay will necessitate higher maintenance diligence	Replacement of valves will need to be budgeted and staged in the future. The risk of saline ground water ingress into vacuum system could be monitored with regular salinity tests at the lagoon. The vacuum system operates most efficiently when the seals are tight, and not slightly open due to grit or gravel. Monitoring and maintenance of this needs to be included. External support may be required to setup and implement monitoring and assessment of performance of treatment system. Provision to be made for additional screening.
Future Bute Treated Effluent Reuse	With the use of treated effluent (recycled water) for irrigation purposes as part of the upgraded Bute scheme, Council will require increased water quality testing in accordance with the relevant SA Health approval.

4 Life Cycle Management

The life cycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in Section 2) while optimising life cycle costs.

4.1 Background Data

Barunga West Council's CWMS assets are located in the townships of Port Broughton and Bute and the assets covered by this asset management plan are shown in Table 1. The Port Broughton CWMS was constructed in 2003 and the Bute CWMS was constructed in 1986. A minor extension of the Port Broughton system was added in 2009 to collect wastewater from the Barunga By The Sea retirement village situated in the southern section of town.

In 2021-22 Council will also be recognising new assets with the Fisherman Bay collection system, pumpstations and rising mains and the expansion to the towns wastewater treatment plant together with the upgrade to the treatment system at Bute and irrigation system upgrades at both sites.

These projects include Council funding of $2.7M for the Pt Broughton Treatment plant, $1.0M at Bute and $0.5M for the irrigation upgrade, these assets together with the vested assets from Fisherman Bay Management for the vacuum system and rising main at Fisherman Bay will require Council to recognise approximately $10.0M of new assets in 2021-22. This increases the value of the CWMS asset base by approximate 55%.

The age profile of the assets shown by Current Replacement Cost (CRC) included in this plan is shown in Figure 2.

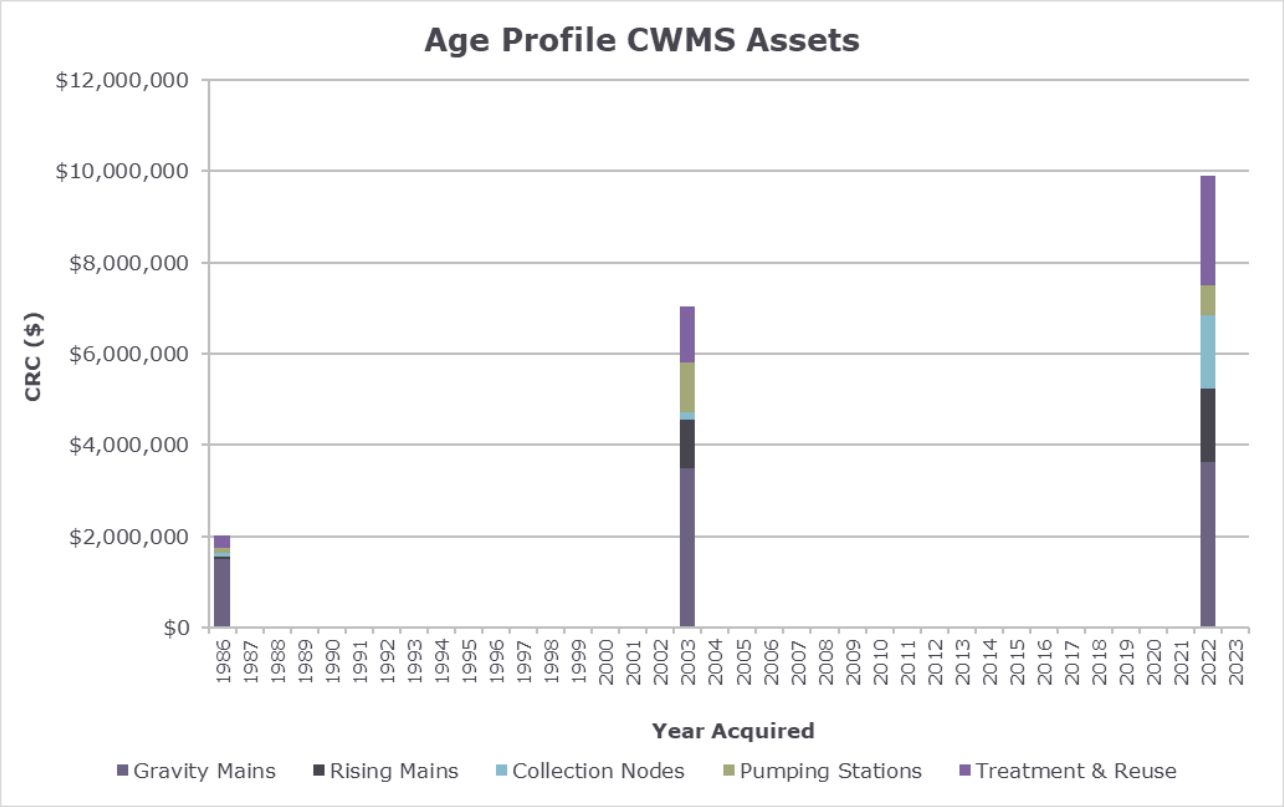


Figure 2 CWMS Asset Age Profile

The key highlights of the Fisherman Bay Project relevant to this asset plan are:

- 460 property connections
- 5.2km of collection network (potential Vacuum system)
- 100 vacuum valves and pits
- Vacuum pump station
- 3.1 km rising main
- Upgrade of Port Broughton WWTP.
- Irrigation

The key highlights of the Bute Project relevant to this asset plan are:

- WWTP Solar Pump and Rising main
- Oval recycled water storage tank, chlorine dosing tank and screen filter
- Lagoon upgrades including a new facultative lagoon and storage lagoon
- Connection into the existing irrigation network including non-return valves and associated infrastructure.

4.1.1 Asset Capacity and Performance

Council's services are generally provided to meet design standards where these are available. Locations where deficiencies in service performance are known are detailed in Table 6. Council is addressing these known deficiencies.

Table 6 Known Service Performance Deficiencies

Location	Service Deficiency
Stormwater Infiltration	There are increased flows in the CWMS systems during rainfall events indicating stormwater infiltration into the networks. Currently the treatment plant and lagoons have sufficient capacity to deal with these increased flows.
Port Broughton Lagoon Storage	The storage lagoon at Port Broughton is almost at capacity and occasionally irrigation of the oval and golf course are undertaken to reduce levels in the storage lagoon. Upgrade of this lagoon is planned as part of the Fisherman Bay development.
Bute Oval Irrigation	High potable water usage at cost to Council. Provision of new infrastructure planned to supply the oval with recycled water suitable for use in a public space in accordance with Health requirements.

4.1.2 Asset Condition

Limited asset condition information is available for the Port Broughton and Bute CWMS systems. The remaining life for all the assets has been measured from the date of construction and the standard useful life of each asset. For those assets where the age and standard useful life calculation would indicate that the asset had expired, a manual expiry date has been assigned based on the expected remaining useful life of the asset if the asset is still in service.

Council may plan to undertake collection of condition data for the CWMS assets, particularly the electrical and mechanical assets, in the future. This information will inform the valuation and renewal planning for the CWMS assets.

4.1.3 Asset Values

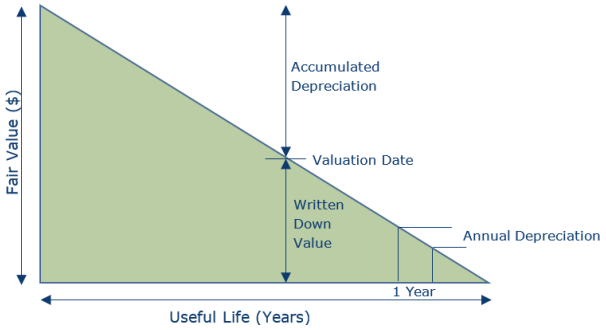
The value of the CWMS assets in Port Broughton and Bute as of 1 July 2019 that are covered by this asset management plan is shown below.

Table 7 CWMS Asset Value Summary at 1 July 2019

Current Replacement Cost	$8,513,231
Accumulated Depreciation	$2,491,900
Carrying Amount	$6,021,331
Annual Depreciation Forecast	$131,549

The Annual Depreciation Forecast shown is the 2019-20 forecast as reported at the 1 July 2019 revaluation.

The current rate of consumption (annual depreciation / current replacement cost) for CWMS assets is 1.5%. This indicates on average over the life of the asset that 1.5% of the depreciable amount is consumed annually. The translation of this consumption rate into renewals is subject to a decision on funding, service level determination, timing of renewal and condition.



4.1.4 Estimated Asset Values 1/7/2022 (Forecast)

The estimated value of the CWMS assets in Port Broughton and Bute as of 1 July 2022 that includes the vested assets from Fisherman Bay Management, and the upgrades to the Pt Broughton and Bute treatment and reuse schemes is shown below.

Table 8 CWMS Forecast Asset Value Summary of 1 July 2022

Current Replacement Cost	$18,973,201
Accumulated Depreciation	$3,129,828
Carrying Amount	$15,843,374
Annual Depreciation Forecast	$336,055

The Annual Depreciation Forecast shown is the 2022-23 forecast. Due to timing of construction, the 2023-24 depreciation is estimated to increase to $348,547.

The above estimate includes an indexation of the 1/7/2019 valuation rates.

This provides a reasonable basis for considering the depreciation impacts of the upgrades in the long-term financial plan, however, this will need to be confirmed once actual construction costs are known.

4.2 Risk Management

An assessment of risks associated with service delivery from CWMS infrastructure assets has been undertaken by Council and a contingency plan for the identified risks is addressed in the Safety, Reliability and Technical Management Plan that is reviewed every two years.

4.3 Required Expenditure

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year medium term financial planning period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

With the impending Fisherman Bay development there will be a significant impact in the planning period on increases to assist in funding the new scheme which in turn will impact operations, maintenance and long-term renewal funding together with increasing the valuation. These have been considered and are included in the Plan.

4.3.1 Operation and Maintenance

Maintenance is the regular on-going work that is necessary to keep assets in operating order, including instances where portions of the asset fail and need immediate repair to make the asset operational again. Maintenance includes routine planned maintenance such as the cleaning of equipment, reactive (unplanned) maintenance such as repair of equipment and specific maintenance work activities that may be required only on an occasional basis. Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement.

Operation costs include the ongoing costs to keep the CWMS system running and include electrical costs to run pumping stations and wastewater treatment plants, treated wastewater sampling and testing costs, licensing fees.

Historic expenditure on operations has been in the range of $55,000 to $70,000/annum and Maintenance is $25,000 to $30,000/annum. This plan looks to increase this expenditure as a result of the increase in asset stock.

When Fisherman Bay system and upgrade of the Port Boughton treatment site is commissioned and handed over to Council it is estimated the following impact:

- Operations to increase to $120,000/annum
- Maintenance to increase to $65,000/annum.

With the expansion of the treatment plant at Port Broughton and the planned vacuum system it is likely additional staff will be required to maintain the extended system.

Additional allowance of $300,000 in 2021-22 has been allowed to cover consultancy fees associated with the design and construction of new CWMS assets.

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Table 9 and Figure 3.

Table 9 Projected Operations and Maintenance Expenditure

Financial Year	Operation	Maintenance	Total
2021-22	$375,000	$31,000	$406,000
2022-23	$120,000	$90,000	$210,000
2023-24	$120,000	$65,000	$185,000
2024-25	$120,000	$65,000	$185,000
2025-26	$120,000	$65,000	$185,000
2026-27	$120,000	$65,000	$185,000
2027-28	$120,000	$65,000	$185,000
2028-29	$120,000	$65,000	$185,000
2029-30	$120,000	$65,000	$185,000
2030-31	$120,000	$65,000	$185,000
Total	**$1,455,000**	**$641,000**	**$2,096,000**
Avg	**$145,500**	**$64,100**	**$209,600**

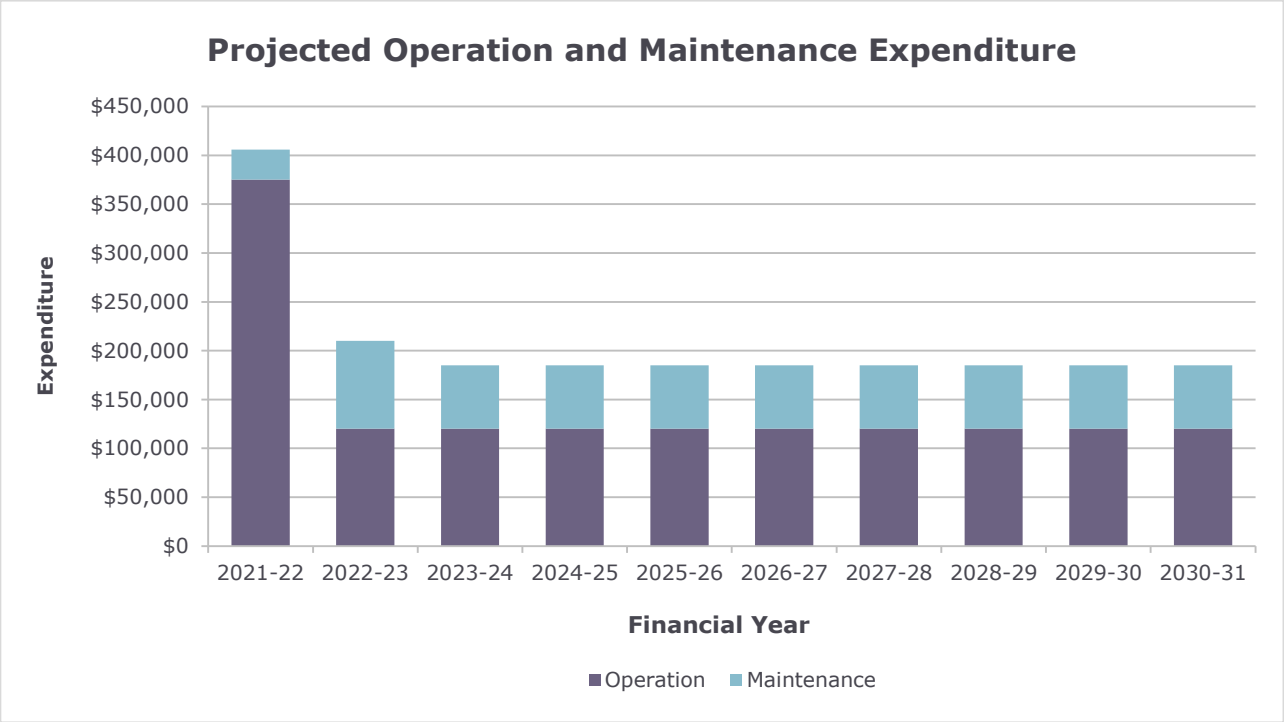


Figure 3 Projected Operations and Maintenance Expenditure

The average annual operation and maintenance cost over a 10-year planning period (medium term) is $212,333/annum.

As part of the improvement plan a more detailed assessment of maintenance and operational requirements will drive a refinement in this expenditure prediction.

4.3.2 Capital Renewal

Renewal expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered upgrade expenditure.

The renewal plan is based on the asset register and uses the renewal costs and renewal years for the assets using the acquisition year and useful life of each asset. Approximately $180K is for replacement of assets at pumping stations and approximately $190K is for replacement of assets at the wastewater treatment plant or reuse site at Port Broughton. Actual replacement of assets will depend on the serviceability of these assets.

With the expansion of the treatment plant at Port Broughton to include the Fisherman Bay flows it is likely that some of the planned renewal will be incorporated into the upgrade of the plant. At the time of writing this plan this level of detail has not been developed. Accordingly, as part of the improvement plan the impact on the renewal plan with the planned upgrade could be investigated and the renewal plan can be updated in future versions of the asset plan. Also when Fisherman Bay system is commissioned it is likely that future renewal will occur beyond the 10 year planning period and accordingly no allowance has been made.

The costs associated with the renewals have been aggregated for each financial year over a 10 year planning period (medium term) and shown in Table 10 and Figure 4. The average annual capital renewal cost over the 10-year plan is approximately $40K.

Table 10 Projected Capital Expenditure

Financial Year	Renewal
2021-22	$2,700
2022-23	$44,381
2023-24	$44,381
2024-25	$44,381
2025-26	$44,381
2026-27	$44,381
2027-28	$44,381
2028-29	$44,381
2029-30	$44,381
2030-31	$44,381
Total	**$402,129**

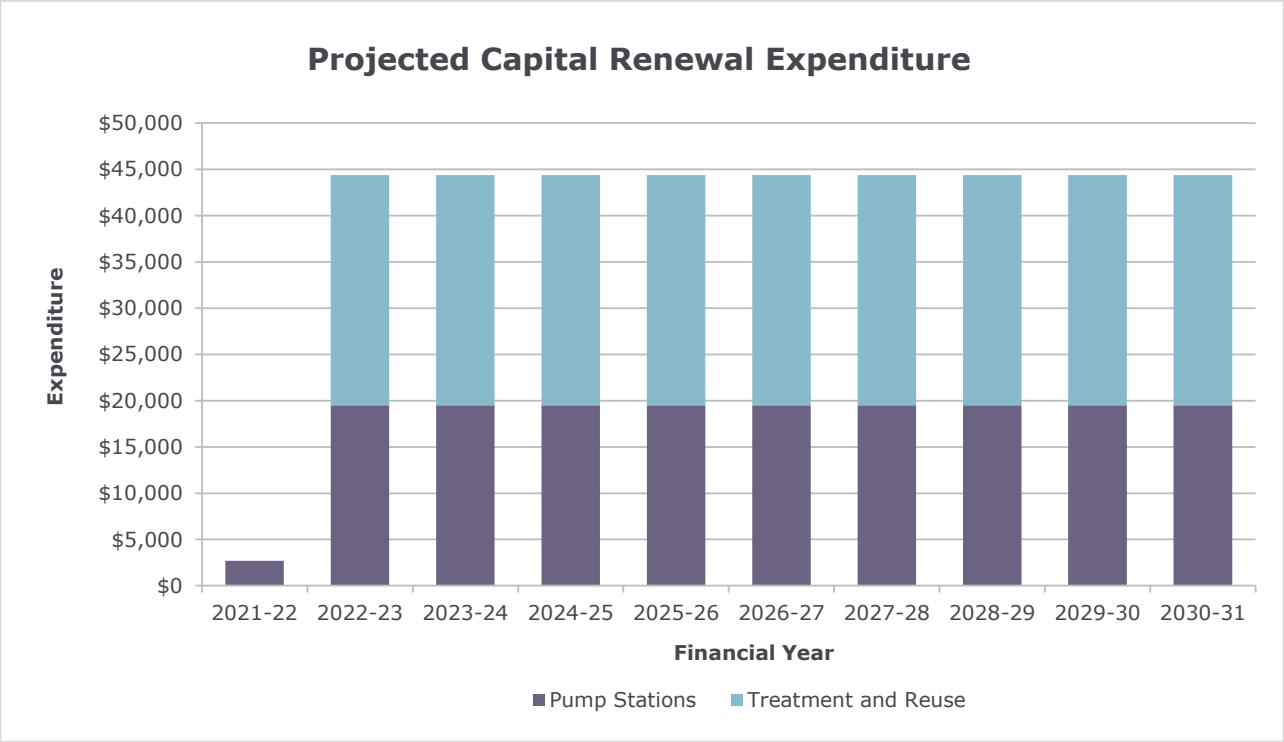


Figure 4 Projected Capital Renewal Expenditure

The Projected capital renewal program is shown in Appendix A.

The Asset Renewal funding ratio over a 10 year period for renewal is 100%.

4.3.3 Capital New/Upgrade and Acquisition

New/upgrade expenditure is major work that creates a new asset that did not previously exist or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development.

Council is planning to construct a new storage lagoon at Port Broughton to increase the storage capacity of treated wastewater. This work is planned to occur in the first 2 years of this plan. The Port Broughton CWMS is to be extended to include the community of Fisherman Bay and a vacuum system has been estimated in the WGA report to cost approximately $9M. This allows for the treatment plant to expand for potential growth of Port Broughton of 200 allotments and 460 at Fisherman Bay together with existing demand, as well as expanding reuse infrastructure. The Bute upgrade is anticipated to cost overall $1M. An assessment of the capital cost that will attract depreciation is estimated to be just under $10M.

The following provides an estimate on the upgrade expenditure forecasted to show the increase in assets to be capitalised and the contribution to funding from Council. There is external funding for the project.

Table 11 Projected New/Upgrade Expenditure

Financial Year	Council Contribution	Costs to be capitalised
2021-22	$3,700,000	
2022-23	$500,000	$9,916,315
2023-24	$0	
2024-25	$0	
2025-26	$0	
2026-27	$0	
2027-28	$0	
2028-29	$0	
2029-30	$0	
2029-31	$0	
Total	**$4,200,000**	**$9,916,315**

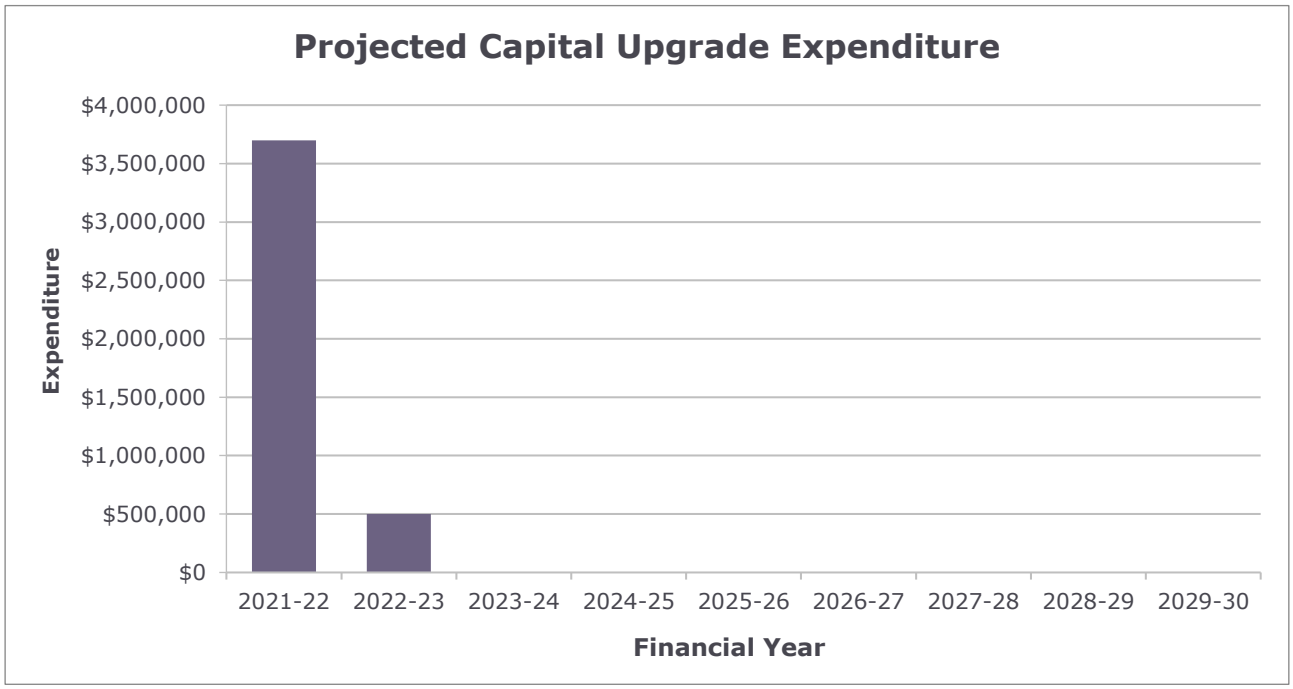


Figure 5 Projected Capital Upgrade Expenditure Council contribution

The Council contribution reflects the funding from Council and the estimated cost to be capitalised is an anticipated value of depreciable assets that will be vested to Council to maintain and renew into the future. As referenced in the preceding sections of this plan this is likely to increase both operational costs and depreciation in the planning period. There is no anticipated increase in renewal funding in the next 10 years, however there will be a longer-term increase in renewal as a result of the upgrade, which is outside the 10 year projections.

It is noted that expected capital costs for major CWMS infrastructure costs are derived from high-level cost estimates provided by design consultants for the works. Actual project costs are subject to vary based on market conditions as well as tendered construction costs.

4.3.4 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Council has not identified any CWMS infrastructure assets to be disposed in the 10 year planning period (medium term).

4.3.5 Financial Projections

The financial projections are shown in Table 12 and Figure 6 for projected operating (operations and maintenance), capital renewal, capital upgrade and estimated budget funding of the existing schemes.

While the upgrade projects will total in excess of $10 Million dollars, Council is contributing $3,700,000 and $500,000 for large CWMS capital projects in 2021-22 and 2022-23 respectively, with additional funding from Grants and Local Government Schemes offsetting the remaining construction costs.

Table 12 Operating and Capital Expenditure

Financial Year	Capital Renewal	Capital Upgrade	Operation & Maintenance	Estimated Budget Funding
2021-22	$2,700	$3,700,000	$406,000	$4,108,700
2022-23	$44,381	$500,000	$210,000	$754,381
2023-24	$44,381	$0	$185,000	$229,381
2024-25	$44,381	$0	$185,000	$229,381
2025-26	$44,381	$0	$185,000	$229,381
2026-27	$44,381	$0	$185,000	$229,381
2027-28	$44,381	$0	$185,000	$229,381
2028-29	$44,381	$0	$185,000	$229,381
2029-30	$44,381	$0	$185,000	$229,381
2030-31	$44,381	$0	$185,000	$229,381
Total	**$402,129**	**$4,200,000**	**$2,096,000**	**$6,698,129**

While Council is funding $4.2 Million in upgrade to total value of new assets is approaching $10 Million. The effect of the increase in depreciation and maintenance is based on the total value of new assets and is included in this plan. Given the useful life on these new assets, the impact on renewal of new assets will be realised in long term renewal modelling and does not impact the 10 year renewal plan.

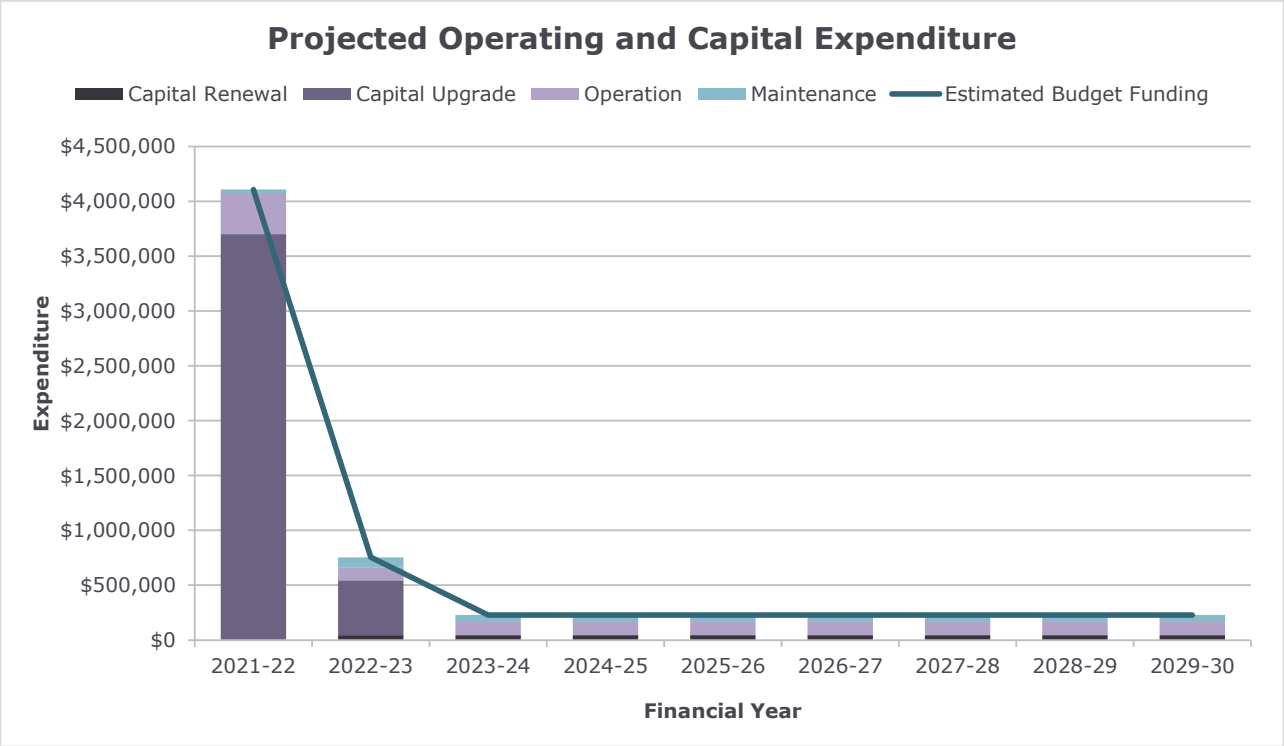


Figure 6 Projected Operating and Capital Expenditure over the Medium Term (10 Years)

The average projected operations, maintenance and capital expenditure required over the 10 year planning period is $669,813 per year.

5 Plan Improvement and Monitoring

The following tasks have been identified for improving future versions of the plan. Council should assign responsibilities and resources to these tasks as part of the endorsement of the plan.

Table 13 Tasks Identified for improving future versions of the plan

Task No.	Task	Responsibility
1	The CWMS register is currently in spreadsheets and used for valuation and asset planning. Prior to capitalising the vested assets from the upgrades outlined in this plan Tonkin will update Council asset system Conquest with CWMS assets	Tonkin
2.	The CWMS asset renewal plan is currently based on the age and standard useful lives of the CWMS assets. As the assets age a condition-based approach to determining the remaining lives of the assets will assist in renewal planning. Regular inspections of the assets at the pumping stations and treatment facilities and inspection of a sample of longer life assets is recommended. This can be implemented through Conquest once task 1 is complete	Council Administration
3	Plan to use Councils asset management system Conquest for a central system for managing the CWMS asset register and associated inspections and maintenance work to help proactivity manage the scheme moving forward	Council Administration
4	Undertake a community consultation exercise on CWMS assets and include results in future asset plans	Council Administration

This asset management plan will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

This plan has a life of 4 years and is due for revision and updating within 2 years of each Council election.

6 References

IPWEA, 2006, *NAMS.PLUS3 Asset Management*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

IPWEA, 2011, Asset Management for Small, Rural or Remote Communities Practice Note, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

Barunga West Council CWMS Asset Valuation 1 July 2019 report (20191224DR002A)

Port Broughton WWTP Upgrade and Fisherman's Bay sewerage system WGA202222RP-CV-0001 Rev C

Appendix A – Projected 10 Year Capital Renewal

Town	Asset Group	Asset Name	Useful Life (years)	Planned Renewal Year	Renewal Cost ($)
Bute	Pumps	Bute Pump Station Pump 1	25	2021-22	$5,268
Bute	Pumps	Bute Pump Station Pump 2	25	2021-22	$5,268
Bute	Valves	Bute Pump Station Isolation Valve 1	25	2021-22	$456
Bute	Valves	Bute Pump Station Isolation Valve 2	25	2021-22	$456
Bute	Valves	Bute Pump Station Non Return Valve 1	25	2021-22	$539
Bute	Valves	Bute Pump Station Non Return Valve 2	25	2021-22	$539
Bute	Electrical & Communications	Bute Pump Station Switchboard & Controls	30	2021-22	$13,949
Bute	Electrical & Communications	Bute Pump Station Control Cabinet	30	2021-22	$8,268
Bute	Electrical & Communications	Bute Pump Station Telemetry	30	2021-22	$1,144
				Sub total 2021-22	**$35,887**
Port Broughton	Pumps	Port Broughton Pump Station No 1 Pump 1	25	2023-30	$16,980
Port Broughton	Pumps	Port Broughton Pump Station No 1 Pump 2	25	2023-30	$16,980
Port Broughton	Valves	Port Broughton Pump Station No 1 Isolation Valve 1	25	2023-30	$2,053
Port Broughton	Valves	Port Broughton Pump Station No 1 Isolation Valve 2	25	2023-30	$2,053
Port Broughton	Valves	Port Broughton Pump Station No 1 Non Return Valve 1	25	2023-30	$1,717
Port Broughton	Valves	Port Broughton Pump Station No 1 Non Return Valve 2	25	2023-30	$1,717
Port Broughton	Pumps	Port Broughton Pump Station No 2 Pump 1	25	2023-30	$8,125

Town	Asset Group	Asset Name	Useful Life (years)	Planned Renewal Year	Renewal Cost ($)
Port Broughton	Pumps	Port Broughton Pump Station No 2 Pump 2	25	2023-30	$8,125
Port Broughton	Valves	Port Broughton Pump Station No 2 Isolation Valve 1	25	2023-30	$1,222
Port Broughton	Valves	Port Broughton Pump Station No 2 Isolation Valve 2	25	2023-30	$1,222
Port Broughton	Valves	Port Broughton Pump Station No 2 Non Return Valve 1	25	2023-30	$1,233
Port Broughton	Valves	Port Broughton Pump Station No 2 Non Return Valve 2	25	2023-30	$1,233
Port Broughton	Pumps	Port Broughton Pump Station No 3 Pump 1	25	2023-30	$3,288
Port Broughton	Pumps	Port Broughton Pump Station No 3 Pump 2	25	2023-30	$3,288
Port Broughton	Valves	Port Broughton Pump Station No 3 Isolation Valve 1	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 3 Isolation Valve 2	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 3 Non Return Valve 1	25	2023-30	$539
Port Broughton	Valves	Port Broughton Pump Station No 3 Non Return Valve 2	25	2023-30	$539
Port Broughton	Pumps	Port Broughton Pump Station No 4 Pump 1	25	2023-30	$3,893
Port Broughton	Pumps	Port Broughton Pump Station No 4 Pump 2	25	2023-30	$3,893
Port Broughton	Valves	Port Broughton Pump Station No 4 Isolation Valve 1	25	2023-30	$1,222
Port Broughton	Valves	Port Broughton Pump Station No 4 Isolation Valve 2	25	2023-30	$1,222
Port Broughton	Valves	Port Broughton Pump Station No 4 Non Return Valve 1	25	2023-30	$1,233
Port Broughton	Valves	Port Broughton Pump Station No 4 Non Return Valve 2	25	2023-30	$1,233

Town	Asset Group	Asset Name	Useful Life (years)	Planned Renewal Year	Renewal Cost ($)
Port Broughton	Pumps	Port Broughton Pump Station No 5 Pump 1	25	2023-30	$3,288
Port Broughton	Pumps	Port Broughton Pump Station No 5 Pump 2	25	2023-30	$3,288
Port Broughton	Valves	Port Broughton Pump Station No 5 Isolation Valve 1	25	2023-30	$1,116
Port Broughton	Valves	Port Broughton Pump Station No 5 Isolation Valve 2	25	2023-30	$1,116
Port Broughton	Valves	Port Broughton Pump Station No 5 Non Return Valve 1	25	2023-30	$1,298
Port Broughton	Valves	Port Broughton Pump Station No 5 Non Return Valve 2	25	2023-30	$1,298
Port Broughton	Pumps	Port Broughton Pump Station No 6 Pump 1	25	2023-30	$3,288
Port Broughton	Pumps	Port Broughton Pump Station No 6 Pump 2	25	2023-30	$3,288
Port Broughton	Valves	Port Broughton Pump Station No 6 Isolation Valve 1	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 6 Isolation Valve 2	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 6 Non Return Valve 1	25	2023-30	$539
Port Broughton	Valves	Port Broughton Pump Station No 6 Non Return Valve 2	25	2023-30	$539
Port Broughton	Pumps	Port Broughton Pump Station No 7 Pump 1	25	2023-30	$6,368
Port Broughton	Pumps	Port Broughton Pump Station No 7 Pump 2	25	2023-30	$6,368
Port Broughton	Valves	Port Broughton Pump Station No 7 Isolation Valve 1	25	2023-30	$1,222
Port Broughton	Valves	Port Broughton Pump Station No 7 Isolation Valve 2	25	2023-30	$1,222
Port Broughton	Valves	Port Broughton Pump Station No 7 Non Return Valve 1	25	2023-30	$1,233

Town	Asset Group	Asset Name	Useful Life (years)	Planned Renewal Year	Renewal Cost ($)
Port Broughton	Valves	Port Broughton Pump Station No 7 Non Return Valve 2	25	2023-30	$1,233
Port Broughton	Pumps	Port Broughton Pump Station No 8 Pump 1	25	2023-30	$5,268
Port Broughton	Pumps	Port Broughton Pump Station No 8 Pump 2	25	2023-30	$5,268
Port Broughton	Valves	Port Broughton Pump Station No 8 Isolation Valve 1	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 8 Isolation Valve 2	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 8 Non Return Valve 1	25	2023-30	$539
Port Broughton	Valves	Port Broughton Pump Station No 8 Non Return Valve 2	25	2023-30	$539
Port Broughton	Pumps	Port Broughton Pump Station No 9 Pump 1	25	2023-30	$5,268
Port Broughton	Pumps	Port Broughton Pump Station No 9 Pump 2	25	2023-30	$5,268
Port Broughton	Valves	Port Broughton Pump Station No 9 Isolation Valve 1	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 9 Isolation Valve 2	25	2023-30	$456
Port Broughton	Valves	Port Broughton Pump Station No 9 Non Return Valve 1	25	2023-30	$539
Port Broughton	Valves	Port Broughton Pump Station No 9 Non Return Valve 2	25	2023-30	$539
Port Broughton	Mechanical	Port Broughton WWTP AAT Aerator 1	25	2023-30	$7,017
Port Broughton	Mechanical	Port Broughton WWTP AAT Aerator 2	25	2023-30	$7,017
Port Broughton	Mechanical	Port Broughton WWTP AAT Aerator 3	25	2023-30	$7,017
Port Broughton	Mechanical	Port Broughton WWTP IAT Aerator 1	25	2023-30	$7,017

Town	Asset Group	Asset Name	Useful Life (years)	Planned Renewal Year	Renewal Cost ($)
Port Broughton	Mechanical	Port Broughton WWTP IAT Aerator 2	25	2023-30	$7,017
Port Broughton	Mechanical	Port Broughton WWTP IAT Aerator 3	25	2023-30	$7,017
Port Broughton	Mechanical	Port Broughton WWTP RAS Pump	25	2023-30	$4,500
Port Broughton	Mechanical	Port Broughton WWTP WAS Pump	25	2023-30	$4,500
Port Broughton	Electrical & Communications	Port Broughton WWTP AAT Oxygen Probe	25	2023-30	$2,518
Port Broughton	Civil	Port Broughton WWTP Small rainwater tank pump	25	2023-30	$4,938
Port Broughton	Mechanical	Port Broughton WWTP Clorine dosing	25	2023-30	$1,000
Port Broughton	Mechanical	Port Broughton WWTP Irrigation transfer pump	25	2023-30	$13,845
Port Broughton	Mechanical	Port Broughton WWTP Treated wastewater filter	25	2023-30	$10,698
Port Broughton	Mechanical	Port Broughton WWTP Chlorine dosing point	25	2023-30	$1,000
Port Broughton	Mechanical	Port Broughton WWTP Chlorine dosing pump	25	2023-30	$6,449
Port Broughton	Mechanical	Port Broughton WWTP Valves	25	2023-30	$20,529
Port Broughton	Mechanical	Port Broughton Oval Site Oval Irrigation Supply Pump	25	2023-30	$12,200
Port Broughton	Mechanical	Port Broughton Oval Site Golf Course Irrigation Supply Pump	25	2023-30	$12,200
Port Broughton	Mechanical	Port Broughton Oval Site Oval Irrigation Filter	25	2023-30	$4,590
Port Broughton	Mechanical	Port Broughton Oval Site Golf Course Irrrigation Filter	25	2023-30	$4,590
Port Broughton	Mechanical	Port Broughton Oval Site Solenoid Valves	25	2023-30	$1,587

Town	Asset Group	Asset Name	Useful Life (years)	Planned Renewal Year	Renewal Cost ($)
Port Broughton	Mechanical	Port Broughton Oval Site Actuated Valve 1	25	2023-30	$5,642
Port Broughton	Mechanical	Port Broughton Oval Site Actuated Valve 2	25	2023-30	$5,642
Port Broughton	Civil	Port Broughton Oval Site Pressure Vessel 1	25	2023-30	$565
Port Broughton	Civil	Port Broughton Oval Site Pressure Vessel 2	25	2023-30	$565
Port Broughton	Mechanical	Port Broughton Oval Site Oval Irrigation Filter	25	2023-30	$7,584
Port Broughton	Mechanical	Port Broughton Oval Site Golf Course Irrigation Filter	25	2023-30	$7,584
Port Broughton	Mechanical	Port Broughton Oval Site Isolation Valves	25	2023-30	$12,317
				Sub total 2023-30	**$333,746**
				Total 10 Year Renewal Plan	**$369,633**