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ASSET MANAGEMENT PLAN

Yorke Peninsula Council

Water Infrastructure



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The Institute of Public Works Engineering Australasia

Contents

- 1.0 EXECUTIVE SUMMARY 5**
- 1.1 The Purpose of the Plan5
- 1.2 Asset Description5
- 1.3 Levels of Service.....5
- 1.4 Future Demand5
- 1.5 Lifecycle Management Plan.....5
- 1.6 Financial Summary5
- 1.7 Asset Management Practices.....7
- 1.8 Monitoring and Improvement Program7

- 2.0 Introduction 8**
- 2.1 Background.....8
- 2.2 Goals and Objectives of Asset Ownership9

- 3.0 LEVELS OF SERVICE 10**
- 3.1 Customer Research and Expectations10
- 3.2 Strategic and Corporate Goals10
- 3.3 Legislative Requirements.....10
- 3.4 Customer Values11
- 3.5 Customer Levels of Service12
- 3.6 Technical Levels of Service12

- 4.0 FUTURE DEMAND 15**
- 4.1 Demand Drivers15
- 4.2 Demand Forecasts.....15
- 4.3 Demand Impact and Demand Management Plan15
- 4.4 Asset Programs to meet Demand15
- 4.5 Climate Change and Adaption15

- 5.0 LIFECYCLE MANAGEMENT PLAN 17**
- 5.1 Background Data.....17
- 5.2 Operations and Maintenance Plan.....18
- 5.3 Renewal Plan20
- 5.4 Summary of future renewal costs21
- 5.5 Acquisition Plan22
- 5.6 Disposal Plan.....24

- 6.0 RISK MANAGEMENT PLANNING 25**

6.1	Critical Assets.....	25
6.2	Risk Assessment.....	25
6.3	Infrastructure Resilience Approach.....	27
6.4	Service and Risk Trade-Offs	28
7.0	FINANCIAL SUMMARY	29
7.1	Financial Statements and Projections	29
7.2	Funding Strategy.....	30
7.3	Valuation Forecasts.....	30
7.4	Key Assumptions Made in Financial Forecasts.....	31
7.5	Forecast Reliability and Confidence	31
8.0	PLAN IMPROVEMENT AND MONITORING	33
8.1	Status of Asset Management Practices	33
8.2	Improvement Plan.....	33
8.3	Monitoring and Review Procedures.....	33
8.4	Performance Measures	34
9.0	REFERENCES	35
10.0	APPENDICES	36
Appendix A	Acquisition Forecast.....	36
Appendix B	Operation Forecast	37
Appendix C	Maintenance Forecast	38
Appendix D	Renewal Forecast Summary	39
Appendix E	Disposal Summary	40
Appendix F	Budget Summary by Lifecycle Activity	41
Appendix G	Water Network Maps	42

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AMP) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 20 year planning period. The AMP will link to a Long-Term Financial Plan (LTFP) which typically considers a 10 year planning period.

This plan covers the infrastructure assets that provide Water Infrastructure.

1.2 Asset Description

The Water network comprises:

- Water Pipes
- Water Nodes
- Water Pumping, Storage and Treatment Assets

The above infrastructure assets have significant total renewal value estimated at \$4,655,135.

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

The main service consequences of the Planned Budget are:

- Unable to renew all assets at the optimum time

1.4 Future Demand

The main demands for new services are created by:

- New Development / Connections
- Tourism
- Regulatory Changes

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AMP includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AMP may be prepared for a range of time periods, it typically informs a LTFP period of 10 years. Therefore, a summary output from the AMP is the forecast of 10 year total outlays, which for Water is estimated as \$3,117,813 or \$311,781 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is \$3,076,000 or \$307,600 on average per year as per the LTFP or Planned Budget. This is 98.66% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the LTFP can be provided. The Informed decision making depends on the AMP emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Water Infrastructure leaves a shortfall of \$4,181 on average per year of the forecast lifecycle costs required to provide services in the AMP compared with the Planned Budget currently included in the LTFP. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

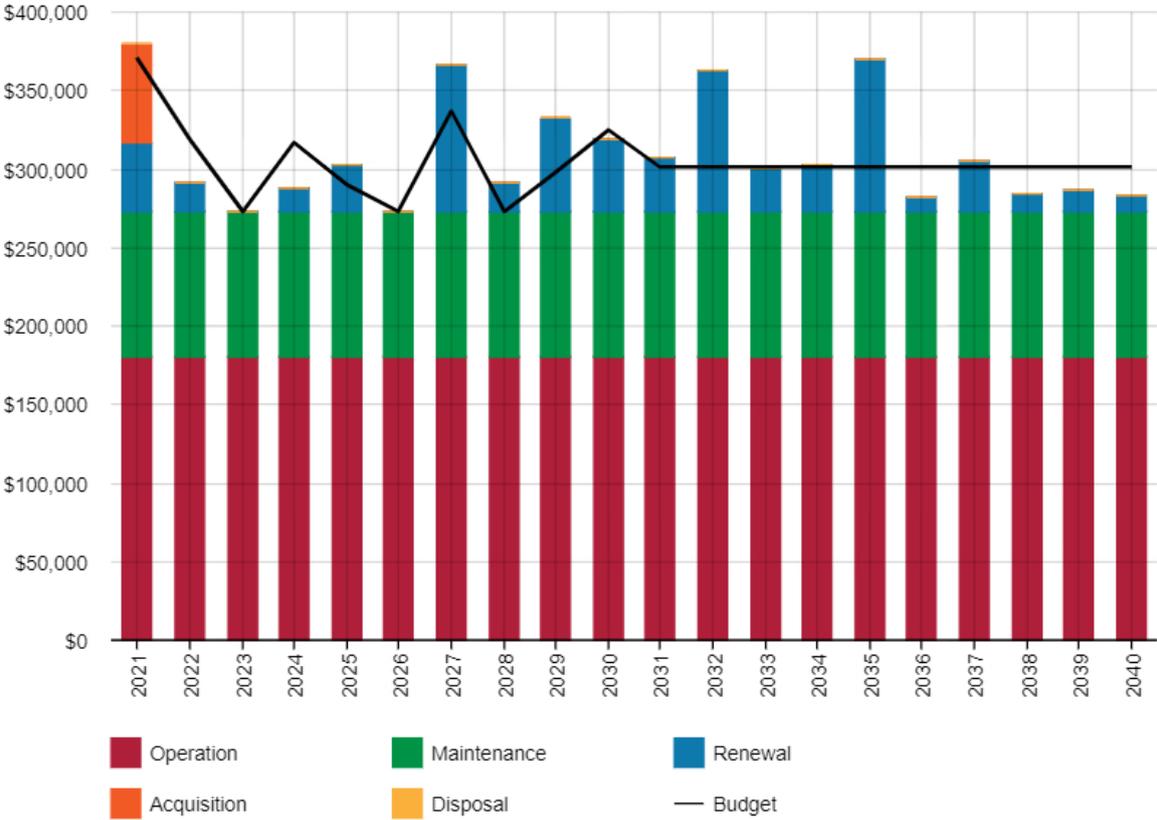


Figure Values are in current dollars.

We plan to provide Water services for the following:

- Operation, maintenance, renewal and upgrade of Water assets to meet service levels set by Council in annual budgets.

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Renew all Water assets when required

1.6.3 Managing the Risks

Our present budget levels are insufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Failure to maintain the existing Water network to a safe and serviceable standard
- Failure to undertake inspections of the existing Water network

We will endeavour to manage these risks within available funding by:

- Ensuring sufficient funding to maintain the Water network at an appropriate level
- Prioritise all works required
- Document all inspections and complaints

1.7 Asset Management Practices

Our systems to manage assets include:

- Authority (enterprise resource planning system)
- Conquest (asset management system)

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs this is done using the acquisition year and the useful life,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

The Water Asset Register was used to forecast the renewal life cycle costs for this AMP.

1.8 Monitoring and Improvement Program

The next steps resulting from this AMP to improve asset management practices are:

- Continual review of Asset Register
- Development of agreed Levels of Service in consultation with the community
- Increased definition of performance standards through customer engagement to assess expectations
- Improvement to Risk identification and management
- Develop 3-5 Year Capital Renewal Program
- Continual collection and review of condition data

2.0 Introduction

2.1 Background

This AMP communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

The AMP is to be read with Council planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Yorke Peninsula Council Strategic Management Plan 2021-2025
- Yorke Peninsula Council Long Term Financial Plan 2021-2030
- Yorke Peninsula Council Annual Business Plan and Budget
- Yorke Peninsula Council Potable Water Infrastructure Asset Valuation & Methodology 1 July 2019

The infrastructure assets covered by this AMP include pipes, water meters, storage and treatment assets in the townships of Balgowan, Black Point, Hardwicke Bay and Marion Bay. For a detailed summary of the assets covered in this AMP refer to Table in Section 5.

These assets are used to provide potable Water to the above communities.

The infrastructure assets included in this plan have a total replacement value of \$4,655,135.

Key stakeholders in the preparation and implementation of this AMP are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Community	The main stakeholders in the AMP and the key beneficiaries of the services are the community. It is the community who contribute funding through payment of rates and communicate their satisfaction (or otherwise) with services through contact with Council.
Councillors	Represent needs of community/shareholders
	Allocate resources to meet planning objectives in providing services while managing risks
	Ensure service sustainable
Corporate Management Team	Endorse the development of AMPs and provide resources required to complete this task. Set high level priorities for asset management development in Council and raise the awareness of this function among Council staff and contractors. Support the implementation of actions resulting from this plan and be prepared to make changes to a better way of managing assets and delivering services. Support for an asset management driven budget and LTFP.
Staff	Manage the infrastructure with resources provided by Council within the allocated budget.

2.2 Goals and Objectives of Asset Ownership

Our goal in managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a LTFP which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 ¹
- ISO 55000²

¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

The Council has not carried out any research on customer expectations. This will be investigated for future updates of the AMP.

3.2 Strategic and Corporate Goals

This AMP is prepared under the direction of the Council vision, mission, goals and objectives.

Our vision is:

“Prosperous, diverse and uniquely spectacular – Yorke Peninsula”

Our mission is:

- We will foster a climate where Yorke Peninsula can thrive as a prosperous network of multi-generational communities.
- We will deliver services that enhances the Peninsula’s reputation as a vibrant, easily accessible coastal and food production region.
- We will celebrate and protect our unique and pristine environment.
- We will continue to support our diversity of sustainable industries and lifestyles.

Strategic goals have been set by the Council. The relevant goals and objectives and how these are addressed in this AMP are summarised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AMP
Community Connected through infrastructure	Develop and deliver on AMPs for all asset classes	Water AMP developed and adopted by Council.
	Explore Provision of new infrastructure	New infrastructure provided as required
Valued and Restored Environment	Deliver projects and services that have direct environmental benefits	Reduced water and electricity consumption by Council
Responsible Governance and Leadership	Openness and transparency of reporting Council’s performance	Asset renewal funding ratio
	Effective leadership and informed decision making	Net financial liabilities ratio
	Meet all legislative requirements and compliance with Council’s internal controls	

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Water service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by AMPs for sustainable service delivery.
SA Public Health Act and Regulations	Promote and to provide for the protection of the health of the public of South Australia and to reduce the incidence of preventable illness, injury and disability.
Environment Protection Act and Regulations	Provides for the protection of the environment.
Water Industry Act and Regulations	To facilitate planning in connection with water demand and supply.
Work Health and Safety Act and Regulations	To provide for the health, safety and welfare of persons at work.
Australian Drinking Water Guidelines	An authoritative reference to the community and the water supply industry on what defines safe, good quality water, how it can be achieved and how it can be assured.
Office of the Technical Regulator	Monitors compliance with legislation and applicable technical standards in the electricity, gas and water industries.

3.4 Customer Values

Service levels are defined in three ways:

- customer values
- customer levels of service
- technical levels of service

Customer Values indicate:

- what aspects of the service is important to the customer?
- whether they see value in what is currently provided and
- the likely trend over time based on the current budget provision

Table 3.4: Customer Values

Service Objective:			
Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Provision of potable water to meet community and industry standards	Customer Requests and Community Feedback	Moderate number of Customer Requests and Community Feedback	Not anticipated to change

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service ... what is the condition or quality of the service?

Function Is it suitable for its intended purpose Is it the right service?

Capacity/Use Is the service over or under used ... do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Provide a restricted potable water supply	Customer feedback and community satisfaction	Monitored through Customer Service Requests, correspondence, etc. <50	Not anticipated to change
	Confidence levels		High	
Function	Water network is appropriately maintained	Customer feedback and community satisfaction	Monitored through Customer Service Requests, correspondence, etc. <50	Not anticipated to change
	Meets relevant legislative requirements	Complies with legislative requirements	Complies with legislative requirements	
	Confidence levels		High	High
Capacity	Water network has the capacity to accept current and projected usage for each township	New developments can connect to the Water network	Less than 20 new connections per year in total for all schemes Each scheme has capacity for new connections	Not anticipated to change
	Confidence levels		High	

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new storage tank).
- **Operation** – the regular activities to provide services such as regular inspections of the water network.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. pipe repairs).
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. pipeline or treatment plant component replacement).

Departmental staff plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AMP.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Upgrade of Water assets are identified through design and new technology	Identified assets to be upgraded are included in annual budget discussion and budget	Planned upgrade work is undertaken as per current upgrade program and budget	Developed program for upgrade of Water assets
		Budget	<i>Budget – Current (reviewed annually)</i>	<i>Budget – Current (reviewed annually)</i>
Operation	Water network meets user and regulatory requirements	Inspections of network	Quarterly inspections and repairs of network in line with water meter reading. Quarterly water quality testing. Annual backflow prevention device inspections.	Current Performance
		Budget	<i>Budget – Current (reviewed annually)</i>	<i>Budget – Current (reviewed annually)</i>
Maintenance	Water network is well maintained and meets customer and legislative requirements	Regular maintenance program and Customer Service Requests completed in a reasonable timeframe	Planned maintenance is undertaken as and where required. Customer Service Requests are actioned in a timeframe determined by their priority.	Current Performance
		Budget	<i>Budget – Current (reviewed annually)</i>	<i>Budget – Current (reviewed annually)</i>
Renewal	Renewal of Water assets as required and at	Assets renewed as per current renewal program and budget	Planned renewal work is undertaken as per current renewal program and budget	Developed asset renewal program Established Renewal Priority Ranking Criteria

³ IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	the optimum timeframe			
		Budget	<i>Budget – Current (reviewed annually)</i>	<i>Budget – Current (reviewed annually)</i>
Disposal	Disposal of assets no longer required	As identified by staff or from community request	As identified by staff or from community request	As identified by staff or from community request
		Budget	<i>Budget – identified during annual budget process</i>	<i>Budget – identified during annual budget process</i>

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

4.0 FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this AMP.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
New Development / Connections	Growth through new houses and small land division connections	Expected to continue	Impact on existing supply and storage capacity	Planning, priority and budget considerations for upgrade and maintenance of storage systems
Tourism	Increased demand on some township services during peak holiday periods	Expected to continue	Impact on existing supply and storage capacity	Planning, priority and budget considerations for upgrade and maintenance of storage systems
Regular changes to Water standards and guidelines	Regulatory standards are managed by the Infrastructure Manager	Additional operational and reporting requirements	Additional operational and reporting costs	Costs to be monitored and considered during annual budget planning process

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the LTFP (Refer to Section 5).

4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Buildings resilience will have benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AMP.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

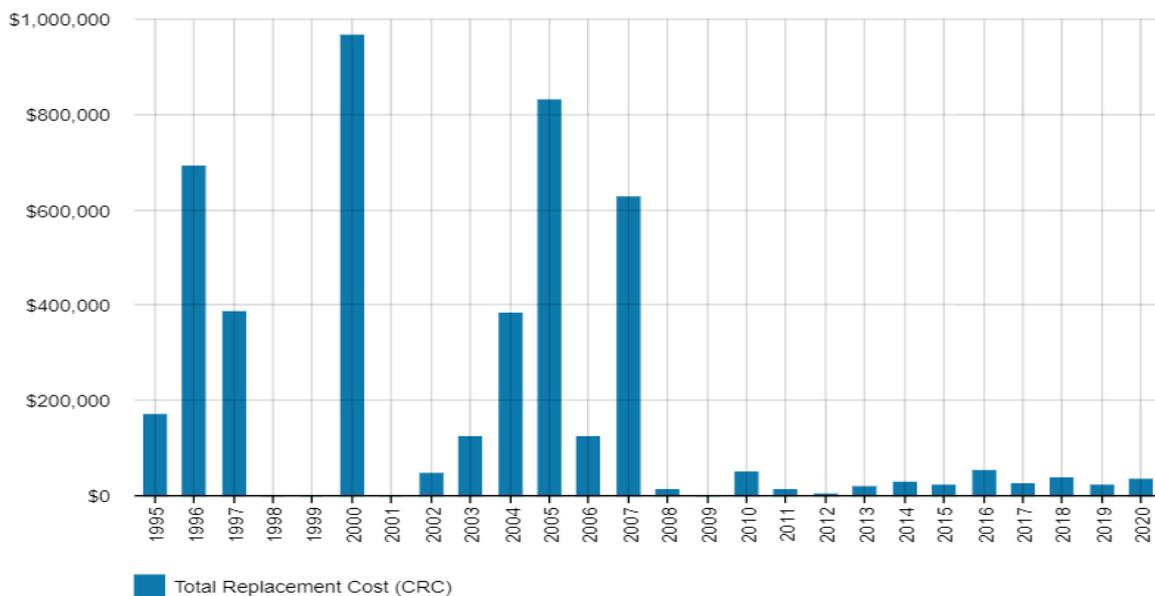
The assets covered by this AMP are shown in Table 5.1.1.

The age profile of the assets included in this AMP are shown in Figure 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Water Pipe	Connection (5320m) Main (26326m) Water Line (1487m) Salt Water Line (1339m)	\$3,068,088
Water Nodes	Air Valve (25) End Cap (12) Fire Hydrant (1) Fire Plug (51) Gate Valve (7) Reducer (13) Seat Gate Valve (4) Stop Valve (26) Water Meter (821)	\$ 337,855
Pumping, Treatment & Storage	Pumps (11) Tanks (18) Treatment Plant	\$1,249,192
TOTAL		\$4,655,135

Figure 5.1.1: Asset Age Profile



All figure values are shown in current day dollars.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Balgowan, Black Point and Hardwicke Bay Water Schemes	Lack of SA Water supply during peak load periods
Balgowan	Inferior tapping saddles initially installed. Continue program to replace with stainless steel saddles.
Marion Bay	Corrosive nature of desalinated water on infrastructure. Current location of the beach well.
All schemes	Network leakage. Program regular inspections and continual monitoring.

The above service deficiencies were identified from inspections, maintenance records, staff knowledge and customer feedback.

5.1.3 Asset condition

Condition of Water assets is monitored by Council staff but a full condition profile has not yet been developed for the entire Water network. Council currently undertake regular inspections of the network and this will be used to develop a condition profile in a future reiteration of this plan.

Condition is measured using a 1 – 5 grading system⁴ as detailed in Table 5.1.3. It is important that consistent condition grades be used in reporting various assets across an organisation. This supports effective communication. At the detailed level assets may be measured utilising different condition scales, however, for reporting in the AMP they are all translated to the 1 – 5 grading scale.

Table 5.1.3: Simple Condition Grading Model

Condition Grading	Description of Condition
1	Very Good: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Fair: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

The condition profile of our assets will be shown in a future reiteration of this plan.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

⁴ IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

The trend in operations / maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Operations / Maintenance Budget Trends

Year	Total Operations / Maintenance Budget \$ *
2018/19	\$239,000
2019/20	\$284,000
2020/21	\$273,000
2021/22	\$275,000

Note * 2021/22 Estimated budget

Operations and Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AMP and service risks considered in the Infrastructure Risk Management Plan.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

Asset hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for service planning and delivery.

The service hierarchy is shown in Table 5.2.2.

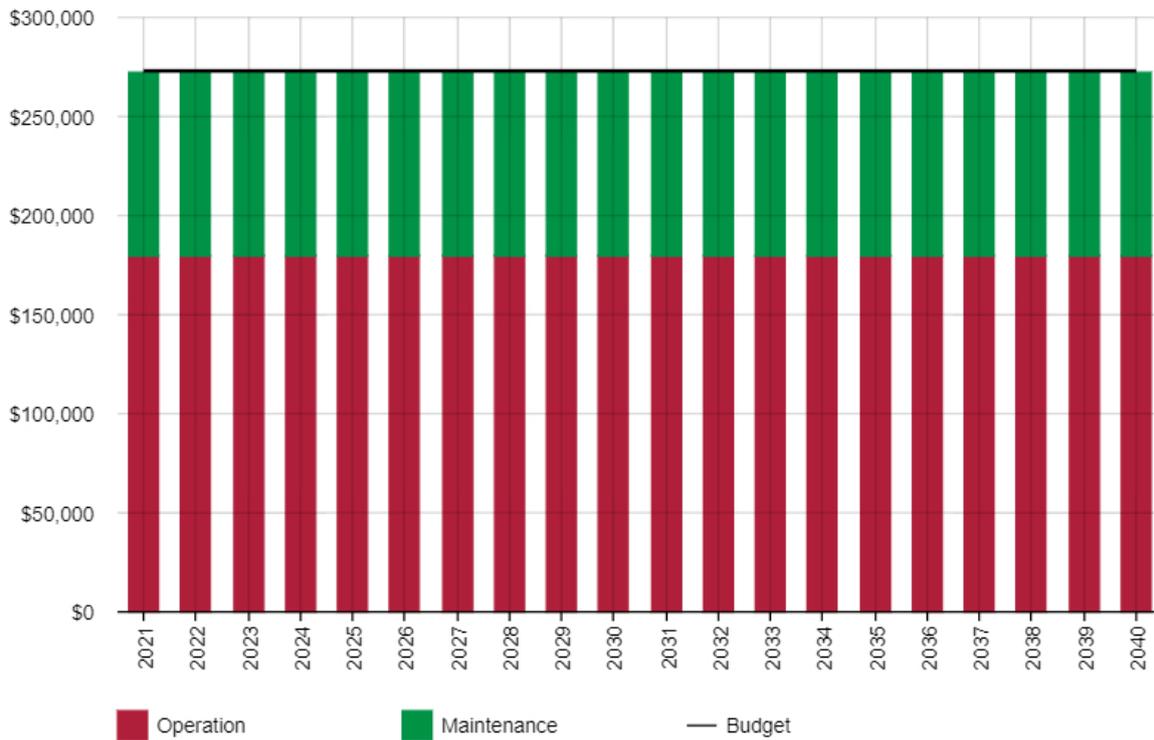
Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Nodes	Conveyance of water from storage to user
Pipes	Conveyance of water from storage to user
Pumping, Treatment and Storage	Conveyance of water from source to user Treatment of water to a standard suitable for drinking in accordance with regulatory standards

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

It is anticipated that the operations and maintenance costs will remain constant over the forecast period, with these costs increasing if new assets are constructed or gifted to the Council.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, 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 to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed on 1 July 2019.⁵

⁵ Yorke Peninsula Council Potable Water Infrastructure Asset Valuation & Methodology 1 July 2019

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Nodes	25 to 60 years
Pipes	60 to 100 years
Pumping, Storage and Treatment	10 to 50 years

The estimates for renewals in this AMP were based on the asset register.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. tank storage capacity), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. water quality).⁶

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁷

The ranking criteria, used as a guide, to assist Council determine priority of identified renewal and replacement proposals is detailed in Table 5.3.1.

Table 5.3.1: Renewal Priority Ranking Criteria Guide

Criteria
Breakages
Condition
Water Quality Standard
Available Budget

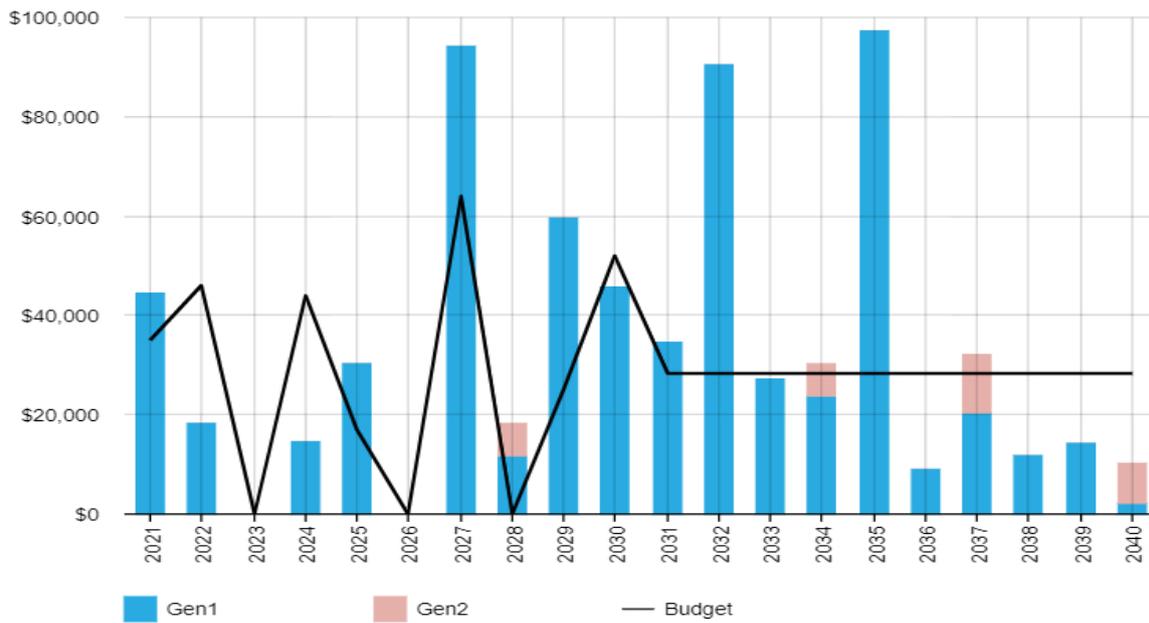
5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

⁶ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁷ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Figure 5.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

The forecast renewal requirements for the first 6 years of the plan are lower than current proposed budget allocation in the LTFP, however this changes with years 7 to 9 being under funded.

5.5 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Council.

5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The ranking criteria, used as a guide, to assist Council determine priority of identified acquisition/upgrade proposals is detailed in Table 5.4.1.

Table 5.5.1: Acquired Assets Priority Ranking Criteria Guide

Criteria
Cost benefit analysis
Service Deficiency
Environmental
Usage
Available Budget

Summary of future asset acquisition costs

When Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Council.

Expenditure on new assets and services in the capital works program will be accommodated in the LTFP, but only to the extent that there is available funding.

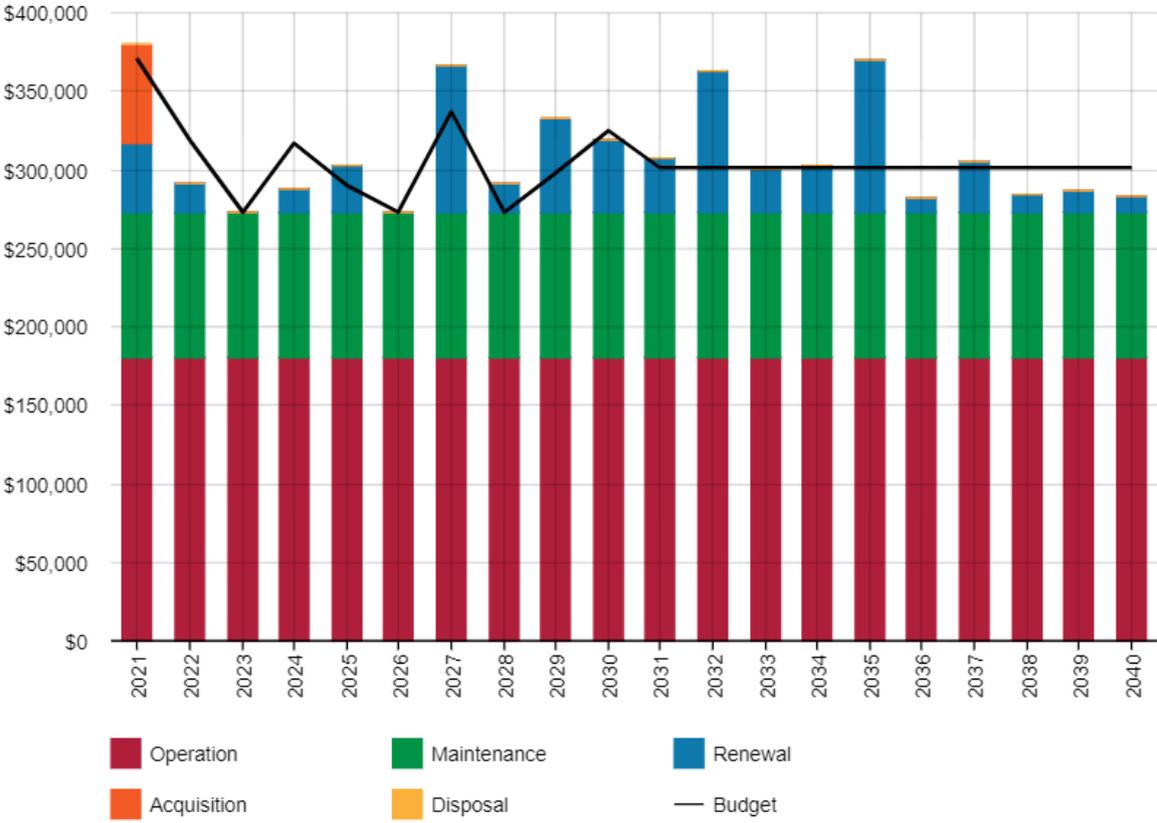
Newly identified upgrade/new projects will be presented to Council for consideration during the budget process each year. Council has budgeted \$63,000 for the construction of new assets in the 2020/21 financial year

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

The current planned budget is not sufficient to replace all assets that are due for renewal and consideration should be taken during annual budget deliberations and review of the LTFP to accommodate additional funding to address this shortfall.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the LTFP.

Table 5.6: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
No assets currently identified for disposal				

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’⁸.

An assessment of risks⁹ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Water Supply Storage Tanks	No Storage No Supply	Unable to supply water to customer
Pump Failure	No supply	Potential impact on supply of water to consumer
Pipe Break	No supply	Potential impact on supply of water to consumer
External Party Damage to Pipes	External Party digging through pipes.	Potential impact on supply of water to consumer

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

⁸ ISO 31000:2009, p 2

⁹ Yorke Peninsula Council Strategic Management Plan 2021-2025, PO091 Risk Management Policy, Strategic Risk Register & Organisational Risk Register

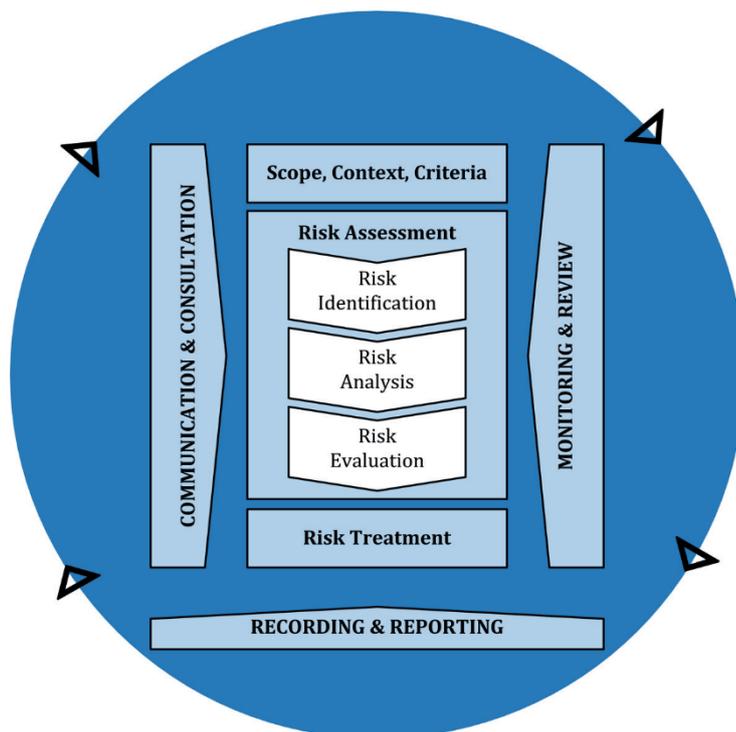


Fig 6.2 Risk Management Process – Abridged
 Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks¹⁰ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences.

Critical risks are those assessed with ‘Very High’ (requiring immediate corrective action) and ‘High’ (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management and Council.

¹⁰ Risks and Treatment have been identified but not assessed, this will be undertaken as part of Council’s Risk Management program

Table 6.2: Risks and Treatment Plans¹⁰

Service or Asset at Risk	What can Happen	Risk Rating (E, H, M & L)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Water Supply	No SA Water Supply		Water supply is restricted and not guaranteed by Council		Current Budget
Water Storage Tanks	No storage No Supply		Water supply is restricted and not guaranteed by Council		Current Budget
Pump Failure	No supply		Telemetry monitoring of systems. Backup pumps available. Staff on call		Current Budget
Pipe Break	No supply		Regular maintenance		Current Budget
External Party Damage to Pipes	External Party digging through pipes		Dial Before You Dig (DBYD) Member – notified when external parties intend to undertake excavation works on Council roads, footpaths or land. External parties required to complete SF039 Application to Carry Out Work on Council's Roads or Footpaths prior to laying underground services.		Current Budget

Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented.

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', 1 and to respond to possible disruptions to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity, climate change and crisis leadership.

We do not currently measure our resilience in service delivery. This will be included in future iterations of the AMP.

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AMP are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Upgrade all Water assets when required

6.4.2 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- Not all assets will be renewed at the optimum time
- Deterioration of assets

6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Water supply to customers may be impacted

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

7.0 FINANCIAL SUMMARY

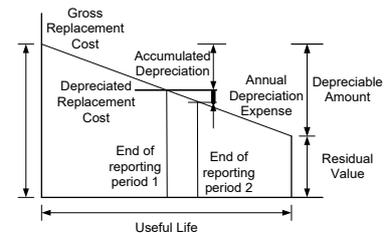
This section contains the financial requirements resulting from the information presented in the previous sections of this AMP. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this AMP are shown below. The assets are valued at Current Replacement Cost (CRC) of an asset minus any accumulated depreciation and impairment losses:

Current (Gross) Replacement Cost	\$4,655,135
Depreciable Amount	\$4,655,135
Depreciated Replacement Cost ¹¹	\$3,363,834
Depreciation	\$81,105



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AMP for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio¹² 87%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 87% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

This AMP identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$305,841 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$301,300 on average per year giving a 10 year funding shortfall of \$4,181 per year. This indicates that 99% of the forecast costs needed to provide the services documented in this AMP are accommodated in the proposed budget. This excludes acquired assets.

¹¹ Also reported as Written Down Value, Carrying or Net Book Value.

¹² AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AMP and ideally over the 10 year life of the LTFP.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) for the 10 year LTFP.

Forecast costs are shown in 2021 dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2021	\$63,000	\$180,000	\$93,000	\$44,313	\$0
2022	\$0	\$180,000	\$93,000	\$18,263	\$0
2023	\$0	\$180,000	\$93,000	\$0	\$0
2024	\$0	\$180,000	\$93,000	\$14,580	\$0
2025	\$0	\$180,000	\$93,000	\$30,290	\$0
2026	\$0	\$180,000	\$93,000	\$0	\$0
2027	\$0	\$180,000	\$93,000	\$93,993	\$0
2028	\$0	\$180,000	\$93,000	\$18,278	\$0
2029	\$0	\$180,000	\$93,000	\$59,421	\$0
2030	\$0	\$180,000	\$93,000	\$45,675	\$0
2031	\$0	\$180,000	\$93,000	\$34,577	\$0
2032	\$0	\$180,000	\$93,000	\$90,475	\$0
2033	\$0	\$180,000	\$93,000	\$27,050	\$0
2034	\$0	\$180,000	\$93,000	\$30,272	\$0
2035	\$0	\$180,000	\$93,000	\$97,135	\$0
2036	\$0	\$180,000	\$93,000	\$9,030	\$0
2037	\$0	\$180,000	\$93,000	\$32,127	\$0
2038	\$0	\$180,000	\$93,000	\$11,772	\$0
2039	\$0	\$180,000	\$93,000	\$14,122	\$0
2040	\$0	\$180,000	\$93,000	\$10,471	\$0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council’s budget and LTFP.

The financial strategy of the Council determines how funding will be provided, whereas the AMP communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this AMP, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AMP and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AMP are:

- The current operations and maintenance budgets are adequate to manage the Water network
- Current day dollars have been used
- Asset Register is reliable
- Renewal forecasts have been made by professional judgement
- Legislative compliance will remain constant

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale¹³ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$
B. Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$
C. Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$
D. Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy $\pm 40\%$
E. Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this AMP is shown in Table 7.5.2.

¹³ IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Reliable	
Growth projections	Reliable	
Acquisition forecast	Uncertain	Current knowledge of future upgrade of assets. Forecast is also dependent on annual budget process and the success of future grant applications
Operation forecast	Reliable	Current and previous budget information
Maintenance forecast	Reliable	Current and previous budget information
Renewal forecast - Asset values	Reliable	Generated from CONQUEST. Data reviewed and updated annually. Valuation 1 July 2019
- Asset useful lives	Reliable	Generated from CONQUEST. Data reviewed and updated annually. Valuation 1 July 2019
- Condition modelling	Unknown	
Disposal forecast	Reliable	

The estimated confidence level for and reliability of data used in this AMP is considered to be Reliable.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹⁴

8.1.1 Accounting and financial data sources

This AMP utilises accounting and financial data. The source of the data is *Authority* from Civica.

8.1.2 Asset management data sources

This AMP also utilises asset management data. The source of the data is *Conquest*.

8.2 Improvement Plan

It is important that Council recognise areas of their AMP and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AMP is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Continual review of Asset Register	Asset Manager / Infrastructure Manager	In house	Ongoing
2	Development of agreed Levels of Service in consultation with the community	Director Assets & Infrastructure	In house	Ongoing
3	Increased definition of performance standards through customer engagement to assess expectations	Director Assets & Infrastructure	In house	Ongoing
4	Improvement to Risk Identification	Director Assets & Infrastructure	In house	Ongoing
5	Develop 3-5 Year Capital Renewal Program	Asset Manager / Infrastructure Manager	In house	Ongoing
6	Continual collection and review of condition data	Asset Manager / Infrastructure Manager	In house or Budget	Ongoing

8.3 Monitoring and Review Procedures

This AMP will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AMP will be reviewed and updated bi-annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the LTFP or will be incorporated into the LTFP once completed.

The AMP has a maximum life of 4 years and is due for complete revision and updating within two years of each Council election.

¹⁴ ISO 55000 Refers to this the Asset Management System

8.4 Performance Measures

The effectiveness of this AMP can be measured in the following ways:

- The degree to which the required forecast costs identified in this AMP are incorporated into the LTFP.
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures take into account the 'global' works program trends provided by the AMP.
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Plan and associated plans.
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).
- The Asset Renewal Funding Ratio (previously Asset Sustainability Ratio Per LGA 'Financial Sustainability' Information Paper No. 9: Financial Indicators - Revised May 2015) is to achieve capital outlays on renewing/replacing assets at greater than 90% but less than 110% of the level proposed in the AMP.

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Yorke Peninsula Council Strategic Management Plan 2021-2025
- Yorke Peninsula Council Annual Business Plan and Budget
- Yorke Peninsula Council Long Term Financial Plan 2021-2030
- Yorke Peninsula Council Potable Water Infrastructure Asset Valuation and Methodology 1 July 2019

10.0 APPENDICES

Appendix A Acquisition Forecast

Newly identified upgrade/new projects will be presented to Council for consideration during the budget process each year. Council has budgeted \$63,000 for the construction of new assets in the 2020/21 financial year.

Appendix B Operation Forecast

Operation costs are expected to remain constant for the foreseeable future. Forecast costs are shown in 2020/21 dollar values.

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2021	\$180,000	\$0	\$180,000
2022	\$180,000	\$0	\$180,000
2023	\$180,000	\$0	\$180,000
2024	\$180,000	\$0	\$180,000
2025	\$180,000	\$0	\$180,000
2026	\$180,000	\$0	\$180,000
2027	\$180,000	\$0	\$180,000
2028	\$180,000	\$0	\$180,000
2029	\$180,000	\$0	\$180,000
2030	\$180,000	\$0	\$180,000
2031	\$180,000	\$0	\$180,000
2032	\$180,000	\$0	\$180,000
2033	\$180,000	\$0	\$180,000
2034	\$180,000	\$0	\$180,000
2035	\$180,000	\$0	\$180,000
2036	\$180,000	\$0	\$180,000
2037	\$180,000	\$0	\$180,000
2038	\$180,000	\$0	\$180,000
2039	\$180,000	\$0	\$180,000
2040	\$180,000	\$0	\$180,000

Appendix C Maintenance Forecast

Maintenance costs are expected to remain constant for the foreseeable future. Forecast costs are shown in 2020/21 dollar values.

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2021	\$93,000	\$0	\$93,000
2022	\$93,000	\$0	\$93,000
2023	\$93,000	\$0	\$93,000
2024	\$93,000	\$0	\$93,000
2025	\$93,000	\$0	\$93,000
2026	\$93,000	\$0	\$93,000
2027	\$93,000	\$0	\$93,000
2028	\$93,000	\$0	\$93,000
2029	\$93,000	\$0	\$93,000
2030	\$93,000	\$0	\$93,000
2031	\$93,000	\$0	\$93,000
2032	\$93,000	\$0	\$93,000
2033	\$93,000	\$0	\$93,000
2034	\$93,000	\$0	\$93,000
2035	\$93,000	\$0	\$93,000
2036	\$93,000	\$0	\$93,000
2037	\$93,000	\$0	\$93,000
2038	\$93,000	\$0	\$93,000
2039	\$93,000	\$0	\$93,000
2040	\$93,000	\$0	\$93,000

Appendix D Renewal Forecast Summary

The Yorke Peninsula Council recommends the renewal of assets at the optimum time and based on their current condition. The renewal forecast shows a shortfall in funding with the current planned budget. Forecast costs are shown in 2020/21 dollar values.

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Current LTFP Renewal Budget*	Annual Renewal Budget Shortfall	Cumulative Renewal Budget Shortfall
2021	\$44,313	\$35,000	-\$9,313	-\$9,313
2022	\$18,263	\$46,000	\$27,737	\$18,424
2023	\$0	\$0	\$0	\$18,424
2024	\$14,580	\$44,000	\$29,420	\$47,844
2025	\$30,290	\$17,000	-\$13,290	\$34,554
2026	\$0	\$0	\$0	\$34,554
2027	\$93,993	\$64,000	-\$29,993	\$4,561
2028	\$18,278	\$0	-\$18,278	-\$13,717
2029	\$59,421	\$25,000	-\$34,421	-\$48,138
2030	\$45,675	\$52,000	\$6,325	-\$41,813
2031	\$34,577	\$28,300	-\$6,277	-\$48,090
2032	\$90,475	\$28,300	-\$62,175	-\$110,265
2033	\$27,050	\$28,300	\$1,250	-\$109,015
2034	\$30,272	\$28,300	-\$1,972	-\$110,987
2035	\$97,135	\$28,300	-\$68,835	-\$179,822
2036	\$9,030	\$28,300	\$19,270	-\$160,552
2037	\$32,127	\$28,300	-\$3,827	-\$164,379
2038	\$11,772	\$28,300	\$16,528	-\$147,851
2039	\$14,122	\$28,300	\$14,178	-\$133,673
2040	\$10,471	\$28,300	\$17,829	-\$115,844

Note * Years 2031-2040 are the average of the first 10 years Current LTFP Renewal Budget figures

Appendix E Disposal Summary

At this stage there are no assets identified for disposal.

Appendix F Budget Summary by Lifecycle Activity

The following budget summary is based on the Yorke Peninsula Council 2020/21 Budget and the Long Term Financial Plan 2021-2030. Budget summary costs are shown in 2020/21 dollar values.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Current LTFP Renewal Budget*	Disposal	Total
2021	\$63,000	\$180,000	\$93,000	\$35,000	\$0	\$371,000
2022	\$0	\$180,000	\$93,000	\$46,000	\$0	\$319,000
2023	\$0	\$180,000	\$93,000	\$0	\$0	\$273,000
2024	\$0	\$180,000	\$93,000	\$44,000	\$0	\$317,000
2025	\$0	\$180,000	\$93,000	\$17,000	\$0	\$290,000
2026	\$0	\$180,000	\$93,000	\$0	\$0	\$273,000
2027	\$0	\$180,000	\$93,000	\$64,000	\$0	\$337,000
2028	\$0	\$180,000	\$93,000	\$0	\$0	\$273,000
2029	\$0	\$180,000	\$93,000	\$25,000	\$0	\$298,000
2030	\$0	\$180,000	\$93,000	\$52,000	\$0	\$325,000
2031	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2032	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2033	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2034	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2035	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2036	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2037	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2038	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2039	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300
2040	\$0	\$180,000	\$93,000	\$28,300	\$0	\$301,300

Note * Years 2031-2040 are the average of the first 10 years Current LTFP Renewal Budget figures

Appendix G Water Network Maps

Legend

