Water Asset Management Plan

April 2023

Version No. 3

1 – IPWEA, 2011, IIMM, p2.22

How to use this Plan

This Asset Management Plan (AMP) is a tactical document to support Councils understanding of its Water Assets, service levels, risks and to provide operational and capital expenditure forecasts that will deliver the community outcomes detailed in the Community Strategy 2022-2032. The AMP is set out in the following format to support easy navigation of its contents such that specific information can be readily identified to suit the reader's need.

- Executive Summary
  This provides an overview suitable for obtaining a high-level understanding of the key issues and outcomes of the AMP. This is intended for senior decision makers and is supported by the detail in the following sections that make up the body of the AMP.

- Section 1 - Introduction
  This section is the introduction that defines the plan's purpose, its scope and how the AMP aligns with corporate objectives and goals. It 'sets the scene' for the AMP and how it relates to the wider organisational plan framework.

- Section 2 – Data Details
  Defines the AMP's data inputs and assumptions. It includes the Asset Summary, Prior Year Infrastructure Delivery, Asset Age, Asset Condition Assessment Criteria, Results Summary, Asset profiling, Hierarchy, Useful Life and Data confidence ratings.

- Sections 3,4, and 5 – AMP Inputs (Service levels, Risk and Growth)
  Defines Councils' service levels, current risks and demand considerations that have been used in developing this AMP. This is the basis on which the following sections have been developed.

- Sections 6,7,8,9 and 10 - 10-year forecasts
  Provides the detailed 'output' of the AMP development process with forecasts over a 10-year horizon of the works required to maintain the current service levels, mitigate identified risks and cater for service growth and increased demand.

- Sections 11,12 and 13 – Financial forecasts
  Focus on the financial aspects of the delivering these service levels including anticipated 'financial sustainability' performance. This section is particularly relevant to inform decision making and guide continual improvement in both the AMP and achieving corporate goals.

- Section 14 – Findings and Recommendations
  Provides a summary of the key issues and actions to be considered by Council. It includes a statement on the reliability and confidence of information to also be considered.

- Section 15-AMP Improvement Plan
  Provides an action plan improve future iterations of the AMP, particularly the improvement of the plan's accuracy and reliance as a decision-making tool.

- Appendices
  Information which is required in the AMP as reference is in the appendices. It also includes detailed works programs for new and renewal capital works that align with funding requirements and are to be aligned with short to medium term detailed operational planning.

1 – IPWEA, 2011, IIMM, p2.22

Document Control

Distribution / Stakeholder list

All key stakeholders are to be included on the distribution list.

Name	Initial	Date	Title/Business Unit
Jack Terblanche			Director Infrastructure and Planning
Mark Dowling			Director of Corporate & Community
Greg Stewart			Manager Operations
Kate Stephens			Manager Finance

- *Stakeholders are initial the final document to indicate that the report has been signeted and reviewed.*

Revision History

Document Version	Date	Comments	Author	Reviewer
1	15/1/22	Initial Draft	David Webb	Mark Dowling
2	16/06/22	Revision	David Webb	Mark Dowling
3	1/4/2023	Revision/Update	David Webb	Mark Dowling

Certification

As the Principal officer/Asset Custodian responsible for preparing this AMP, I certify that if:

- Has been on a series of assumptions and the best available data at the time;
- Provides a rationale for and underpins the renewal funding as specified in the related 10-year service financial forecasts; and
- Provides a strong platform from which to continue asset management advancement by identifying several areas for further improvement.

Principal Officer (if applicable):_____ Signature:_____

Asset Custodian:_____ Signature_____

Date:_____

1 – IPWEA, 2011, IIMM, p2.22

Contents

1 – IPWEA, 2011, IIMM, p2.22

1 – IPWEA, 2011, IIMM, p2.22

1 – IPWEA, 2011, IIMM, p2.22

Executive Summary

Purpose

The purpose of this Asset Management Plan (AMP) is to consolidate Councils understanding of its Water Assets, service levels, risks and to provide operational and capital expenditure forecasts that will deliver the community outcomes detailed in the Community Strategic Plan 2022-2032.

The plan will support informed decision making, guide Long Term Financial Planning budget requirements and provide a path to further improve the accuracy and confidence in future iterations of this plan.

Scope

This Asset Management Plan (AMP) covers the Water Assets (the Assets) that support the delivery of services to the Hay Shire Council (Council) Community. It has been prepared based on the International Infrastructure Management Manual (IIMM) the recognised guideline for asst management in Australia.

The AMP uses data available within Council in 2021 including Council's audited financial asset register, based on revaluations undertaken by APV in 2021. Where possible, the financial register has been supplemented by historical condition data.

The Assets

The Water Assets are valued at $26.289M and are apportioned into asset categories as detailed in Table 1 below:

Table 1: Water Assets Summary

Asset Type	Replacement Value (June 2021) ($000)
Intake Works	$1,745
Mains	$14,119
Reservoirs	$5,125
Treatment Plant	$5,300
Total	*$26,289*

Asset Condition

65% of Council's assets are in excellent or good condition with the remaining 35% in either satisfactory or poor condition. Council's water mains and treatment plant are the areas in most need of attention.

Are We Meeting Our Adopted Service Levels?

Council is currently developing levels of service standards and performance measures. The maintenance and operations expenditure projections in this AMP are based on historical spending and therefore it may be assumed that similar future funding and if supported with appropriate investment in renewal will continue to provide current service levels.

1 – IPWEA, 2011, IIMM, p2.22

Are we managing Growth?

This AMP uses Council's adopted growth rate 1%. The current assets are expected to meet the required service capacity for increased population, Council must consider the future implications that a growing asset base has on its operations and maintenance costs.

Are We Managing Our Risks?

Council is managing risks by developing strategies and policies as well as making resources available to provide services to the community. Council has a 'duty of care' to the community, its customers, in relation to the management of the assets. There are some types of risks Council is concerned about, including financial, service and safety. The risks were assessed by Council based on their likelihood and consequences to generate solutions to mitigate or eliminate them. It is expected that the current maintenance activities will continue to assist will continue to assist in mitigating the service risks to an acceptable level. Additional funding is required to mitigate risks associated with AM practices and reliance on this AMP.

The Financials

Based on renewing current asset at the end of their useful lives, meeting current levels of service and to provide for future growth, over the next 10 years the projected expenditure is as follows:-

- Pump Stations $354k
- Reservoirs $585k
- Filtration Plant $2,120k
- Mains $2,866k

  Total *$5,925k*

Council's Long-Term Financial Plan (LTFP) has allocated funding for transport Capital expenditure as shown in Table 2 Long Term Financial Plan below. In preparing this plan is has been assumed that Current levels of operation and maintenance funding will continue.

Council's LTFP fully funds the transport new/upgrade, asset renewals. Operations and maintenance programs.

Table 2: Long Term Financial Plan - (000's)

Financial Year Ending	Operations & Maintenance	Renewals	Total
2022	$955	$347	$1,302
2023	$884	$270	$1,154
2024	$906	$323	$1,229
2025	$928	$1,014	$1,942
2026	$949	$568	$1,517
2027	$972	$759	$1,731
2028	$994	$512	$606
2029	$1,016	$998	$2,014
Total	*$6,788*	*$4,491*	*$11,495*

Can We Financially Sustain our Current Levels of Service?

Based on the analysis of Council's expenditure requirements of asset renewal, operations and maintenance, there is sufficient funding in the LTFP to sustain current service levels.

1 – IPWEA, 2011, IIMM, p2.22

AMP Summary

Hay Shire Council

Table 3: State of the Assets – Water

Asset Value ($000) Asset Class	Gross Replacement	Accumulated Depreciation	Net Carrying Value	Depreciation Expense
Intakes Works	$1,745	$963	$782	80
Mains	$14,119	$5,057	$9,062	198
Reservoirs	$5,125	$1,376	$3,749	69
Treatment	$5,300	$2,285	$3,015	99
Total	*$26,289*	*$9,681*	*$16,608*	*446*

Current Levels of Service

The levels of service for the services that the Water Infrastructure assets deliver have been defined. Council is currently conducting a review to establish the link between operations & maintenance activities and levels of service.

Sustainability

		Target	Value
Consumption Ratio	Indicates the Written Down Value of Council's Depreciable assets relative to their 'as new' value in up-to-date prices (highlights aged conditions)	**40%-80%**	**62%**
Service level Sustainability Ratio	Indicates whether Council's funding for Infrastructure asset class is sufficient for the long-term delivery of current service levels.	**>90%**	**99%**
New/Upgrade Funding Ratio	Indicates the extent to which the planned new/upgrade projects are funded in the long-term budget allocation.	**100%**	**100%**
Renewal Funding Ratio	Indicates the extent to which the proposed renewal works are funded in the long-term budget allocation.	**100%**	**99%**
Operations & maintenance	Assumed that current expenditure levels for operations and maintenance activities will be maintained for the 10-year planning period.	**100%**	**100%**

Council's Infrastructure services are sustainable (Assuming Expenditure forecasts are fully funded)
The funding ratios indicate the level of funding for the 10-year planning period to operate and maintain the infrastructure assets.

1 – IPWEA, 2011, IIMM, p2.22

HAY SHIRE COUNCIL																
WATER - 10-Year Capital Works Program	Current Year		2021/22													
CAPITAL WORKS IN 2021$('000)					0	1	2	3	4	5	6	7	8	9	10	11
	SUBSIDY	ILOS	GROWTH	RENEW	Total	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
Reservoirs - Cleaning		100%			80	20	20	20	20	0	0	0	0	0	0	0
Upgrade confind space accesses - multiple sites (5) -		100%			50	50	0	0	0	0	0	0	0	0	0	0
Various locations - Install fire hydrants to improve coverage		100%			275	25	25	25	25	25	25	25	25	25	25	25
On-going valve replacemt -				100%	180	20	20	20	20	20	20	20	20	0	0	20
Various streets - Replace old water mains: Keeble) - 100 dia raw water; Hursley Street (Edward to Geor Stree				100%	1,705	137	140	143	147	151	155	158	162	166	171	175
FILTERED WATER SUPPLY:																
Filtered Water River Intake Murray St																
Murray St intake platform - Replace walkway				100%	25	25	0	0	0	0	0	0	0	0	0	0
Renewals				100%	-	0	0	0	0	0	0	0	0	0	0	0
FW Intake Pump Station Murray St																
Renewals				100%	15	0	0	0	0	0	0	15	0	0	0	0
Water Treatment Plant 2.2ML/d Cadell St																
Water Treatment Plant - Upgrade as per Scoping Study Report		100%			357	0	0	0	0	357	0	0	0	0	0	0
- Update SCADIA Systems		100%			528	0	0	0	0	0	264	264	0	0	0	0
- Change filter media		100%			100	0	0	100	0	0	0	0	0	0	0	0
- Other Mechanical & Electrical		100%			150	0	15	15	15	15	15	15	15	15	15	15
WTP Upgrade - Mandatory Upgrades		100%			-	0	0									
WTP Upgrade - Provisional Items (filter media replacement)		100%			-	0	0									
Renewals				100%	570	0	0	0	0	0	280	0	0	0	290	0
New Water bore - For alternative town water supply source		100%			-	0	0	0	0	0	0	0	0	0	0	0
Alternative water supply - bore and pipeline to WTP		100%			300	0	0	300	0							
2.3 ML Filtered Water Resevoir Pine St																
Reservoir-Filtered water, Pine St - Roof replacement				100%	115	0	0	0	0	0	0	0	0	0	0	115
Renewals				100%	-	0	0	0	0	0	0	0	0	0	0	0
Distribution																
New pipelines to service development zones			100%		-	$0	$0	$0		$0	$0	$0		$0	$0	$0
South Hay boosters pump (civil and mechanical)			100%		137	$0	$0	$0	$137	$0	$0	$0	$0	$0	$0	$0

1 – IPWEA, 2011, IIMM, p2.22

Clear water pump (CWP) upgrade			100%		**138**	$0	$0	$0	$138	$0	$0	$0	$0	$0	$0	$0
RAW WATER SUPPLY:																
Raw Water River Intake Leonard St																
Leonard St intake - Rehabilitate platform				100%	**50**	0	50	0	0	0	0	0	0	0	0	0
- Dredge out the intake area				100%	**60**	60	0	0	0	0	0	0	0	0	0	0
Renewals				100%	**-**	0	0	0	0	0	0	0	0	0	0	0
RW Intake Pump Station Leonard St																
Leonard St Pump Station - Improvement to hardstand area for loading ar	d unloading	100%			**-**	0	0	0	0	0	0	0	0	0	0	0
Renewals				100%	**15**	0	0	0	0	0	0	15	0	0	0	0
1 ML Raw Water Resevoir Lang St																
Reservoir- Lang St - Inspection				100%	**10**	10	0	0	0	0	0	0	0	0	0	0
Reservoir- Lang St - Repainting				100%	**400**	0	0	0	0	0	0	0	400	0	0	0
Renewals				100%	**-**	0	0	0	0	0	0	0	0	0	0	0
2.3 ML Raw Water Resevoir Leonard St																
Reservoir-Raw water, Leonard St - Roof Installation				100%	**110**	0	0	0	0	0	0	0	0	110	0	0
Renewals				100%	**15**	0	0	0	0	0	0	0	0	15	0	0
5.9 ML Raw Water Resevoir Pine St																
Renewals				100%	**-**	0	0	0	0	0	0	0	0	0	0	0
Raw Water Main																
Renewals				100%	**-**	0	0	0	0	0	0	0	0	0	0	0
Pipeline replacement/ upgrade			100%		**751**		$0	$0	$375	$0	$0	$0	$375	$0	$0	$0
New pipelines to service development zones			100%		**-**		$0	$0		$0	$0	$0		$0	$0	$0
South Hay boosters pump (civil and mechanical)			100%		**137**	$0	$0	$0	$137	$0	$0	$0	$0	$0	$0	$0
GRAND TOTAL					**6,272**	**347**	**270**	**623**	**1014**	**568**	**759**	**512**	**998**	**331**	**501**	**350**
Expected Subsidy / Contribution on Projects					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**				
Pump stations							50		289			15				
Reservoirs							20	20	20				400	125		
Filtration Plant							15	415		372	559	294	15	15	305	130
Mains							185	188	704	196	200	203	583	191	196	220
Total							270	623	1014	568	759	512	998	331	501	350
All expenditure fully costed and included in Councils 2022/32 Long Term Financial Plan with no gaps																

1 – IPWEA, 2011, IIMM, p2.22

Introduction

Purpose

The purpose of this Asset Management Plan (AMP or Plan) is to:

- Consolidate Hay Shire Council's (Council's) understanding of its assets within the Water Asset class
- Document levels of Service and risk
- Provide short and medium – term capital works plans
- Support informed decision making and guide Long-Term Financial Planning budget requirements
- Provide a plan to work towards improved accuracy and confidence in future iterations of this Plan.

Scope

This AMP relates to the management of Water Supply Infrastructure assets (the Assets) which are recognised assets owned by Council. Assets in this class typically comprise of the following Asset types:

- Treatment Plants
- Bores
- Pump Stations
- Reservoirs
- Water Nodes
- Gates and Fences
- Water Mains
- Water Meters and Services
- Stand Pipes

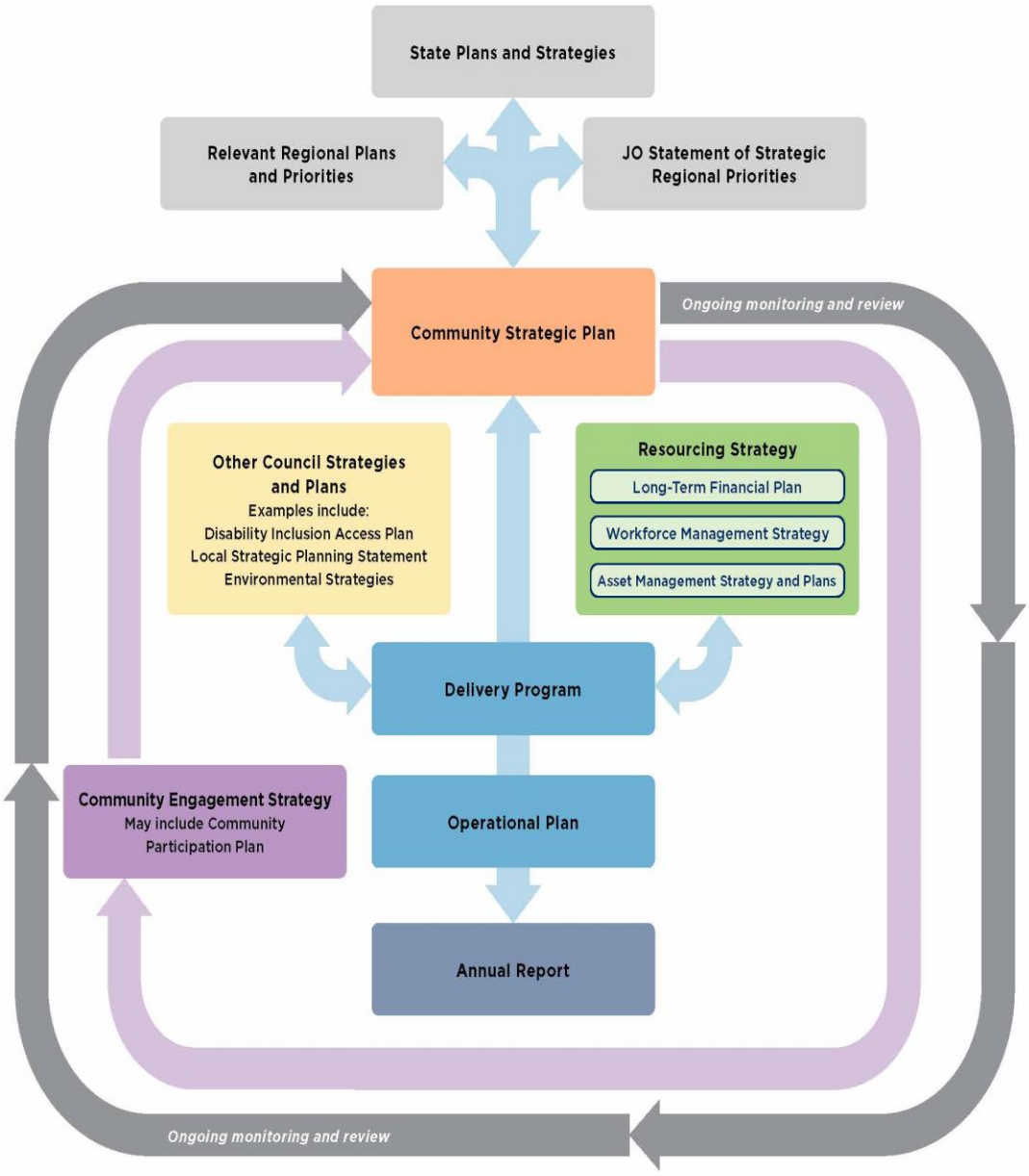
Corporate Context

In 2009 a new Integrated Planning Reporting (IP&R) framework for NSW local government was introduced. The IP&R framework requires councils to prepare a suit of long-term strategic documents, including a Community Strategic Plan, Resourcing Strategy and Delivery Plan Program, as well as an annual Operational Plan. Integration of these strategic documents is key to effective long-term planning and assist us in providing ratepayers with the best level of service that we can.

Table 4: illustrates how the IP&R framework ensures that local planning and reporting is informed, relevant and responsive to community needs.

1 – IPWEA, 2011, IIMM, p2.22

Table 4: Integrated Planning & Reporting flow chart



Community Strategic Plan

The Community Strategic Plan is the highest-level plan that Council prepares. The purpose of the Plan is to identify our community's main priorities and aspirations for the future and to plan strategies for achieving these goals. In doing this, the planning process considers the issues and pressures that may impact the community and the level of resources that will realistically be available to achieve its aspirations.

Informed by extensive community and stakeholder consultation, the Hay Shire Council 2022-2032 Community Strategic Plan seeks to answer four key questions:

- Where are we now?

1 – IPWEA, 2011, IIMM, p2.22

- Where do we want to be in 10 years?
- How will we get there?
- How will we know when we have arrived?

At an operational level, the Community Strategic Plan is implemented through Council's Delivery Plan and annual Operations Plans, which outlines the activities and actions that are the responsibility of Council in achieving our shared vision.

Resourcing Strategy

The Hay Shire 2022-2032 *Community Strategic Plan* (CSP) provides vehicle for expressing our community's long-term aspirations. However, the vision set out in this Plan will not be achieved without sufficient resources – time, money, assets and people – to carry them out.

The Resourcing Strategy comprises the following components:

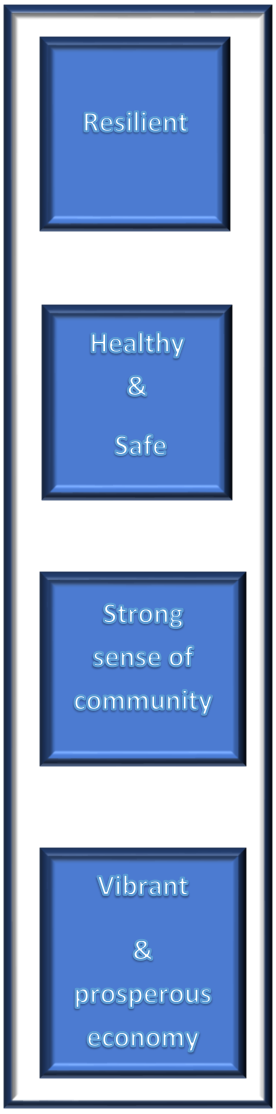
- **Asset Management Planning:** Council's asset management planning is supported by a governance model that includes an Asset Management Policy, Asset Management Strategy, and individual Asset Management Plans for all assets under Council's control. The Asset Management Plans are based on 'whole of life' asset management from planning, purchase, operation, and maintenance - to disposal of assets. These plans support the Asset Management Strategy in forecasting community requirements and the capacity to meet them on a short - , medium -, and long-term basis.

- **Long-Term Financial Planning:** The Long-Term Financial Plan (LTFP) tests community aspirations as contained in the Community Plan against the financial realities of the delivering on those aspirations. The LTFP integrated with Hay Shire 2022-2032 CSP through the Delivery Program and one-year Operational Plan.

- **Workforce Management Planning:** The Workforce Management Plan addresses the human resourcing requirements of the Community Strategic Plan, including what people, skills, experience and expertise are required to achieve its strategic objectives.

1 – IPWEA, 2011, IIMM, p2.22

This AMP is prepared under the above hierarchy and direction of Council's mission, values goals and objectives.



Through consultation with government, community, business, and industry, we have developed a clear vision as to what we want the Hay Shire Council region to look like in 2032.

"We are people are resilient, healthy and safe, living together with a strong sense of community in a vibrant and prosperous economy "

The vision is designed to encourage commitment to our future and engender a sense of common purpose and responsibility in all stakeholders responsible for delivering Hay Shire 2022-2032.

In 2032, our community wants the Hay shire Council region to be:

- Resilient
- Health & Safe
- Strong sense of community
- Vibrant & Prosperous economy

1 – IPWEA, 2011, IIMM, p2.22

Relationship to Other Asset Related Council Documents

This AMP aligns and should be read in conjunction with framework of Council documents as shown in

1 – IPWEA, 2011, IIMM, p2.22

The table 5: below shows the key documents that support this AMP:

Document	How Related	Reference
AMP Related Documents		
Asset Management Policy	The Asset Management Policy includes the defining principles of asset management within Council. This AMP supports such as by • Considering the entire life cycle of the assets • Supporting the development of cost-effective management strategies for the long term • Providing a defined level of service which can be monitored and used as the basis for aligning affordability with community aspirations • Understanding and meeting the demands of growth through demand management and asset investments.	

Document	How Related	Reference
	• Managing risk associated with the assets: and • Defining actions required to support continuous improvement in asset management practices.	
Condition Assessment Plan	Contains the methodologies, defect assessment procedures, and the condition rating system used to formally assess the structural integrity and appearance of assets.	
Service Level Agreement (including Maintenance Specifications)	Contains all maintenance and operational specification requirements for assets under this AMP.	
Risk Registers	Contains all identified asset related risks applicable to this AMP.	
Maintenance Manual	Contains design and construction details for new assets.	
Other Related Documents		
Land Development Guidelines	Contains design and construction details for new assets	Council Website
Others….		
External/Specialist Reports	Catchment Analysis, etc.	

1 – IPWEA, 2011, IIMM, p2.22

Stakeholder Input

Various stakeholders were considered in the preparation of this AMP who will have different roles in implementing its outcomes. These stakeholders and their role are shown in Table 6.

Table 6: Key Stakeholders

Key Stakeholder	Role
Councillors	• Represent needs of community. • Allocate resources to meet Council's objectives in providing services while managing risks. • Ensure the organisation is financially sustainable • Custodians of the assets and services, providing the interface with the community regarding the levels of service, good governance, and management practices.
General Manager	• Manager organisation operational activities and future planning strategic direction.
Director Corporate & Community	• Long-Term Financial Plans and operational financial data • Defining information requirements for audit and reporting purposes
Director Infrastructure & Planning	• Manage delivery of the AMP and initiative. • Capital works projects planning and deliver. • Operational and service levels, data information and analysis.
Community and Ratepayers	• User of services • Source of funding
State and Commonwealth Government	• Active in the management of assets and services across the region.
Council Staff	• Directly involved with the renewal, maintenance and operation of the network and the management framework, both operationally and financially. • Delivery of operations plans informed by this AMP.
Emergency Services	• Respond to community needs and emergency situations.

Legislative Requirements

Council is required to meet many legislative requirements including Federal and State legislation and regulations. Key relevant legislation is shown in Table 7.

Table 7: Legislative Requirements

Legislation	Requirement
Local Government Act NSW (1993)	**8B Principles of sound financial management** The following principles of sound financial management apply to councils: (c) Councils should heave effective financial and asset management, including sound policies and processes for the following: (i) Performance management and reporting, (ii) Asset maintenance and enhancement

1 – IPWEA, 2011, IIMM, p2.22

	403 Resourcing strategy (1) A Council must have a long-term strategy (called its **"resourcing strategy")** for the provision of the resources required to implement the strategies established by the community Strategic Plan that the Council is responsible for. (2) The resourcing strategy is to include long-term financial planning, workforce management planning and asset management planning.

This AMP contributes to supporting Council's legislative requirements.

Plan Maturity

This AMP is targeted at a first cut, 'core-level' AMP as defined in the International Infrastructure Management Manual. Detailed information is in Table 8 below.

Core level AMP's are developed to meet minimum legislative and organisational requirements and provide basic technical management outputs, including:

- Statements on current levels or aspirational levels of service
- Forward asset flow programs
- Associated cash flow

Table 8: Core Level Asset Management Capabilities

AM Category	Core Assessment requirements
Asset Management Plans	• Plan contains basic information on assets, service levels, planned works, and financial forecasts (5-10years) and future improvements. • The plan also includes executive summary, description of services and key/critical assets, top-down condition and performance description of supporting AM processes, 10-year financial forecasts, and 3-year AM improvements plan.

Other "Core" Assessment requirements that can be included in the AMP include the following:

Risk Management	• Risk framework developed • Critical assets and high risks identified • Documented risk management strategies for critical assets and high risks
Quality Management	• Defined quality policy and basic Quality Management System • All critical activity processes documented.
Levels of Service and Performance Management	• Customer groups defined, and requirements informally understood. • Levels of service and performance measures in place covering a range of service attributes. • Annual reporting against performance targets.
Demand Forecasting	• Demand forecasts based on robust projection of a primary demand factor (e.g. population growth) and extrapolation of historic trends. • Risk associated with demand change broadly understood and documented. • Demand management is considered in major asset planning.
Operating Planning	• Emergency response plan is developed

1 – IPWEA, 2011, IIMM, p2.22

	• Asset utilisation is measured for critical asset groups and its routinely analysed.
Maintenance Planning	• Asset critically considered in response processes. • Fault tracking and closure process • Strategy for prescriptive versus performance-based maintenance developed. • Key maintenance objective established and measured.
Capital Works Planning	• Projects have been collated from a wide range of sources such as hydraulic models, operational staff, and risk processes.
Financial and Funding Strategies	• 10+ year financial forecasts based on current AMP outputs. • Significant assumptions are specific and well-reasoned. • Expenditure captured at a level useful for AM analysis.
Asset Register Data	• Sufficient information to complete asset valuation – basic physical information recorded in a spreadsheet or similar (e.g location, size, type) but may be based on broad assumptions or not complete. • Replacement costs and asset age/life. • Asset hierarchy, asset identification and asset attribute system documented.
Asset Condition	• Condition assessment programme in place for major asset types, prioritised based on assets risk. • Data supports asset life assessment • Data management standards and processes documented • Programme for data improvement developed.
Information Systems	• Asset registered enables hierarchical reporting (at component to facility level). • Customer request tracking and planned maintenance functionally enabled • System enables manual reports to be generated for valuation, renewal forecasting.
Service Delivery Mechanisms	• Service delivery roles clearly allocated (internal and external), with contracts in place for external service provision.

Existing Infrastructure Base

The section provides an overview of the infrastructure assets covered by this AMP. The overview provides an understanding of the age, value, and condition of Council's existing infrastructure asset base.

Asset Summary

A summary of the Water Assets covered by the AMP are included in table 9.

Table 9: Asset Summary

Asset type	Quantity	Gross Replacement (000's) (June 2021)
Intake Works	4	$1,745
Mains	2184	$14,119
Reservoir's	4	$5,125
Treatment Plant	1	$5,300
Total		*$26,289*

1 – IPWEA, 2011, IIMM, p2.22

Asset Hierarchy and Useful Life

Implementing an asset hierarchy is one of the most important steps in building an effective asset management program. Such a hierarchy provides both contact and organisation to the asset register.

The asset register is the fundamental building block for asset management and when organised in hierarchical order is the vehicle by which the information system most effectively enables the assessment of the assets as individual components, composite assets, or groups if assets.

While it is not absolutely necessary to organise asset records in a hierarchical structure (they could simply be listed in date of creation order for example), doing so greatly simplifies the search for the proper record when entering data and greatly facilitates the roll up/drill down concept for data reporting.

An asset's useful life is the period over which a depreciable asset is expected to be fully consumed. This period can be significantly impacted by Council's maintenance practices.

The useful life of an asset is initially based on the manufacturer's recommended (expected) life. This is subject to change however, based on historical evidence of the impact of the local environment on the expected life.

Asset Remaining Useful Life

The remaining useful lives of the assets are based on:

- Inspections by a suitable qualified person
- Calculated from supplied construction dates and adopted asset lives, or
- Estimated from the condition of the asset as a percentage of the expected life.

A summary of the value of Water Asset s categorised by their asset type and remaining lives is listed in Table 10.

Table 10: Assets as a percentage of Gross Replacement Costs

	1	2	3	4	5
Intake Works		50%	50%		
Mains		50%	40%	10%	
Reservoirs		75%	25%		
Treatment Plant		100%			
Total		65%	29.70%	5.30%	0.00%

1. Excellent
2. Good
3. Satisfactory
4. Poor
5. Very Poor

1 – IPWEA, 2011, IIMM, p2.22

Asset Condition

Council has adopted a condition assessment method using a 5-point scale rating, varying from 'Very Good' to 'Very Poor' condition as can be seen int Table 11 below.

Table 11: Asset Condition

Grade	Condition	% Remaining Useful Life	Description
1	Excellent	>70%	Sound physical condition. No signs of deterioration. Only normal maintenance required
2	Good	70%-.50%	Acceptable physical condition; minor deterioration visible, no short-term failure risk. Minor defects only. Only minor work required, if any.
3	Satisfactory	50%->10%	Acceptable physical condition; minimal short-term failure risk but potential for deterioration in long-term. Monir defects only. Minor components or isolated sections of the asset may need replacement or repair now but asset functions safely at adequate level of service. Work may be required but asset is serviceable. Maintenance required to restore the asset to an acceptable level of service.
4	Poor	10%->4%	Significant deterioration evident. Failure likely in short-term. Likely need to replace most or all of the asset. No immediate risk to health or safety but works are required to ensure asset remains safe. Substantial work required in short-term, asset barley serviceable. Asset required renewal – works to be programmed.
5	Very Poor	<4%	Failed or failed imminent. Immediate need to replace most or the entire asset. Health and safety hazards exist which present a possible risk to public safety, or asset cannot be serviced/operated without risk to personnel. Asset is effectively unserviceable. Major work or replacement required urgently.

Assets Criticality

A critical asset is an asset for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets.

Although critical assets have a high consequence of failure, they don't necessarily have a high likelihood of failure.

Asset Criticality is a measure of how critical an asset is to the functioning of and/or the services provided by Council.

1 – IPWEA, 2011, IIMM, p2.22

The importance or degree of asset critically has been proposed to be based on the consequences of failure i.e. consequences of failure are assigned a criticality factor.
Elements that may impact on asset criticality include:

- Safety
- Cost of Failure
- Complexity
- Severity of Duty
- Impact of failure
- Impact on Environment
- Location
- Loss of Service
- Number of Customers Serviced
- Site function
- Public image impact

Social, environmental & economic factors may be considered.
Social may include

- Community disruption
- Health and safety
- Litigation

Environment factors that may need to be considered are

- Natural waterways
- Parks
- National parks
- Recreational grounds

Economic

- Business and commercial activities being disrupted
- Costs to the community

Criticality has been assigned using the rating in

Data Confidence

The lifestyle assessment is only as precise as the accuracy of the data Council holds. This data includes revaluation data of the assets, financial data, and asset register details.

Table 12: Data Confidence Rating

Grade	Description	Accuracy
1	Accurate	100%
2	Minor Inaccuracies	95%
3	50% Estimated	80%
4	Significant Data Estimated	70%
5	All Data Estimated	60%

(Section 4.3.7 of the IIMM, Version 3.0 2006)

The water data has been given subjective data confidence rating of 2.

1 – IPWEA, 2011, IIMM, p2.22

Levels of Service

Level of Service Documents Hierarchy

- Hay Shire 2022-2032 CSP

  The Community Strategy establishes, through community consultation, Council's aspirational goals and objectives for the delivery of Transport services.

- Asset Management Plan

  This Asset Management Plan (AMP) develops technical measures against which the aspirational goals and objectives can be measured (Technical Levels of Service)

- Delivery Plan

  The Delivery Plan (DP) allocated those responsible for the assets and the services they deliver, and the operational areas of Council charged with maintaining, operating, and upgrading existing assets or construction new infrastructure.

- Activity Specification

  The activity specification defines the target performance measures for maintenance, operations, or construction activities. It sets routine inspection and maintenance frequencies and for reactive maintenance sets intervention levels, response times, activity duration targets.

- Maintenance Management Plan

  The Maintenance Management Plan (MMP) details how each activity is to be completed and may include the following:
  - Standard Operating Procedures
  - Work Instructions
  - Hazards Risk Assessment
  - Reference to Equipment Maintenance Manuals (particularly fleet, plant, mechanical and electrical assets)

Community Strategy 2022-2032 (Community Levels of Service)

The Community Strategy relevant to this AMP is

Outcome 5: Our Infrastructure – Sustainable infrastructure provision that is adaptive to changing and funding levels.

Table 13: Council's Goals

Council Role
• Effectively maintain the region's water and sewer infrastructure • Undertake sound asset management planning and asset mapping • Where appropriate, upgrade existing or provide new infrastructure

1 – IPWEA, 2011, IIMM, p2.22

In additional to Council's Water aspirational goal and roles as details
Above, the Community Levels of Service relate to subjective service delivery outcomes that the community wants in terms of safety, quality, quantity, reliability, responsiveness, value and legislative compliance.

Community levels of service measures used in this service management plan are:

- Quality – How good is the service?
- Function – Does it meet users' needs?
- Capacity/Utilisation – Is the service over or under use?

These community levels of service promised by Council are outlined in Table 14.

Table 14: Community Levels of Service

Service Level Outcome	Principle Activity	Strategic Elements	Performance Outcome	Assessed by
Quality	High quality drinking water	Physical water quality parameters conform to standards (odours, colour, taste, turbidity). Chemical water quality parameter conforms to standards (PH, Fluoride, Residual Chlorine, Hardness etc… Provide high quality and pathogen free potable water supply.	Requests received should not increase annually. Level of service as agreed with community to manage budget allocations while maintaining an acceptable level of risk and service provision for Council's water supply network.	Customer Complaints Test results of water quality monitoring program
Function	Effective water supply	Provide a safe and reliable water supply system that is operated and maintained with minimum interruption. No damages to provide properties or public places because of reservoir overflows or water runoff because of broken/burst mains. Water pressure is adequate for all applications including emergency services. Water supply doesn't impact the environment	Water pressure is adequate for all applications, including emergency services. Incidents and unplanned interruptions to supply should not increase annually. Level of service as agreed with community to manage budget allocations while maintaining an acceptable level of risk and service provision water supply network. Water treatment and supply meets relevant environment guidelines.	Water Pressure Testing Number of unplanned interruptions (Main breaks and water service failures) % of water supply network by value that has poor or very poor function compared with fit for use criteria set out in technical service levels. Environmental impact assessment.
Capacity/Utilisation	Water supply network has the capacity to meet community needs at an affordable cost.	Provide sufficient water at adequate pressure	Level of service as agreed with community to manager budget allocations while maintaining an acceptable level of risk and service provision	% of Network with less than adequate capacity or pressure. Customer complaints.

1 – IPWEA, 2011, IIMM, p2.22

			for water supply network. Assessment requires to inform future revisions of the Water Supply Network Asset Management Plan.	

Technical Levels of Service

Technical levels of service support the community levels of service by turning subjective requirements of the Community Levels of Service into objective assessments. These technical measures aim to quality the performance of the assets and service they provide and relate to the allocation of resources to services activities that the organisation undertakes to best achieve the desired community outcomes and demonstrates effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services (e.g. power charges, chemicals, cleaning, flushing etc)
- Maintenance – the activities necessary to retain an asset near as practicable to an appropriate service condition (e.g. water main repairs, pump servicing , etc)
- Renewal – the activities that return the service capability of the network to that which it had originally "like with like" replacement (e.g. watermain replacement, hydrant or value replacement etc)
- Upgrade – the activities to provide an higher level of service (e.g replacing a pipeline with a larger size, increased pressure) or
- New – a new service that did not exist previously (e.g. a new library).

Asset managers plan, implement and control technical service levels to influence the community service levels. [1]

These technical Levels of Service are outlined in Table 15 by asset classification

1 – IPWEA, 2011, IIMM, p2.22

Table 15: Technical Levels of Service

Classification	Water Supply		
Service Statement	Safe, sustainable water supply		
Performance Measure	Community feedback through surveys or complaints.		
Service Factors	Community Levels of Service	Technical Level of Service	Performance Measures
Quality			
High Quality Drinking Water	Consistently clean, safe drinking water	Operations Maintenance • Inspect assets on a routine basis to identify their condition • Inspect asset on a routine basis to identify and address any defect and safety concerns • Water quality matches NHMRC Drinking water Guidelines for colour, turbidity and microbiology.	100% of Activities identified in the SLA met. 30% of Asset Base condition assessed annually. Defect inspect 90% of roads <1 complaint per month.
		Renewal • Renew/replace components when they no longer function at 90% • Renew/replace assets when they degrade to a dangerous level.	Average network condition remains constant or improves. 90% delivery of renewal programs
Function			
Effective Water Supply	Minimal interruptions to supply Water pressure is adequate for all applications.	New/Upgrade • Provide new/upgrade infrastructure to cater for community growth in accordance with infrastructure plan, and existing community demand. • Provide new/upgraded infrastructure as required to comply with industry standards or statutory requirements. • Ensure new/upgraded infrastructure is designed and constructed in accordance with Council's Guidelines.	90% delivery of CAPEX programs. 100% Compliance with design standards and guidelines. 5>complaints/annum
Capacity /Utilisation			
Affordability and whole of life management	Water supply remains affordable	New/upgraded • Ensure new/upgrade infrastructure is designed and constructed in accordance with Council's Guidelines • Demand Strategies include demand management options	Decrease excess water charges Baseline chemical usage.

1 – IPWEA, 2011, IIMM, p2.22

Growth

Development

The new assets required to meet development growth will be acquired free of cost from land developments and constructed/acquired by Council.

Acquiring these new assets will commit Council to fund on-going 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.

Demand

Factors affecting demand include population change, changes in demographics, seasonals factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices and environmental. Specific to Council, the demand factor that may impact on service delivery are summarised in Table 16.

Table 16: Demand Impact

Demand Driver	Current Position	Projected Position	Potential Impact	Response Required
Community Growth	2946 residents	• No current prediction available	Population growth will result in an increase in asset use and have an impact on lifecycle cost if the assets.	There is not enough growth to have a significant impact on services.
Demographic	Median age 45	• No current prediction available	Increases in the median age increases the importance for service accessibility.	The average population being relatively young will increase the need for community Transport infrastructure.
Tourism	Tourism and related industries account for 16.6% of the total employed in the Council area.	• No current prediction available	An increase in visitors to the area will have a larger effect on infrastructure services	Council will not have to increase size of the asset base specially for tourism increases

(*Australian Bureau of Statistics)

Growth/Demand Response

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 include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on providing the required service without the need for Council to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or education customers to accept appropriate assets failures.

Opportunities for demand will be developed in future revisions of this asset management plan.

Council's current adopted growth rate is 1% per annum. There is existing capacity in the transport network to cater for this level of growth for the foreseeable future.

1 – IPWEA, 2011, IIMM, p2.22

Risk Management

Risk Management Objectives

Council has a 'duty of care' to the community in relation to management of the assets and appropriate management of risk. Council must reduce risk where it is reasonable to do so. Risks that affect Council include:

- Risks associated with the loss of service by the failure of critical assets
- Financial risks from a lack of due diligence in the management of funding for the renewal, maintenance, and operation and management outputs.

The objectives to be achieved in managing risks under the AMP are:

- Identify high risk assets
- Maintain Levels of Service
- Mitigate risks to the public
- Reduce the number and magnitude of unplanned asset failures.

Managing risks involves identifying, assessing and determining risk management option.

Risk options vary depending on several factors, including but not limited to:

- Available resources and funding
- Risk assessment level and
- Network demand

In this way, it may be reasonable to mitigate a lower risk when it is not practical to mitigate a high risk.

For each identified risk Council can elect to adopt one of the following positions:

- Take the risk
- Transfer the risk
- Treat the risk
- Terminate the risk

Risk Assessment Method

Risks vary on both likelihood and consequence. Analysing risks in a risk matrix can help to quantify the risk to then identify necessary treatment actions. The risk matrix used to assess Council's risk is shown below.

Table 16: Risk Assessment Matrix

LIKELIHOOD		CONSEQUENCES				
		1 Negligible	2 Minor	3 Moderate	4 Major	5 Catastrophic
Likelihood	A. Rare	Low	Low	Low	Moderate	High
	B. Unlikely	Low	Low	Moderate	High	High
	C. Possible	Low	Moderate	Moderate	High	Extreme
	D. Likely	Moderate	Moderate	High	Extreme	Extreme
	E. Almost Certain	Moderate	High	High	Extreme	Extreme

The options to 'treat' risks are broadly outlined in table 17 below.

1 – IPWEA, 2011, IIMM, p2.22

Table 17: Treatment Options

Risk Assessment	Treatment Options
Low(L)	Acceptable Risk • Unlikely to require specific application of resources • Manage by routine procedures • Monitor, review and react
Moderate (M)	Acceptable Risk • Unlikely to cause much damage and/or threaten the efficiency and effectiveness of the activity • Treatment plans to be developed and implemented by operational managers. • Manage by specific monitoring or response procedures
High Risk (H)	Generally unacceptable • Likely to cause some damage, disruption, or breach of controls • Senior management attention needed, and management responsibility specified • Treatment plans to be developed and reported to executives
Extreme (E)	Not acceptable • Likely to threaten the survival or continued effective function of the organisation, either financially or politically • Must be managed by senior management with detailed treatment plan in place • Immediate action required.

Risk Analysis & Assessment

Council conducts risk assessments and implements treatments and plans on a day-to-day basis but has not conducted an overall assessment across the asset class which will be undertaken in accordance with the impact plan.

Long Term Funding

The available funding was estimated based on the financial model provided by Council. The Capital expenditure has been extracted from Council's Financial Model, however the operations and maintenance expenditure funding forecasts are imbedded in the model data and not clearly identified by asset class. Therefore, these operational expenditure funding forecasts are based on current levels of expenditure. The assumption being that this level of funding is enough to deliver the current service levels.

The forecasts estimate in this AMP should be used as an indication of expenditure levels and distribution required for the Long-Term Financial Plan.

Long -Term Financial Plan Summary

The LTFP funding available for operations, maintenance and infrastructure renewals is shown in table 18.

The total allocation over the term of the LTFP is $11.49M or $1.14M per annum.

1 – IPWEA, 2011, IIMM, p2.22

Table 18: Long Term Financial Plan (000's)

Financial Year Ending	New/Upgrade	Renewals	Operations & Maintenance	Total
2022		$347	$955	$1,302
2023		$270	$884	$1,154
2024	$300	$323	$906	$1,229
2025		$1,014	$928	$1,942
2026		$568	$949	$1,517
2027		$759	$972	$1,731
2028		$512	$994	$606
2029		$998	$1,016	$2,014
Total	*$300*	*$4,491*	*$6,788*	*$11,495*

The current LTFP shows a total planned expenditure on both operations/maintenance and capital renewal of $12,955,641.

Operations & Maintenance

Operations and Maintenance activities relate to the day to day running and upkeep of assets, the costs of which are particularly significant for dynamic/short-lived assets.

Operations expenditure is recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, e.g. power, fuel, plant equipment, street sweeping, mowing, on-costs and overheads but excludes maintenance and depreciation.

Maintenance activities are those necessary for retaining as asset as near as practicable to its original condition, including regular ongoing day-to-day work necessary to keep assets functioning and in good repair. It is operating expenditure required to ensure that the asset reaches its expected useful life.

More work is required in the process of dissecting and calculating its actual and required operational and maintenance costs, including assessment on water sales/consumption.

Renewals Planning

Renewals expenditure does not increase the asset's design capacity but restores, rehabilitates, replaces, or renews an existing asset to its original or lesser required service potential. Work over and above restoring and asset to original service potential is classed as upgrade or new works expenditure.

The renewals are based on the asset valuation data. Additionally, the assets that had been programmed in Council's capital works program have been included for comparison.

The renewals program is detailed on page 12 & 13.

The current LTFP shows a capital renewal expenditure spend of $3,527,204, well short of that required based on consumption of $446,000 per annum. This requires further analysis and understanding.

1 – IPWEA, 2011, IIMM, p2.22

Comparative Renewals Funding Ratio

Table 19: Comparative Renewals

Activity No.	Activity	Description	Hierarchy	Inspection Frequency	Intervention Level
1	Mains break repairs and maintenance Urban and Rural	Repairing break along water reticulation network	Trunk Lines	As per call in of fault visible	Water is leaking and viable at surface
			Reticulation	As per call in of fault visible	Water is leaking and visible at surface
			Service Lines	As per call in of fault visible	Water is leaking and visible at surface.
2	WTP Operations and testing	Provide potable drinking water through the operation of the plant and water testing	Telemetry	Daily	Signal lost, alarms
			Lab testing equipment	Daily	Faulty, alarms
			Pumps	Weekly	Alarms
3	WTP Maintenance	To maintain the WTP and all equipment to a high standard	Telemetry	Daily	Signal loss alarms
			Lab testing	Daily	Faulty, alarms
			Dosing equipment	Daily	Faulty, alarms
			Pumps	Weekly	Faulty, alarms
4	Water storage inspections and maintenance	To ensure the water storage tanks and surrounding areas are in good condition	Telemetry	Daily	Alarms, loss of signal
			Reservoir	Weekly	As reported through inspection schedule
			Valves	As required	As required
5	Water pump stations operations and maintenance urban & rural	To ensure pumps are delivering & operating at full capacity, maintain	Telemetry	Daily	Alarms, loss of signal
			Pumps	Weekly	Alarms, as required

1 – IPWEA, 2011, IIMM, p2.22

		pump houses to a good condition.	Electrical equipment	Weekly	Alarms, as required
6	Valve and hydrant maintenance	Ensure valve and hydrants are accessible and in good working condition	Hydrants	2x Yearly	As required
			Valves	2 x yearly	As required
7	Water meter reading & maintenance Urban & rural	Ensure water meters & toggle are accessible and in good working condition	Water meter	As required	Water is leaking & visible at surface
			Mi Water Program	As required	As per call in
8	Water main flushing	For cleaning the interior of water distribution mains by sending a rapid flow of water through the mains	Hydrant stand	2x a year	As required
			Hoses	When in use	As required
9	Vegetation Control	Ensure a clean and safe work environment	Pump Stations	Weekly	As required
			Manholes	AS per call in fault	As required
			Valve covers	2x per year when flushing	As required
			Hydrant Covers	2x per year when flushing	As required
10	Fence and gate maintenance	Ensure safety and restrict unauthorised access	Reservoirs	Weekly	Inspection
			WTP	Daily	Inspection
11	Roads (sealed and unsealed maintenance)	Ensure roads are restored to certain standard			

New and Upgrade

New and Upgrade expenditure is for the provision of, improvement to, an asset where the outlay can reasonably be expected to provide benefits beyond the year of outlay, including a value management approach that aims to produce the most economic and creative solutions.

1 – IPWEA, 2011, IIMM, p2.22

New/Upgrade Prioritisation Approach

The considerations taken into account when prioritising new/upgrade Projects. The discussion may include some example criteria as documented below:

- New/upgrade projects that involved legislative drivers were prioritised over others that did not, to ensure compliance with statutory requirements.
- Once the legislation assessment was completed, projects were assessed against alignment with approved Council plans, policies, and strategies. This was essential to ensure projects were not being developed outside the scope of strategic Council documents.
- A risk assessment was undertaken, to identify projects with higher risk. This was necessary to identify the consequences and impacts If projects were nit undertaken. Projects identified as higher risk were prioritised over those with a lower risk.
- An assessment of community growth and demand based on technical levels of service within the Council area was undertaken. This highlighted that projects associated with growth areas such as the northern growth corridor warranted being prioritised over those not located in such an area.
- For projects concerning the upgrade of existing assets, these were given priority over new assets in order to maximise/enhance existing infrastructure before investing in new, additional assets.
- Include evidence of a value management approach taking into consideration the hole of Life costs of each project.

New/Upgrade Program

It is an objective of the Community Strategy to undertake projects that generate new infrastructure or upgrade existing infrastructure; therefore Council is currently reviewing its Long-Term Financial Plan to determine if after funding asset operations, maintenance and renewal there us funding available for these works.

No new/upgrade program has been included in this plan.

Disposal/Rationalisation

Council has undertaken a review of the configuration, type and location of Water Asset s and the service process relevant to the activity, when an asset becomes uneconomical to maintain or rehabilitate, or is no longer required.

There is currently no information regarding any assets that may have been disposed of. It has been assumed that all assets on the register are in use.

Evaluation of findings

Whilst Council does not have any high-risk water assets it does have a number that require renewal works to ensure that they remain in at least a satisfactory condition. Council's: assessed renewal and maintenance works can be financed within existing pricing structures revenue policies however growth assets and new requirements would need a reassessment of pricing strategies.

Way Forward

1. Comprehensive risk analysis be conducted on assets in relation to criticality and asset condition
2. Evaluation of maintenance and operational costs and requirements to calculate maintenance ratio
3. Further development of asset inspection, coordination analysis and asset management techniques
4. Establish asset management planning regime and responsibilities
5. Analysis of the continuation of the two water systems – raw and filtered, and an assessment of decommissioning the raw water system and upgrade of the filtered water system.

1 – IPWEA, 2011, IIMM, p2.22

Appendix A – Asset Management Practices

Council is currently using Civica Authority financial system for asset accounting processes and related reporting functions. Asset data included in the system is directly integrated with the financial system.

The intention is to record, further develop and consolidate the processes used for asset and services management, and then review the systems available which will complement those processes. The timeframe for that review will be establish in the Asset and Services Management Practices Improvement Strategy.

The finance module is the responsibility of the finance department. The engineering and finance departments are jointly responsible for ensuring the integrity of the system and asset financial information overall.

Authority has an asset database module that Council uses to monitor their assets. In this way the asset and financial data bases can be aligned. The key information flows into this asset management plan are:

- Council corporate and operational plans;
- Service request from the community;
- Network assets information;
- The unit rates for categories of work/materials;
- Current levels of service and expenditures;
- Projections of various factors affecting future demand for services and new assets acquired by Council;
- Future capital works programs; and
- Financial asset values.

The key information flows from this asset management plan are:

- The project works program and trends;
- The resulting budget and long-term financial plan expenditure projections; and
- Financial sustainability indicators.

These will impact the Long-Term Financial Plan, Strategic Long-Term Plan, Annual Budget and Departmental Business Plans and Budgets.

1 – IPWEA, 2011, IIMM, p2.22

Appendix B - Abbreviations

AAAC	**Average annual asset consumption**
AMP	**Asset Management Plan**
ARI	**Average Recurrence Interval**
CRC	**Current Replacement Cost**
CWMS	**Community Wastewater Management Systems**
DA	**Depreciable Amount**
EF	**Earthworks/Formation**
IRMP	**Infrastructure Risk Management Plan**
LCC	**Life Cycle Cost**
LCE	**Life Cycle Expenditure**
LGIS	**Local Government Infrastructure Services**
MMS	**Maintenance Management System**
PCI	**Pavement Condition Index**
RV	**Residual Value**
Vph	**Vehicles per hour**

1 – IPWEA, 2011, IIMM, p2.22

Appendix C – Glossary

Annual Service Cost (ASC)

1. Reporting actual cost. The annual accrual Cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
2. For investment analysis and budgeting. An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost included operations, maintenance, depreciation, finance/opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset class

A group asset having a similar nature or function in the operations of an entity, and which, for purpose of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.

Average annual asset consumption (AAAC)*

The amount of an Council's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life) or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowings or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or cost needs to be allocated accordingly.

Capital expenditure – expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the Council's asset base, but may be associated with additional revenue from the new user group e.g. extending a drainage or road network, the provision of an oval or park in a new suburb for residents.

Capital Expenditure – new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure – renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the asset being renewed. As it reinstates exiting service potential, it generally has no impact on

1 – IPWEA, 2011, IIMM, p2.22

revenue, but may reduce future operations and maintenance expenditure if completed as the optimum time, e.g. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade
Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it has originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. I will increase operations and maintenance expenditure in the future because of the increase in Council's asset base. E.g. widening the sealed area of an existing roads, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding
Funding to pay for capital expenditure.

Capital grants
Monies received generally ties to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure
See capital expenditure definition

Capitalisation threshold
The value of expenditure on non-current assets above which the expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount
The asset at which an asset is recognised after deducting any accumulated depreciation/amortisation and accumulated impairment losses thereon.

Component
Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Cost of an asset
The amount of cash or cash equivalents paid, or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes on-off design and project management costs.

Current replacement cost (CRC)
The costs the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Depreciable amount
The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)
The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation/amortisation
The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life
See useful life definition

Expenditure
The spending of money on goods and services. Expenditure includes recurrent and capital.

Fair value
The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arm's length transaction.

Funding gap
A funding gap exists whenever an entity has insufficient capacity to fund asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be

1 – IPWEA, 2011, IIMM, p2.22

determined assuming no additional operating revenue liabilities above levels currently planned or projected. A current funding gap means service levels have already or are currently falling. A projected funding gap if not addressed will result in future diminution of existing service levels.

Heritage asset
An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture of the entity holding it.

Impairment loss
The amount by which the carrying amount of asset exceeds its recoverable amount.

Investment property
Property held to earn rentals or for capital appreciation or both, rather than for;

a) Use in the production or supply of goods or services or for administrative purposes; or
b) Sale in the ordinary course of business

Key performance indicator
A qualitative or quantitative measure if a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service
The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life cycle cost

1. Total LCC. The total cost of an asset throughout its life including planning, design, construction, acquisition, operation maintenance, rehabilitation and disposal costs.
2. Average LCC. The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual operations, maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure
The Life Cycle Expenditure (LCE) is the actual or planned annual operations, maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure Cost to give an initial indicator of life cycle sustainability.

Maintenance
All actions necessary for retaining an asset near as practicable to its original condition, including regular ongoing day-today work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

Planned maintenance
Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

Reactive maintenance
Unplanned repair work is carried out in response to service requests and management/supervisory directions.

Significant maintenance
Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

Unplanned maintenance
Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required services or to maintain its level of security and integrity.

Maintenance and renewal gap
Difference between estimated budgets and projected required expenditures for maintenance and renewal of assets to achieve/maintain specified levels, totalled over a defined time (e.g 5,10 and 15 years).

1 – IPWEA, 2011, IIMM, p2.22

Maintenance and renewal sustainability index
Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (e.g. 5,10, and 15 years).

Maintenance expenditure
Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level if service. It is expenditure, which as anticipated in determining the asset's useful life.

Materiality
The notion of materiality guides the margin of error acceptable, the degree of precision required, and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset
Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques.

Net present value (NPV)
The value to the Council of the cash flows associated with an assets, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows arising from e.g. the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments
Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to Council, e.g. parks and playgrounds, footpaths, roads and bridges, libraries tec

Operations expenditure
Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense
The gross outflow of economic benefits, being cash and non-cash items, during the period arising in the course of ordinary activities of an entity when those outflows results in decreases relating to distributions to equity participants.

Pavements management system
A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMs Score
A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption
A measure of rate at which assets are being upgraded and expended per annum expressed as a percentage of depreciable amount (capital upgrade/expansion /expenditure/DA).

Recurrent expenditure
Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding
Funding to pay for recurrent expenditure.

Remaining useful life
The time remaining until as asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Residual value
The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of age and in the condition expected at the end of its useful life.

1 – IPWEA, 2011, IIMM, p2.22

Revenue generating investments
Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres etc.

Risk Management
The application of a formal process to the range of possible values relating to key factors associated with risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment
A self-contained part or piece of an infrastructure asset.

Service potential
The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining
A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits.
It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing in providing services (Depreciated Replacement Cots/Depreciable Amount)

Strategic Longer-Term Plan
A plan covering the term of office of councillors (4years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in Councils longer-term plans such as the service management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Specific maintenance
Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including potholes repairs, replacement of pump equipment etc. This work generally falls below the capital/maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Sub-component
Smaller individual parts that make up a component part.

Useful life
Either:

a) The period over which an asset is expected to be available for use by an entity or
b) The number of production or similar units expected to be obtained front he asset by the entity.

It is estimated or expected time between placing the asset into service and removing It from service, or the estimated period of the over which the future economic befits embodied in a depreciable asset, are expected to be consumed by Council.

Value in use
The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement costs (DRC) for those assets whose future economic benefits are not primary dependent on the asset's 'a ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits

1 – IPWEA, 2011, IIMM, p2.22