ASSET MANAGEMENT STRATEGY Shoalhaven Water - Asset Management Strategy

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Contents

1 Executive Summary

This asset management strategy is drafted to enhance Shoalhaven Water's service delivery across various infrastructure domains, including water supply, wastewater services, communications facilities, and Shoalhaven Water-managed buildings. These infrastructure assets boast a replacement value exceeding $1.9 billion as of June 30, 2023. The strategy aims to guide Shoalhaven Water in aligning with the principles and expectations outlined in the ISO 55000 series of documents. To accomplish this, Shoalhaven Water relies on the International Infrastructure Management Manual (IIMM) for guidance on applying the ISO documentation requirements.

The Asset Management Strategy of Shoalhaven Water serves several key objectives:

- Community Service Alignment: The strategy enables Shoalhaven Water to showcase how its asset portfolio will cater to the evolving service delivery needs of the community in the future. This ensures that the organization is responsive and aligned with the expectations and requirements of its residents.
- Policy Compliance: The strategy aims to achieve the stipulations set forth in Shoalhaven Water's asset management policies. This includes adhering to national sustainability frameworks, State Integrated Planning and Reporting (IPR) Guidelines, and The Regulatory & Assurance Framework from the Department of Primary Industry and Environment. Compliance ensures a standardized and accountable approach to asset management.
- Strategic Integration: The strategy ensures the seamless integration of asset management practices with the long-term Strategic Business Plan of Shoalhaven Water. By aligning these aspects, the organization can strategically plan for the future, ensuring that asset management supports broader business objectives.
- Financial Sustainability: Adopting the asset management strategy contributes to Shoalhaven Water's ability to provide services to the community in a financially sustainable manner. This is crucial for meeting current needs without compromising the ability to meet future requirements.

The development of the asset management strategy involves a comprehensive review, encompassing Shoalhaven Water's service delivery practices, financial sustainability indicators, asset management maturity, and alignment with the organisation's vision outlined in the Shoalhaven City Community Strategic Plan. The strategy goes further to outline an improvement plan, detailing specific tasks and resource requirements, with the goal of elevating Shoalhaven Water to an 'intermediate level' of asset maturity and competence. This proactive approach positions Shoalhaven Water to navigate evolving challenges and deliver sustainable, efficient, and community-focused services.

1.1 Strategy Outlook

Shoalhaven Water's strategic outlook for the next 5 to 10 years focuses on proactive and comprehensive water and wastewater management. Recognising the vital role of effective asset management, the organisation aims to sustain service delivery and meet agreed-upon service levels. Anticipating increased demand, especially in the Nowra/Bomaderry area, Shoalhaven Water is committed to informed decision-making through strategic planning and detailed models.

With investments exceeding $600 million in the 20-year financial plan, Shoalhaven Water is dedicated to asset renewal, growth, and enhancement. Acknowledging challenges in operational and depreciation

costs, coupled with inflation and construction cost volatility, the organisation demonstrates financial foresight through vigilant monitoring and incremental funding adjustments.

Shoalhaven Water's strategic vision prioritises both immediate concerns and long-term sustainability. The Asset Management Strategy plays a key role in forecasting community needs, addressing capacity issues, and aligning with corporate goals. The organisation's commitment to a culture of effective asset management ensures adaptability and resilience.

While Shoalhaven Water's current asset management maturity is intermediate, there is a recognition of the need for improvement in various areas. Strategic investments are planned to enhance information management, lifecycle management, scheduled maintenance, service management, and accountability, reinforcing the organization's commitment to evolving challenges and ensuring continued success.

Shoalhaven Water seeks to manage the water supply, wastewater and communications assets in a manner that meets the required level of service in the most cost-effective manner for present and future consumers. The key documents are set out in figure 1-1, shown on page 5.

1.2 Asset Management Strategies

To realise the strategic objectives outlined in Council's Asset Management Policy, Shoalhaven Water must undertake specific strategies and achieve outcomes, as detailed in the table below. These actions are pivotal for advancing Shoalhaven Water's asset management.

Table 1 – Asset Management Strategies

No	Strategy	Desired Outcome	Responsibility
1	Move from Annual Budgeting to Long Term Financial Planning	The long-term implications of Shoalhaven Water services are considered in annual budget deliberations.	SCC Finance Section WAPD Manager
2	Develop Long Term Financial Plan covering 10 years incorporating asset management plan expenditure projections with a sustainable funding position outcome.	Sustainable funding model to provide Shoalhaven Water services.	Assets & Portfolio Manager SW
3	Incorporate Year 1 of Long-Term Financial Plan revenue and expenditure projections into annual budgets.	Long term financial planning drives budget deliberations.	SW Finance SW Executive Manager
4	Review and update asset management plans and long-term financial plans after adoption of annual budgets. Communicate any consequence of funding decisions on service levels and service risks.	Shoalhaven Water and the community are aware of changes to service levels and costs arising from budget decisions.	WAPD Manager SW

5	Develop and annually review Asset Management Plans covering at least 20 years for all major asset classes (80% of asset value).	Identification of services needed by the community and required funding to optimise ‘whole of life’ costs.	Assets & Portfolio Manager
6	Ensure Shoalhaven Water decisions are made from accurate and current information in asset registers, on service level performance and costs and ’whole of life’ costs.	Improved decision making and greater value for money.	WAPD Manager Assets & Portfolio Manager SCC Finance Department
7	Report on Shoalhaven Water resources and operational capability to deliver the services needed by the community in the Annual Report.	Services delivery is matched to available resources and operational capabilities.	SW Executive Manager WAPD Manager Assets & Portfolio Manager
8	Ensure responsibilities for asset management are identified and incorporated into staff position descriptions.	Responsibility for asset management is defined.	SW Director
9	Ongoing review and development of the Improvement Plan to realise ‘Intermediate’ maturity for the financial and asset management competencies within 2 years.	Improved financial and asset management capacity within Shoalhaven Water.	WAPD Manager Assets & Portfolio Manager
10	Report six monthly to Shoalhaven Water Asset Management Steering Committee on development and implementation of Asset Management Strategy, AM Plans Asset Management Improvement Plan and Long-Term Financial Plans.	Oversight of resource allocation and performance.	WAPD Manager Assets & Portfolio Manager

1.3 Asset Management Improvement Plan

In September 2012, Shoalhaven Water initiated a comprehensive assessment of its Asset Management Capabilities. This evaluation underwent further review in 2014, culminating in the development of a comprehensive improvement plan. Subsequently, in 2021, Shoalhaven Water embarked on a new chapter by commissioning an Asset Management Maturity Assessment. The primary objective was to gauge the maturity of Shoalhaven Water's asset management program and formulate an updated improvement plan with defined projects, outlining the trajectory for asset management development over the next five years.

The enhancements identified in the preceding assessments are catalogued in section 12 of Shoalhaven Water's Asset Management Plans. These improvement plans serve as the driving force behind the evolution of the Asset Management System and function as key performance indicators (KPIs) for

Shoalhaven Water staff. Out of the 41 action items earmarked to enhance Shoalhaven Water's Asset Management (AM) system, as of August 2023, 27 have been completed or are no longer required, while 14 are currently in progress, with the majority making significant strides.

The tasks and programs outlined in both the 2014 Asset Management Capability Improvement Plan and the 2021 Asset Maturity Assessment are detailed in Table 4.6.

1.4 Introduction

Assets play a vital role in delivering essential services to communities, and a prevalent challenge for local governments across Australia is effectively managing aging assets in need of renewal and replacement. Infrastructure assets, such as water and sewerage infrastructure, pose unique challenges due to the difficulty in determining their condition and longevity, particularly for underground assets. The associated financing needs can be substantial, requiring careful planning to address significant peaks and troughs in expenditure for renewing and replacing these assets. The demand for new and improved services adds to the planning and financing complexity.[1]

The creation of new assets introduces additional challenges, specifically in funding the ongoing operating and replacement costs essential to provide the required service throughout the assets' full life cycle.[2]

To address these challenges, national frameworks on asset planning and management, as well as financial planning and reporting, endorsed by the Local Government and Planning Ministers' Council (LGPMC), mandate that Shoalhaven Council adopts a longer-term approach to service delivery and funding. This comprehensive approach includes:

- A strategic longer-term plan covering, as a minimum, the term of office of the Councillors and:
    - Integrates asset management and long-term financial plans,
    - Demonstrates how Shoalhaven Water intends to resource the plan, and
    - Involves community consultation in the planning process.
- An annual budget clearly showing the connection to the strategic objectives, and
- An annual report:
    - Providing an explanation to the community regarding variations between the budget and actual results.
    - Details any impact of such variances on the strategic longer-term plan.
    - Includes a report of operations with a review of the performance of Shoalhaven Water against strategic objectives.[3]

By adhering to these requirements, Shoalhaven Council aims to ensure a sustainable and effective approach to asset management, service delivery, and financial responsibility within the community.

Framework 2 for Asset Planning and Management encompasses seven critical elements designed to underscore key management issues, foster prudent, transparent, and accountable management of local government assets, and introduce a strategic approach to address current and emerging challenges. These elements are:

1. **Asset Management Policy:**

    - Establishes the overarching principles and guidelines for managing local government assets.

[1] LGPMC, 2009, Framework 2 Asset Planning and Management, p 2.
[2] LGPMC, 2009, Framework 3 Financial Planning and Reporting, pp 2-3.
[3] LGPMC, 2009, Framework 3 Financial Planning and Reporting, pp 4-5.

2. **Strategy and Planning:**
    - *Asset Management Strategy:*
        - Provides a high-level framework outlining the strategic direction for managing assets.
    - *Asset Management Plan:*
        - Details specific actions and plans to implement the Asset Management Strategy effectively.
3. **Governance and Management Arrangements:**
    - Defines the organizational structures, roles, and responsibilities necessary for effective asset management governance.
4. **Defining Levels of Service:**
    - Outlines the desired levels of service for local government assets, ensuring alignment with community expectations.
5. **Data and Systems:**
    - Addresses the importance of accurate and comprehensive data collection and management systems to support informed decision-making.
6. **Skills and Processes:**
    - Focuses on the development and maintenance of the necessary skills and processes within the organization to execute effective asset management.
7. **Evaluation:** [4]
    - Emphasizes the importance of ongoing evaluation and review processes to assess the effectiveness of asset management practices, enabling continuous improvement.

By incorporating these seven elements, Framework 2 aims to provide a comprehensive and strategic approach to asset planning and management, fostering responsible and forward-thinking asset management practices within local government entities.

The asset management strategy for Shoalhaven Water aims to:

- Show how its asset portfolio will meet the service delivery needs of its community into the future
- to enable Shoalhaven Water asset management policies to be achieved
- to ensure the integration of Shoalhaven Water asset management with its long-term strategic plan[5]

The goal of asset management is to ensure that services are provided:

- in the most cost-effective manner to optimise the delivery of services,
- manage assets through their entire lifecycle including the creation, acquisition, maintenance, operation, rehabilitation, and disposal,
- cater to the needs of both present and future consumers.

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[4] LGPMC, 2009, Framework 2 *Asset Planning and Management*, p 4.
[5] LGPMC, 2009, Framework 2 *Asset Planning and Management*, p 4.

The objective of the Asset Management Strategy is to establish a comprehensive framework guiding the planning, construction, maintenance, and operation of essential infrastructure. This framework ensures Shoalhaven Water can consistently deliver services to the community throughout the entire life cycle of assets, achieving agreed-upon Levels of Service at affordable costs. -

Shoalhaven Water has adopted the following objectives to drive asset management within the organisation:

1. **Clear AM Structure and Roles:**
    - Define AM structure, roles, and responsibilities clearly within Shoalhaven Water, with management committed to providing necessary resources at all organisational levels.
2. **Outcome-Based Decision Making:**
    - Base decision-making on outcomes and rely on reliable, up-to-date information.
3. **Stakeholder Consultation:**
    - Undertake stakeholder consultation in line with Shoalhaven Water's Customer Service Plan, Council Policies, and SW Asset Management Communications Plan. Deliver services to the agreed standard with stakeholders.
4. **Risk Management:**
    - Align risk management with Council's risk management plans and ISO 9001 standards and develop asset risk management for critical assets.
5. **Asset Financial Management & Reporting:**
    - Adhere to AASB guidelines and SCC Policies for asset financial management and reporting.
6. **Comprehensive AM Reporting:**
    - Conduct AM reporting under Council Policy and AASB guidelines.
7. **Statutory Compliance:**
    - Ensure Asset Management systems and processes are aimed at statutory compliance.
8. **Up-to-Date AM Plans:**
    - Prepare current AM plans for all asset classes under the control of SW.
9. **Continuous Review and Improvement:**
    - Continuously review and improve AM processes. Implement ongoing improvement plans for AM systems, data, and processes.

The Asset Management Strategy will undergo an annual review by the Asset Management Steering Committee to address any changes in legislation or government policy. Furthermore, the Strategy will be comprehensively updated every 3 to 5 years, guided by the Water Asset Planning & Development Manager.

1.5 Legislative reform

As the Water Utility provider for the community, Shoalhaven Water operates as a Group within Shoalhaven City Council. Council is required to comply with the Local Government Integrated Planning & Reporting Guidelines. This includes a requirement to prepare.

- Community Strategic Plan (CSP),
- Resourcing Strategy,
- 4-year Delivery Program,
- Annual Operational Plan, and
- Annual Report

1.5.1 Local Government Act, Amendment Act and Amendment Regulation

The key legal and regulatory requirements for asset management are set out in the:

- Local Government Act 1993,
- Local Government Amendment (Planning and Reporting) Act 2009,
- Local Government (General) Amendment (Planning and Reporting) Regulation 2010.

The following key documents are used to guide asset management planning activities.

1.5.2 Integrated Planning and Reporting (IPR) Guidelines

The Integrated Planning and Reporting (IPR) Guidelines for local government in NSW list all the mandatory requirements from the Local Government Act and the Local Government Amendment Regulation 2013. Shoalhaven Water must comply with the Essential Elements set out in the IPR Guidelines when planning and reporting to comply with the Local Government Act.

1.5.3 New Regulatory & Assurance Framework

From the 1 July 2022 all regional NSW water utilities are required to comply with the new regulatory and assurance framework which replaces the Best Practice Management Guideline 2007. The new framework identifies the role of local water utilities in that they are required to deliver safe, secure, efficient, and affordable water and sewerage services to customers and communities, providing public health outcomes, and supporting economic development, liveability, and the environment. In support of these functions the Department of Primary Industry and Environment (Water Division) has released 12 guidance papers which provide direction to local water utilities on how to demonstrate effective evidence based strategic planning outcomes. The 12 guidance papers are.

1. Understanding Service Needs
2. Understanding Water Security
3. Understanding Water Quality
4. Understanding Environmental Impacts
5. Understanding System Capacity, Capability and Efficiency
6. Understanding other Key Risks and Challenges
7. Understanding Solutions and Delivery Services
8. Understanding Resourcing Needs
9. Understanding Revenue Sources
10. Make and Implement Sound Strategic Decisions
11. Implement Sound Pricing & Prudent Financial Management
12. Promote Integrated Water Cycle Management

These guidance papers offer direction and support to local water utilities in effectively addressing and fulfilling their roles within the new regulatory framework, emphasizing evidence-based strategic planning outcomes across various facets of water management.

1.5.4 National Water Initiative (NWI)

The Australian Government established the National Water Commission (NWC) to implement the National Water Initiative (NWI). Whilst the Commission is no longer operating the NWI provided a national water performance-reporting framework that requires annual reporting by Shoalhaven Water on several key indicators and subsequent benchmarking with the results tabled in a National Performance Report. This function is managed nationally through the Bureau of Meteorology. Shoalhaven Water is also required to review and provide an action plan addressing any areas of under-performance identified in the NSW State Government Triple Bottom Line Summary each year.

Other Acts and Regulations

Table 1-1 Acts, Regulations, Guidelines and Standards

Type	Name
Acts and Regulations	Independent Pricing and Regulatory Tribunal (IPART) Act 1992
	Dams Safety Act & Regulations
	Environmental Planning and Assessment Act 1979
	Catchment Management Authorities Act 2003
	Soil Conservation Act 1938
	Fluoridation of Public Water Supplies Act 1957
	Water Management Act 2000 & (General) Regulations 2011
	Protection of the Environment Operations Act 1997
	Water Industry Competition Act 2006
	Work Health & Safety Act 2011
	Water NSW Act 2014
	Trade Practices Act 1974
	Local Government Act 1993 & (General) Regulations 2005
	Public Health Act 2010 and Public Health Regulation 2012
Guidelines	Australian Drinking Water Guidelines 2011
	Developer Charges Guidelines for Water Supply, Sewerage & Stormwater 2016
	Section 64 Determination of Equivalent Tenement Guidelines
	National Health & Medical Research Shoalhaven Water (NHMRC) Guidelines (2004)
Standards	Australian Standard 4360: Risk Management 2008
	Australian Accounting Standards

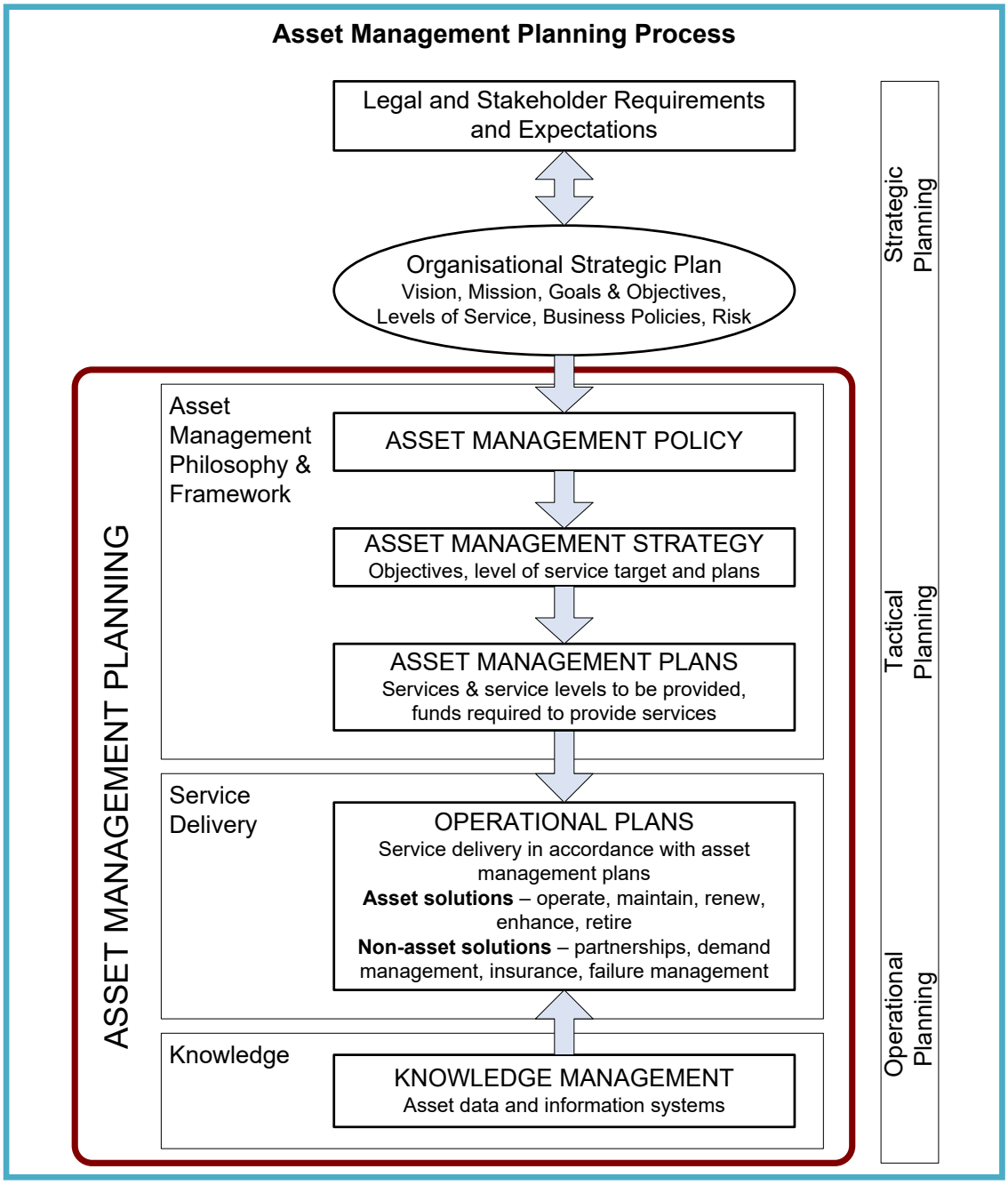
For a full description of the Acts and Regulations, refer to the Shoalhaven Water Asset Management Plans.

1.6 Asset Management Planning Process

Asset management planning is a comprehensive process designed to guarantee the effective management and maintenance of assets, ensuring the provision of affordable services through infrastructure in the most economically optimal manner. This process relies on assessing Shoalhaven Water's financial sustainability under various scenarios to determine feasible service levels.

The asset management planning process initiates by defining stakeholder and legal requirements and needs. These requirements are then integrated into the organization's strategic plan. Subsequently, the process involves developing an asset management policy, strategy, asset management plan, and operational plans—all interconnected with a long-term financial plan that includes a funding plan. This comprehensive approach ensures alignment between the strategic objectives, operational requirements, and financial sustainability of Shoalhaven Water, facilitating the delivery of cost-effective and sustainable services.[6]

Figure 1-1 Asset Management Planning Process



[6] IPWEA, 2009, AIFMG, Quick Guide, Sec 4, p 5.

2 What Assets do we have?

Shoalhaven Water uses infrastructure assets to provide services to the community. The range of infrastructure assets and the services provided are shown in Table 2-1.

Table 2-1 Assets used for Providing Services

Asset Class	Description	Quantity (17/18)	Services Provided
Water Supply	Water Treatment Plants Water reservoirs Water Pump Station Dams Water Mains Hydrants Valves	4 47 25 5 +1550km+10,900 +7350	Provision of potable water for residential, commercial and industrial customers.
Wastewater Service	Treatment Plants Pump Stations Gravity Mains Rising Mains Pressure Mains Pressure Sewer Units Valves REMS Infrastructure	14 225 +1000km +197km +31km +1670 +2000 71km	Collection, treatment & disposal of wastewater for residential, commercial and Industrial premises Provision of Reclaimed effluent
Communications Facilities	Towers Buildings Poles Structures	16 15	Provision of Communications links and services to Shoalhaven Water, Council and external users.

2.1 Key Stakeholders

The key stakeholders of Shoalhaven Water's assets are those groups of people who have a vested interest in the responsible management of the assets. The following list identifies key stakeholders and a description of their role in the management of corporate assets:

Councillors

This stakeholder group includes Councillors and the Mayor. They are primarily responsible to ensure that their decisions represent and reflect the needs of the wider community as expressed through community surveys and community engagement.

Council Staff

Council staff play a role in managing assets to ensure that they provide a level of service that meets the needs of residents, businesses, and visitors to the area. Council staff implement the components identified in the asset management plans. In most cases Council staff are also the core users of the assets. Often the use of these assets is for the purpose of delivering services to the community.

Residents and Local Businesses

Residents and local businesses are the core users of water supply, wastewater and communication assets owned and operated by Shoalhaven Water. Their needs, and aspirations are conveyed to Council through community engagement, and will be reflected in the levels of service.

Visitors

Visitors are also important users of assets within the Shoalhaven area with the population tripling over peak periods. Visitors' wants, needs and expectations drive the development in areas of the highest usage and commercial areas.

2.2 Risk

Risk is defined as the likelihood of an event occurring that could directly impact an organisation or its operating environment, leading to financial and/or operational consequences. Shoalhaven Water recognises the importance of risk management as an integral part of sound corporate practice. Although it is acknowledged that achieving a completely risk-free environment is not possible, effective risk management involves avoiding, reducing, transferring, or accepting risks.

The overarching objectives of Shoalhaven Water's risk management approach are as follows:

1. **Asset Risk Management:**
    - Outline the process for managing risks associated with the organisation's assets.
2. **Risk Identification:**
    - Identify operational and organizational risks.
3. **Risk Evaluation and Prioritization:**
    - Evaluate identifiable risks, prioritize them, and formulate treatment solutions over a corresponding timeframe.
4. **Responsibility Allocation:**
    - Allocate responsibility for managing identified risks to specific staff members.

Shoalhaven Water has integrated risk management principles into its decision-making process through a corporate risk register aligned with the International Standard for Risk Management Standards (ISO 31000:2009). This facilitates a structured and standardised approach to risk management across the organization.

Additionally, for critical assets with a high consequence of failure, asset risks have been assessed. These risks, along with associated mitigation measures, have been defined, cost, and included in the relevant asset management plan. Ongoing monitoring of risks and assessment of mitigation measures will align with Council's risk appetite statement and Shoalhaven Water's risk profile. This approach ensures a proactive and comprehensive strategy for managing and mitigating risks associated with both organizational and asset-level considerations.

2.3 Critical Assets & Critical Customers

In 2012-2013 Shoalhaven Water developed a framework for assessing criticality of our assets and customers. This assessment was followed by the development of management strategies, and subsequently the framework was used identify these assets and customers. Workshops were then conducted, engaging staff across the organisation to define consensus on criticality criteria for each asset type. Subsequent analysis determined the critical assets, and datasets were generated for integration into management systems planning.

The definitions of critical assets

Asset criticality is defined in terms of the consequences of asset failure. Three criticality grades have been defined as follows:

Extremely Critical: Assets where the consequences of failure are unacceptable and must therefore be reduced.

Critical: Assets where the consequences of failure are sufficiently serious that it is desirable to avoid the failure of these assets to the extent that it is practicable to do so.

Non-critical: Assets where the consequences of failure are not significant enough that Shoalhaven Water should actively commit resources to preventing their failure.

2.3.1 Critical asset identification criteria

Assets are potentially critical if their failure would have significant detrimental impacts on service delivery or compliance, on the local community, or on the financial performance of Shoalhaven Water.

The assets considered for the criticality test included in the list below -

Generally, the following attributes discussed in this section apply to potentially critical assets. Assets which fall under the categories explained below were assessed based on the significance of the consequences of asset failure which include both operational and social impacts.

Operational impacts of the asset failure are the effects on Shoalhaven Water's ability to operate, measured by the cost and time required to repair the asset, and the effect on Shoalhaven Water's ability to maintain compliance with legislative requirements.

Social impacts of the asset failure are the effects on customers and the community, measured by the severity of the effects, their magnitude or scale, and their duration.

Criteria	Description
Assets serving large populations	The failure of assets serving large populations may result in a critical disruption of service or may cause significant health risk. They are also typically larger, more expensive to repair and take longer to repair, and can cause significant damage or disruption at the point of failure (e.g. flooding). The population and pipe size thresholds for critical water assets are ≥ 500 and ≥ 300mm, respectively. These thresholds are indicative based on previous experience with comparable water service providers.
Assets serving extremely critical customers	Extremely critical customers are those for which the disruption of water supply may present a serious threat to human life (e.g. notified dialysis patients, hospitals and surgical facilities). Assets serving extremely critical customers shall be considered potentially critical if failure of the asset would impact service delivery to the customer.
Assets likely to disrupt critical infrastructure or services	Critical infrastructure or services include heavily trafficked roads or rail lines, access to emergency services (such as hospitals, fire stations, police station, or ambulance stations), and access to key facilities (such as airports and ports). The failure of assets in these locations can result in significant disruption to the local community or other infrastructure services. Disruption may occur as a direct result of damage caused by failure of the water asset.
Assets required for compliance with legislative requirements	Some levels of service and monitoring requirements are mandated by legislation. Failure of assets which provide those levels of service or monitoring functions would cause Shoalhaven Water to be non-compliant with legislative requirements. Water assets which fall under this category include fire hydrants, turbidity or residual monitoring equipment, and SCADA or Telemetry systems.

Critical Valves (Water Trunk and Distribution Networks)	Since water valves on trunk and distribution networks provide a range of critical functions within the water supply network, they should be considered critical although they may not necessarily qualify as critical based on the previously presented criteria. Valves which should be considered critical include: Valves which operate In emergencies – fire hydrants, zone valves, and isolation valves on reservoir inlets and outlets, connections to extremely critical customers, and on critical water mains. Valves which operate continuously - pressure reducing valves (PRVs) / pressure sustaining valves (PSVs) / water hammer arresting valves (WHAVs), non-return valves, and backflow prevention devices.

2.3.2 Critical Customers

Critical customers and stakeholders are defined as follows:

- Extremely Critical Water Customers: customers for which the disruption of water supply may present a serious threat to human life.
- Critical Water Customers: Customers for which disruption of water supply would present a significant impact on facility operations but not a serious threat to life or safety.
- Critical Wastewater Customers: Stakeholders or customers particularly sensitive to the public health risk or disruption posed by wastewater overflows.
- Other Critical Customers: Emergency services, and key infrastructure or facilities which could be disrupted by the failure of water or wastewater assets.

Criteria	Description	Customer Type
Extremely Critical Water Customer	Serious threat to human life, safety or welfare or serious threat to animal welfare	• In-patient hospitals and surgical facilities • Dialysis facilities / patients
Critical Water Customer	Significant impact on facility operations	• Doctors and dentists • Medical facilities and out-patient hospitals • Assisted living facilities • Educational institutions (e.g. schools, • universities) • Kindergartens / day care facilities • High water users (• 35 mega litres/year) • Medical/ food production facilities • Utility facilities which require water for operation • (e.g. gas storage facilities) • Prisons • Zoos or other large scale animal housing or • processing facilities
Critical Wastewater Customer	Heightened public health risk or sensitivity to sewer overflows. Liquid trade waste customer	• Assessed based on level of risk

2.4 The Organisation's Assets and their management?

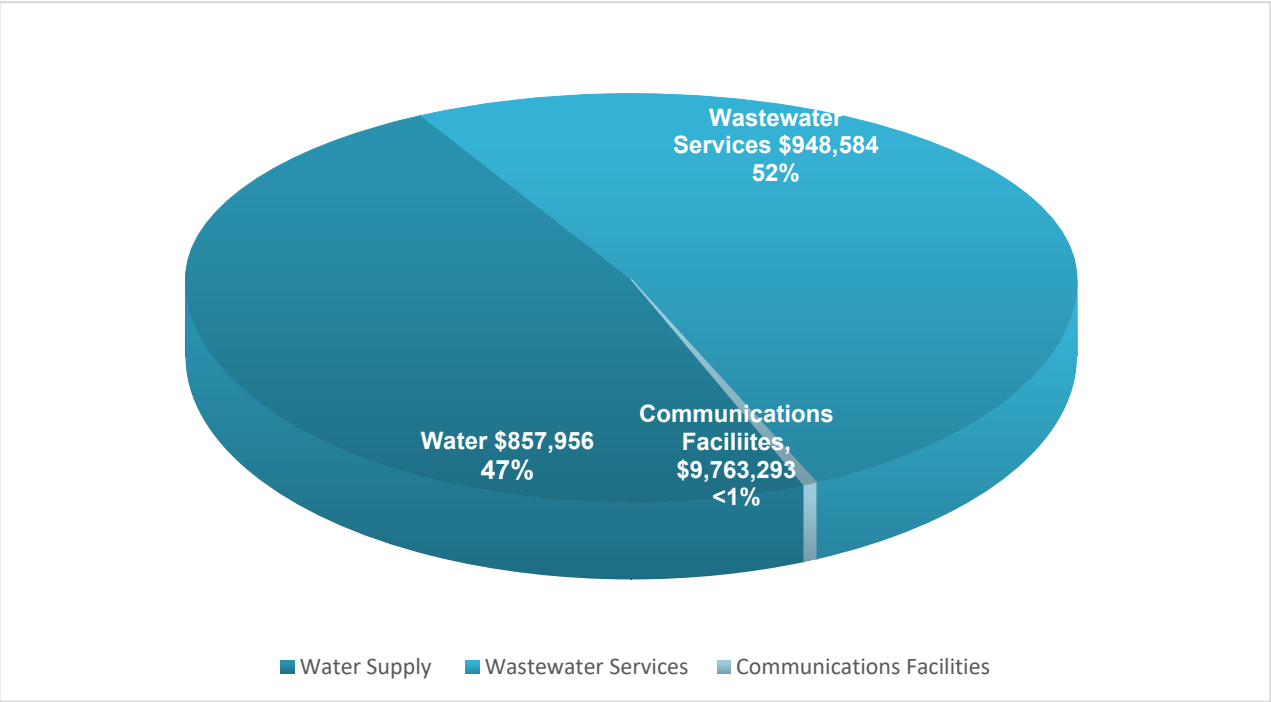
2.4.1 State of the Assets

The financial status of the organisation's assets is shown in Table 3-2.

Table 2-2 Financial Status of the Assets (30/6/2022)

Asset Class	Replacement Cost ($000)	Residual Value ($000)	Depreciable Amount ($000)	Depreciated Replacement Cost ($000)	Depreciation Expense ($000)
Water Supply	857,956	0	857,956	350,875,	10,995,
Wastewater Service	948,584	0	948,584	655,750,	13,537,
Communications Facilities	9,763,	0	9,763	4,659	295,
Total	**$ 1,816,303,**	**0**	**$ 1,816,303,**	**$1,011,284**	**$24,827**

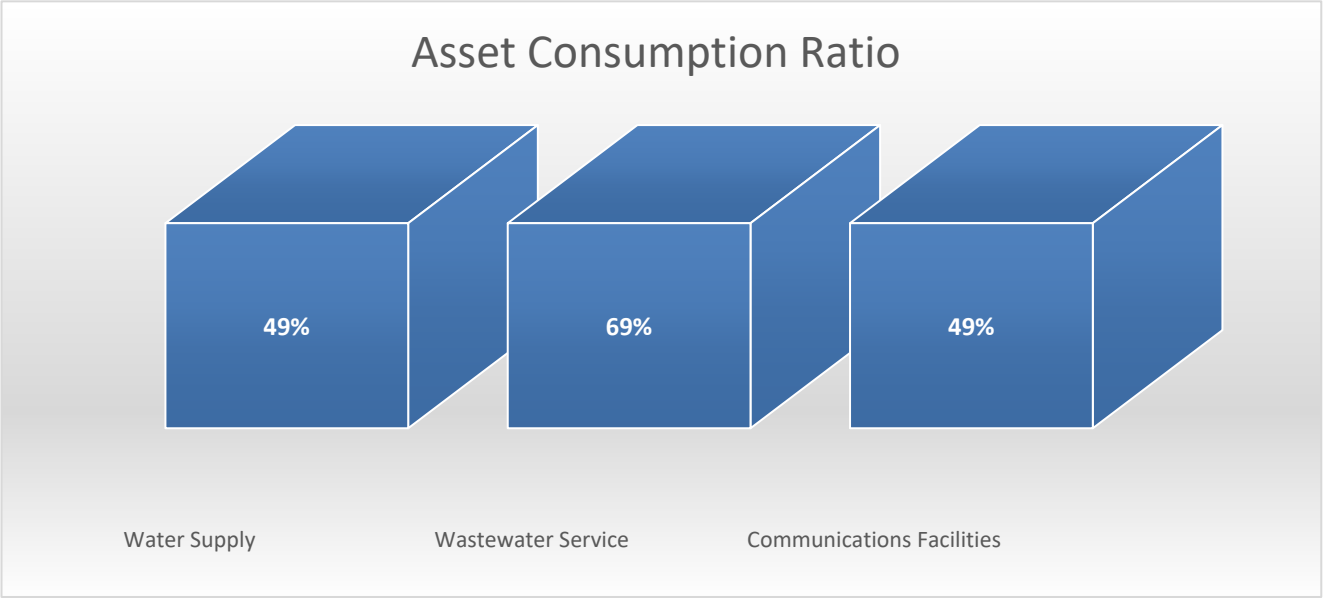
Figure 2-1 Asset Replacement Values



The asset consumption ratios shown below is the average proportion of 'as new' condition left in assets. It is derived from the depreciated replacement cost less residual value divided by the depreciated amount.

Figure 3-2 Asset Consumption Ratio, indicates that communications facilities are the least depreciated asset class mainly due to the relative age of this class. Water supply assets and wastewater assets classes are over the 50% mark with wastewater only 69% as new when compared to the depreciation of that asset class. The consumption ratio for wastewater was reduce significantly with the current projects to replace aging wastewater treatment plants at Bomaderry and Nowra, which represents a $150M investment. Whilst most major plants within the water and wastewater areas are relatively new the pipe infrastructure is generally older and represents 48% of the wastewater asset value and 54% of the water supply asset value. Whilst these are generally long-life assets, ongoing investment in the pipe rehabilitation will need to be undertaken as pipes move closer to the end of their useful life.

Figure 2-2 Asset Consumption Ratio



The condition of Shoalhaven Water assets is shown in Figure 3-3 Asset Condition Profile Wastewater, Figure 3-4 Asset Condition Profile Water Supply and Figure 3-5 Asset Condition Profile Communications Facilities.

Figure 2-3 Asset Condition Profile Wastewater

Wastewater Assets	Averaged Condition Rating
Wastewater Treatment Plants	2
Sewer Pump Stations	2
Gravity Sewers	2
Rising Mains	2
Low Pressure Sewers	1
REMS Pipes	2
REMS Nodes	2
Manholes	2
Pressure Pumps	1
Pressure Pump Units	1
Buildings	2

Key: Highly Reliable | Reliable | Uncertain | Very Uncertain | Unknown

Figure 2-4 Asset Condition Profile Water Supply

Water Supply Asset Group	Averaged Condition Rating
Water Storage Dams	2
Treatment Plants	2
Service Reservoirs	2
Pipe System	2
Pump Stations	2
Buildings	2

Key: Highly Reliable | Reliable | Uncertain | Very Uncertain | Unknown

Figure 2-5 Asset Condition Profile Communications Facilities

Communications Facilities	Averaged Condition Rating
Towers	2
Buildings	2
Associated Infrastructure	2

Key: Highly Reliable | Reliable | Uncertain | Very Uncertain | Unknown

Council is required to include the condition of its water & wastewater assets as part of Special Schedule 7 in its annual financial statements. The asset condition for each asset category (water supply is one asset category) is defined using a “key” as per the NSW Local Government Asset Accounting Manual. This “key” is as follows:

Table 2-3 Infrastructure Asset Condition Assessment “Key” (SCC Annual Financial Statements 30 June 2022)

1	Excellent – No work required (normal maintenance)
2	Good – Only minor maintenance work required
3	Average – Maintenance work required
4	Poor – Renewal required
5	Very Poor – Urgent renewal/upgrading required

The water supply information in the 2021/22 Special Schedule 7 is as follows:

Asset Condition Reported in Annual Financial Statements
(SCC Annual Financial Statements 30 June 2022)

Level	Condition	Description	GR	Percent
1	Very Good	No work required (normal maintenance)	$42,897,828	**5%**
2	Good	Only minor maintenance work required	$223,068,704	**26%**
3	Satisfactory	Maintenance work required	$489,035,236	**57%**
4	Poor	Renewal required	$94,375,221	**11%**
5	Very Poor	Urgent renewal/upgrading required	$8,579,566	**1%**
		Total	**$857,956,555**	**100%**

**Assets in Condition as a % of Written Down Value.*

This information only provides an overall "snapshot" of the water supply asset condition.

Ninety percent of all above ground assets are inspected annually with damaged or leaking fitting replaced/rectified when identified. This gives a general rating of at least good condition (2).

Full details of the asset condition profile for water and wastewater treatment plants, pump stations, reservoirs and associated infrastructure is available in the asset condition reports from the 2022 Asset Accounting Report.

Asset Condition Reported in Annual Financial Statements
(SCC Annual Financial Statements 30 June 2022)

Lev	Condition	Description	GR	Percent
1	Very Good	No work required (normal maintenance)	$142,287,692	**15%**
2	Good	Only minor maintenance work required	$350,976,307	**37%**
3	Satisfactory	Maintenance work required	$407,891,384	**43%**
4	Poor	Renewal required	$37,943,385	**4%**
5	Very Poor	Urgent renewal/upgrading required	$9,478,497	**1%**
			$948,584,613	**100%**

**Assets in Condition as a % of Written Down Value.*

This information only provides an overall "snapshot" of the wastewater asset condition.

Shoalhaven Water has undertaken condition assessment of assets as part of a 5-year relining program. All relined sewers are now specified as condition 1 with assets inspected and cleaned but not relined as condition 2.

In 2022 Shoalhaven Water undertook to inspect and update existing data on all above ground non-pipe assets. From this project, condition was recorded and reported for future planning and budgeting. This information will then be used to update the asset register and to priorities capital expenditure.

2.5 Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include operating and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is shown in table 4-3.

Table 2-4 Life Cycle Cost for Shoalhaven Water Services

Service	3 Year Average Expenditure		2022 Depreciation	Life Cycle Cost ($/yr)
	Operations $	Maintenance $	Depreciation Ex	
Water Supply	$12,178,540	$2,993,880	$10,354,080	$ 25,526,490
Wastewater Service	$16,203,310	$3,564,980	$12,980,120	$ 32,748,410
Communications Facilities	$268,130	$89,130	$294,743	$ 652,003
TOTAL	$28,649,980	$6,647,990	$23,628,943	$ 58,926,913

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes operating, maintenance and capital renewal expenditure in the previous year or preferably averaged over the past 3 years. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure at the start of the plan is shown in table 4-4 Life Cycle Expenditure for Shoalhaven Water Services below.

Table 2-5 Life Cycle Expenditure for Shoalhaven Water Services

Service	3 Year Averaged Expenditure		Cap Renewal Exp	Life Cycle Exp ($/yr)
	Operations	Maintenance	($/yr)	
Water Supply	$12,178,540	$2,993,880	$6,801,000	$21,973,420
Wastewater Service	$16,203,310	$3,564,980	$5,871,000	$25,639,290
Communications Facilities	$268,130	$89,130	$11,030.00	$368,290
All Services	$28,649,980	$6,647,990	$12,683,030	$47,981,000

(Water & Wastewater capital renewal figures averaged 3 years from SS7 financial reporting figures)

The comparison between life cycle costs and life cycle expenditure serves to highlight disparities between current expenses and the average cost of delivering a service over the long term. If life cycle expenditure falls below life cycle costs, it suggests a likelihood of needing future increases in outlays or implementing service cuts.

Understanding the magnitude and timing of necessary outlay increases, along with the potential service consequences in the absence of funding, is crucial for organizations striving to provide sustainable services to their communities. This forms the primary objective of Asset Management Plans (AM Plans) and long-term financial planning.

Identifying a shortfall between life cycle costs and life cycle expenditure provides insight into the life cycle gap that needs attention in asset management and long-term financial planning. Addressing this gap becomes pivotal in ensuring the financial sustainability of service provision.

The life cycle gap and life cycle indicator for services covered by this asset management plan is summarised in table 4-5.

Table 2-6 Life Cycle Indicators

Service	Life Cycle Cost ($/yr)	Life Cycle Expenditure ($/yr)	Life Cycle Gap * ($/yr)	Life Cycle Indicator
Water Supply	$25,526,500	$21,973,420	-$3,553,080	86%
Wastewater Service	$32,748,410	$25,639,290	-$7,109,120	78%
Communications Facilities	$652,003	$368,290	-$ 283,713	56%
All Services	$58,926,913	$47,981,000	-$10,945,913	

*Note: * A life cycle gap is reported as a negative value*.

Water supply assets are presently funded at 86% of their life cycle cost. Despite the assets being in good condition with spare capacity and approaching the midpoint of their expected useful life, a slight gap in life cycle expenditure is currently acceptable. However, in the long term, it is imperative to reduce this gap through increased investment in asset renewals.

While the assets are considered mid-aged, it's anticipated that operation and maintenance expenses will rise as infrastructure ages. This, coupled with the current volatility in inflation and construction costs, poses a challenge that requires ongoing monitoring to ensure effective cost management in the future. The current funding, based on the Consumer Price Index (CPI), must be closely monitored to ensure that costs can still be managed within the existing budget.

Upgrades to key assets, such as Bamarang and Burrier Water Pumping Stations (WPS) and Water Treatment Plants (WTP), will also impact renewals and life cycle costs. Therefore, a proactive approach to investment and monitoring is crucial to ensure the continued efficiency and sustainability of the water supply infrastructure.

Wastewater service assets are presently funded at 86% of their life cycle cost. Over the last 5 years, Shoalhaven Water has invested over $150 million in renewing two wastewater treatment plants, as well as substantial upgrades to large pumping stations and rising mains. Despite these investments, operational costs and depreciation expenses have seen a significant increase, negatively impacting the life cycle indicator.

Capacity issues at other wastewater treatment plants, including Culburra, Sussex Inlet, St Georges Basin, and Ulladulla, are anticipated to necessitate substantial investment over the next 5 to 10 years. Ongoing commitments to invest in pipe and pump station assets are also vital to maintain the current level of service into the future.

Similar to water supply operations and maintenance, funding is incrementally increased in current budgets to accommodate the growing costs associated with aging infrastructure. However, it's essential to closely monitor the potential impact of large inflationary increases to ensure financial sustainability in managing wastewater service assets. A proactive approach to investment is crucial to address capacity issues and maintain efficient wastewater service operations.

Communications Facilities have relatively low operations and maintenance expenses when compared to the replacement cost however, renewal of these assets is generally driven by capacity therefore useful life of some assets can be difficult to manage with rapid technological advances and the need for increased data and connections.

2.6 Future Demand

The primary objective of asset management is to efficiently create, operate, maintain, rehabilitate, and replace assets, ensuring they meet the required level of service for current and future customers in an environmentally sustainable and cost-effective manner.

Shoalhaven Water is actively engaged in the development of Water and Wastewater Servicing Strategies, along with detailed hydraulic models. These initiatives aim to project the demand for water supply services from 2023 to 2053 and identify the necessary capital works to accommodate this demand. Anticipated future demand indicates an increase through 2053, with the Nowra/Bomaderry area exhibiting the highest growth rate, as detailed in Section 6.4 of the Asset Management Plans (AMPs).

The existing 20-year financial plan encompasses a capital works program exceeding $600 million, covering renewals, growth, asset enhancement, and other necessary works. In light of this, the Asset Management Strategy is crucial for forecasting the future needs and demands of the community. It must outline strategies to develop assets that align with these needs. Factors influencing demand include population growth, as well as social and technological changes. A forward-looking approach is essential to proactively address these factors and ensure the ongoing effectiveness and sustainability of the assets.

2.7 Asset Management Structure

Shoalhaven Water recognises the pivotal role of Asset Management within the broader framework of the Council. Consequently, asset management is integrated as a key function across all areas of Shoalhaven Water, encompassing customer service, operations & maintenance, and planning. In 2014, as part of a corporate restructure, Shoalhaven Water's management made the strategic decision to establish an Asset Management Team, placed under the purview of the Water Asset Planning & Development Manager.

This specialised unit is comprised of a unit manager, asset officers, engineering officers, and consultants. The primary mission of the Asset Management Section is to cultivate a corporate culture of effective asset management within Shoalhaven Water. With the increasing maturity in both asset management and portfolio planning, a restructuring of the asset management team has been initiated. The Assets and Projects team is merging with the Portfolio Planning team.

This integration aims to establish a more effective working structure, providing specialisation in the water and wastewater domain. It enables the teams to concentrate on managing the data that underlies these intricate systems, ensuring a seamless pipeline of projects. This strategic move is designed to enhance our asset management and portfolio planning capabilities, enabling us to continually advance and align with our corporate goals. This is particularly crucial within the increasingly complex strategic environment we operate in.

2.8 Asset Management Steering Committee

To steer the strategic direction of the of asset management within Shoalhaven Water the Asset Management Steering Committee was established in 2015. This committee is instrumental in providing guidance, setting strategic direction, and spearheading initiatives related to asset management. The adoption of this strategic approach ensures a unified and coordinated effort across the Shoalhaven Water, with the overarching goal of optimising asset performance, promoting sustainability, and enhancing overall operational efficiency. The Asset Management Steering Committee serves as a

pivotal mechanism for aligning organisational goals with effective asset management practices, reinforcing the organisation's commitment to strategic and efficient asset management.

The AMSC consists of the following permanent members:

- Executive Manager, Shoalhaven Water (Executive Sponsor)
- Water Asset Planning & Development Manager (Project Sponsor)
- Assets and Portfolio Manager (Chair)
- Finance Business Partner
- Manager Water Operations
- Manager Business Services

The AMSC will invite other representatives to attend meetings as required, Manager Finance Division, Manager Customer Services and External Advisor (as required).

The AMSC meets monthly for approximately 1 – 2 hours, or at any point throughout the project where key information or a key decision is to be made and the timing of the next meeting would result in an untimely delay in the decision-making process.

A Terms of Reference document (April 2015) (D15/99691) provides overarching purpose and focus to the AMSC.

2.9 Corporate Asset Management Team

A 'whole of organisation' approach to asset management can be developed with a corporate asset management team. The benefits of a corporate asset management team include:

- demonstrating corporate support for sustainable asset management,
- encouraging corporate buy-in and responsibility,
- coordinating strategic planning, information technology and asset management activities,
- promoting uniform asset management practices across the organisation,
- information sharing across IT hardware and software,
- pooling of corporate expertise
- championing of asset management process,
- wider accountability for achieving and reviewing sustainable asset management practices.

The role of the asset management team will evolve as the organisation maturity increases over several phases as per the table below.

Phase 1	• Strategy development and implementation of asset management improvement program,
Phase 2	• asset management plan development and implementation, • reviews of data accuracy, levels of service and systems plan development,
Phase 3	• asset management plan operation • evaluation and monitoring of asset management plan outputs. • ongoing asset management plans review and continuous improvement.

The current position of Shoalhaven Water asset management team is.

- **Section Manager Water Asset Planning & Development**
- **Assets & Portfolio Manager**
- **Asset Data Coordinators**
- **Communications Site Coordinator**
- **Technical Officer Asset.**
- **Senior Portfolio Planners**
- **Portfolio Planning Engineers**
- **Senior Asset Strategies**

2.10 Financial & Asset Management Core Competencies

The National Frameworks on Asset Planning and Management and Financial Planning and Reporting define 10 elements. 11 core competencies have been developed from these elements[7] to assess 'core' competency under the National Frameworks. The core competencies are:

Financial Planning and Reporting

- Strategic Longer-Term Plan
- Annual Budget
- Annual report

Asset Planning and Management

- Asset Management Policy
- Asset Management Strategy
- Asset Management Plan
- Governance & Management
- Levels of Service
- Data & Systems
- Skills & processes
- Evaluation

Shoalhaven Water 2021 Maturity Assessment identified Shoalhaven Water's asset management have improved to intermediate and provided a list of improvements to maintain and improve the current level of competencies. The list of improvements is detailed in Appendix A.

2.11 Levels of Service

Levels of Service are defined standards to facilitate the strategic goals and expectations of both Council and the Community, in a technical meaningful manner. In its basic sense, the development of Levels of Service involves the identification the desired outcomes of all stakeholders and defining such outcomes in asset measures such as quality, quantity, reliability, cost and the like. Shoalhaven Water's Customer Service Plan articulates Shoalhaven Water's responsibilities for providing this essential function in a sustainable way, the minimal levels of service customers can expect and our performance as a water utility for ease of comparison of the customer experience against industry wide benchmarks.

Levels of Service, in an asset management environment, relate to the physical asset and associated activities. As such Levels of Service provide significant influence on all asset management decisions.

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[7] Asset Planning and Management Element 2 *Asset Management Strategy and Plans* divided into Asset Management Strategy and Asset Management Plans competencies.

Considerable effort has been invested by Council to establish Levels of Service for key corporate activities, to align with information collated through Community consultation.

2.12 Strategy Outlook

Shoalhaven Water's strategic outlook for the next 5 to 10 years is marked by a proactive and comprehensive approach to water and wastewater management. The organisation recognises the critical role of effective asset management in ensuring sustainable service delivery whilst maintaining agreed levels of service.

Over the next decade, Shoalhaven Water anticipates a growing demand for water supply services, particularly in the Nowra/Bomaderry area. The ongoing development of Water and Wastewater Servicing Strategies and detailed hydraulic models demonstrates a commitment to informed decision-making, ensuring that capital works programs align with projected demands from 2023 to 2053.

Investments exceeding $600 million in the 20-year financial plan reflect a dedication to asset renewal, growth, and enhancement.

Recognising the challenges posed by operational and depreciation cost increases, coupled with the volatility in inflation and construction costs, Shoalhaven Water is committed to vigilant monitoring. Incremental funding adjustments in current budgets, coupled with an awareness of potential large inflationary increases, demonstrate a financial foresight to manage costs effectively.

As the organisation looks ahead, the strategic vision encompasses not only immediate concerns but also long-term sustainability. The Asset Management Strategy plays a pivotal role in forecasting community needs, addressing capacity issues, and aligning with corporate goals. Shoalhaven Water's dedication to fostering a corporate culture of good asset management ensures that it remains adaptive and resilient in the face of evolving challenges, positioning it for continued success in the coming years.

The organisation's current asset management maturity is intermediate however, investment is needed to improve information management, lifecycle management, scheduled maintenance, service management & accountability and direction.

2.13 Shoalhaven City Council's Vision, Mission, Goals and Objectives

The Community Strategic Plan sits at the top of the Council planning hierarchy and identifies the community's main priorities for the future and the ways to achieve these goals. Council's vision is set out in the Community Strategic Plan (CSP) as:

"We will work together in the Shoalhaven to foster a safe and attractive community for people to live, work, stay and play; where sustainable growth, development and environmental protection are managed to provide a unique and relaxed lifestyle"

In delivering Council's vision through a 20-year planning horizon for the provision of water supply and sewerage services, Shoalhaven Water's vision is set out in the Shoalhaven Water Community Strategic Business Plan 2022/23. The Shoalhaven Water Customer Service Plan also identifies that ***leading the way towards a bold future can sustain growth and economic development while retaining a lifestyle which is uniquely Shoalhaven, and describes our mission is to "Provide efficient, effective water and wastewater services to the Shoalhaven".***

Shoalhaven Water's vision, mission and values are presented in the Strategic Business Plan (SBP) 2023 (D15/135927) as follows:

Vision:

Defined by our spectacular beaches, surrounding natural forests and lakes, Shoalhaven Water connects distinct communities with water supply and sewerage services. Our Vision is "Through our Business Excellence, we will be a leader in the Water Industry".

Mission:

Leading the way towards a bold future that can sustain growth and economic development while retaining a lifestyle which is uniquely Shoalhaven, our Mission is to "Provide efficient, effective water and wastewater services to the Shoalhaven".

Values:

Our strategic decisions and day to day activities in achieving our Vision and Mission will be guided by the following organisational values;

Our Customer

Striving to understand and exceed customer expectation and satisfaction with an emphasis on quality service, consultation, and continuous improvement.

Our Business

Provision of efficient and effective water and wastewater services, to an agreed "Levels of Customer Service" in an equitable and commercial manner.

Our Environment

Operating Shoalhaven Water in an environmentally responsible and sustainable manner for the betterment of present and future generations.

Our Community

Ensure quality of life and health to our community.

Our Team

Providing the Shoalhaven with efficient, dedicated, and enthusiastic staff by working through trust, learning and communication.

The Strategic Plan sets goals and objectives to be achieved in the planning period. The goals set out where the organisation wants to be. The objectives are the steps needed to get there. Goals and objectives relating to the delivery of services from infrastructure are shown in Table 3-7

Table 2-7 Goals and Objectives for Infrastructure Services

Goals	Objectives
Meeting service delivery needs efficiently and effectively.	Levels of Service (LoS) will be aligned with strategic and legal/regulatory requirements and customers/stakeholders will have an opportunity to contribute towards the development of the LoS,
Integration of asset management with long-term financial planning.	The water and wastewater assets will be operated and maintained to ensure that the Levels of Service are delivered at the most efficient long-term cost,
Informed decision-making based on reliable data	Sustainable Water Supply and Sewerage Services Providing Responsible Community Returns
Delivering optimal asset lifecycles	Business Plan in accordance with the Best Practice Management of Water Supply and Sewerage Guidelines
Risk-based approach to decision-making.	Deliver to council an appropriate annual community dividend from the Shoalhaven Water operations

Shoalhaven Water Asset Management Policy defines the Shoalhaven Water vision and service delivery objectives for asset management in accordance with legislative requirements, community needs and affordability.

2.14 Asset Management Policy

Shoalhaven City Council's Policy defines vision and service delivery objectives for asset management in accordance with the Strategic Plan and applicable legislation.

The asset management strategy is developed to support the asset management policy and is to enable Shoalhaven Water to show:

- how its asset portfolio will meet the affordable service delivery needs of the community into the future,
- enable Shoalhaven Council's Asset Management Policy to be achieved, and
- ensure the integration of Shoalhaven Water asset management with its long-term strategic plans.

2.15 Asset Management Vision

To ensure the long-term financial sustainability of Shoalhaven Water, it is essential to strike a delicate balance between meeting the community's expectations for services and their ability to pay for the infrastructure assets used to provide the services. Maintenance of service levels for infrastructure services requires appropriate investment over the whole of the asset life cycle. To assist in achieving this balance, Shoalhaven Water aspires to:

Develop and maintain asset management governance, skills, process, systems, and data in order to provide the level of service the community need at present and in the futures, in the most cost-effective and fit for purpose manner.

In line with the vision, the objectives of the asset management strategy are to:

- ensure that the Shoalhaven Water infrastructure services are provided in an economically optimal way, with the appropriate level of service to residents, visitors and the environment determined by reference to Shoalhaven Water financial sustainability,
- safeguard Shoalhaven Water assets including physical assets and employees by implementing appropriate asset management strategies and appropriate financial resources for those assets,
- adopt the long-term financial plan as the basis for all service and budget funding decisions,
- meet legislative requirements for all Shoalhaven Water operations,
- ensure resources and operational capabilities are identified and responsibility for asset management is allocated,
- provide high level oversight of financial and asset management responsibilities through Audit Committee/CEO reporting to Shoalhaven Water on development and implementation of Asset Management Strategy, Asset Management Plan and Long-Term Financial Plan.

Strategies to achieve this position are outlined in below.

3 How will we get there?

The Asset Management Strategy proposes strategies to enable the objectives of the Strategic Plan, Asset Management Policy, and Asset Management Vision to be achieved. Table 1 provides a list of strategies, outcomes and responsibilities which will assist Shoalhaven Water to achieve our asset management goals.

3.1 Asset Management Objectives

Shoalhaven Water's overall objectives of asset management system is to deliver water supply, wastewater, and communications services to our stakeholders in the most cost effective and efficient manner over the whole life cycle of those assets.

3.2 Asset Management Plans

Shoalhaven Water has developed Asset Management Plans (AMPs) for Water Supply, Wastewater Services and Communications Facilities to cover the major assets under its control. The plans have been developed to provide a sustainable approach to the management of those assets (and the services provided by those assets) for the Shoalhaven LGA. The AMPs are prepared under the umbrella of Council's Community Strategic Plan and its vision, mission, objectives, and strategies. The AMPs are a support document to Council's Delivery Program and Operations Plan and complements the overall Shoalhaven Water Strategic Business Plan to ensure that the facilities are provided within economic, environmental, and social sustainable criteria. This Strategy was developed to support those plans and provide a framework to support the development and management of those assets into the future.

The water and wastewater asset management plans have been developed over the past 10 years with the current plans redrafted in 2014 to align with the IIMM. These plans were publicly advertised before being endorsed by Council in 2015. The Communications Facilities plans were also complete in 2018 and are reviewed regularly.

Once finalised and endorsed by Council the plans considered live documents that are updated annually with the latest financial information and any other changes identified by the Asset Management Steering Committee during that year.

4 Asset Management Improvement Plan

Over the past decade, Shoalhaven Water has made significant strides in enhancing its asset management, progressing from a core to an intermediate level. Recognising the importance of continual improvement and maintenance, the organisation is committed to sustaining and advancing its current level of asset management.

To achieve this, Shoalhaven Water has devised a structured approach to conduct a thorough review of its Asset Management (AM) maturity every five years, building upon the insights gained to refine and enhance the system. Following the 2021 maturity assessment, a comprehensive improvement plan was formulated, laying the foundation for the evolution of asset management practices over the next five years.

Key Performance Indicators (KPIs) have been formulated and serve as benchmarks for senior management, providing measurable objectives to gauge progress. The Improvement Plan has been integrated into the regular agenda of the Asset Management Steering Committee (AMSC), ensuring continuous scrutiny and monitoring. This strategic placement underscores the commitment to refining Shoalhaven Water's asset management competencies.

The AMSC will identify responsible members who will champion and execute these initiatives as projects within agreed timelines. This project-oriented approach ensures a focused and accountable effort towards achieving the outlined objectives. The plan undergoes an annual review to ensure its relevance, currency, and alignment with Shoalhaven Water's overarching asset management goals and objectives.

The responsibility for overseeing the maturity assessment process and its ongoing management falls under the purview of the Water Asset Planning & Development Manager, operating under the guidance of the AMSC. This structured governance ensures that the process is executed diligently, aligning with the organisation's strategic vision for continual improvement in asset management practices. Shoalhaven Water's commitment to regular assessment, structured planning, and dynamic responsiveness positions it to adapt effectively to evolving challenges and industry best practices in the realm of asset management.

	Policy Statements	Findings	Recommendations
Asset Management Strategy / Asset Management Plan			
	The Asset Management Plans (AMPs) will document the plan to manage Shoalhaven Water's assets to support the delivery of our strategic direction and our contribution to the Governments priorities and outcomes,	Asset management plans exist for the water, wastewater and telecommunications systems, and contain comprehensive information about the infrastructure and forecast expenditure needs. It is unclear how the AMPs are used in the management of the infrastructure systems. However, we note the improvements made to the sections on management strategies as compared to earlier versions of the AMPs, with information on current practice and what needs to be done to improve performance. These sections are core to the management of the assets and could be improved with timelines and dollars; i.e. what will be done by when, and how much is that going to cost (both capital and recurrent). Timelines and dollars should form the basis for budgeted investment in the infrastructure.	The asset management plans may be streamlined by removing the asset management theory-style text. It is recommended that text be placed into a separate policy document for guidance on developing and updating asset management plans at Shoalhaven Water. Noting that asset management plans are the core output from an asset management program, it is recommended the plans be updated annually as input to the budgeting process. The asset management plans may be improved by augmenting their performance-based aspects, by stating long term goals (numerically), with short term/next year targets and comment on how performance will be improved over an appropriate planning horizon.

	The Asset Management Strategy (AM Strategy) will guide the development and review of AMPs and specify appropriate LoS with community consultation,	The Asset Management Strategy is a comprehensive document. Aspects of the information may be repeated in the AMPs (e.g. life cycle costs) to augment the financial content of the AMPs. Figure 2-1 illustrates the relationship between organisational objectives and the asset management program. We find that it is not clear how each aspect of the asset management planning process connects and aligns with each other.	The asset management strategy may be streamlined by removing the asset management theory-style text. It is recommended the order of the content in the Asset Management Strategy is changed to reflect the flow from organisational objectives to policy statements to strategies in the asset management strategy that align with asset management policy objectives. It is recommended that key customer-centric levels of service be included in the asset management strategy. The asset management planning strategies referred to in the previous paragraph should be cross-referenced to the Customer Levels of Service to illustrate how they are expected to sustain or improve customer service performance. Similarly, the introduction of key Technical Levels of Service that are aligned to the Customer Levels of Service and corelated to the asset management planning strategies will assist in demonstrating how investment in the asset management program is contributing to Shoalhaven Water's overall objectives.
	The AM Strategy and AMPs will be developed and updated to meet the requirements of the IPR Guidelines and Best Practice Management,	The reference to regulatory requirements or guidelines and other forms of best practice frameworks and concepts is an important part of developing a mature asset management program. We find that there are (more than) sufficient, defined activities to progress towards achieving excellence with the Shoalhaven Water asset management program.	It is recommended to continue development of the asset management program to align with regulatory requirements and guidelines. It is recommended that reference to best practice frameworks be constrained to the GFMAM Landscape, which is a collaborative, international effort to define a shared set of agreed, core asset management practices. This very practical framework has been briefly reviewed in light of the Shoalhaven Water asset management program.

	AMPs will be developed for all infrastructure assets,	We find there are relatively current asset management plans for the three major infrastructure systems: water, wastewater and communications facilities. It is noted in the Asset Management Strategy that the asset management plans are to be updated annually. Incorporating updates of the asset management plans as a required activity in the budget development process is best practice with keeping the plans relevant, used and focused.	As referenced above, it is recommended the asset management plans are updated on an annual basis.
	The AM Strategy and AMPs will be for a minimum time period of 20 years,	The Asset Management Strategy and asset management plans report to the 20 year planning horizon. However, we find that confidence in the quality, completeness and currency of the data is inconsistent and tending towards questioning whether the data may be relied upon. Data around levels and costs of service is considered to be an area for improvement in the strategy and plans.	It is recommended the asset management plans include a separate, simpler and formal tabulation of the extent (i.e. percentage) to which key sets of data (e.g. costs, condition, age, asset register, values) may be relied upon, what is being done to sustain and improve the data (with forecast expenditure dollars and timelines).

	AMPs will include 20 year financial projections of capital expenditure (separated into renewals and replacements, asset enhancements and growth) and operational expenditure (separated into asset maintenance and operations),	We find that the detail associated with recurrent expenditure - operations costs, maintenance costs, administration/overhead costs - is not yet maturely developed in the asset management plans. There appears to be an underlying assumption that recurrent expenditure will increase, progressively, which may reflect CPI or the growth in an infrastructure system. Discussions in the interviews indicated the challenges in capturing cost data, particularly with the introduction of new software in which the data will ultimately be captured, stored and managed.	It is recommended that the next three years include a concerted effort to begin building a reliable data set for recurrent expenditure, with trend analysis and life cycle cost analysis techniques used to identify where costs can be constrained or reduced. It is recommended that unit costs of service are developed for all services, structured so as to enable comparison across zones within the infrastructure systems and to enable comparison across asset classes (e.g. pump stations - unit cost per unit of water).
	Shoalhaven Water will establish and maintain an Asset Management Steering Group to guide the development, review and improvement of AM Strategy and AMPs.	We find that the Asset Management Steering Group is well established and actively involved in governing and directing the asset management program. It is acknowledged that the AMSG was actively engaged in this study.	It is recommended the AMSG continue functioning as it has been with the added dimension of adjusting to directing and tracking performance in delivering against policy objectives, strategies and asset management planning activities. It is recommended the AMSG begin each meeting with a review of the metrics for Customer Levels of Service,

			prime Technical Levels of Service, and key Costs of Service.

Levels of Service			
	Levels of Service (LoS) will be aligned with strategic and legal/regulatory requirements and customers/stakeholders will have an opportunity to contribute towards the development of the LoS,	Levels of Service appears to be an area with opportunity for improvement as asset management maturity continues to develop within Shoalhaven Water, certainly with respect to embedding customer service performance within asset management planning processes and the asset management plans.	It is recommended that metrics for customer-centric levels of service be developed; and, key technical levels of service developed to enable correlating investment in the assets and expenditure on the assets with sustaining and improving customer levels of service performance.
	The LoS statements will be supported by performance measures and targets that are specific, measurable and appropriate,	A range of levels of service-related performance measures and targets were observed. Generally, these were considered to be useful and to be retained; with improvements focused on increasingly numeric or statistical measures and timelines for performance targets. Alignment between measuring the customers' levels of service and spending on the assets is not clearly developed and/or reported on.	It is recommended that metrics for customer-centric levels of service be developed; and, key technical levels of service developed to enable correlating investment in the assets and expenditure on the assets with sustaining and improving customer levels of service performance.

	The AM Strategy will guide the development and review of the LoS and performance measures and targets,	In its current form the Asset Management Strategy relies heavily on reference to the Customer Service Plan, which does contain levels of service type metrics and data. However, the purpose of the Strategy is to define how organisational objectives (i.e. Customer Levels of Service) are to be realised via the asset management program, through policy objectives, strategies and asset management planning activities. This alignment is not apparent.	It is recommended the content in the Asset Management Strategy is changed to enable alignment of organisational objectives with policy statements and strategies.
	The AMP(s) will set out how the assets will be managed to deliver the LoS.	Asset management plans typically explain how, technically, customer levels of service goals and targets will be sustained and achieved over the 20 year planning horizon. This is usually by aligning technical levels of service with customer levels of service and developing asset management program activities designed to deliver technical levels of service targets and, therefore, customer levels of service targets. We find that in their current form the asset management plans reflect planning processes that are not yet mature with respect to performance alignment and, therefore, are not yet structured to clearly demonstrate how the activities described in them are resulting in the delivery of customer levels of service.	It is recommended the content in the asset management plans is changed to enable alignment of customer levels of service with asset management planning processes and activities.

Risk Assessment and Management			
	All sections within Shoalhaven Water will be responsible for undertaking risk assessments and developing risk management plans for their areas of responsibility,	We note from the briefings received at the beginning of this study that a formal risk framework is a high priority for Shoalhaven Water's asset management program. Reference was made to the WSAA Asset Risk Management Framework (PP3-027). It was found that risk is formally used with respect to business risks such as those associated with natural hazards (e.g. bushfires and storms). A criticality assessment has also been completed which correlates to risk management as critical assets (group or sub-group) inform the determination of the consequences associated with asset failure. The discussions during the interviews made reference to informal or ad hoc applications of risk management techniques, with a general willingness to apply practical risk tools when they become available. Risk, conceptually, was evident in asset management planning process. For example, age and condition criteria reflected the increasing likelihood of asset failure as assets aged and their condition deteriorated.	It is recommended Shoalhaven Water adopt PP3-027 as its risk management framework. Basic risk tools such as assessment and evaluation tables, and a risk register spreadsheet template, will need to be developed to enable the application of the framework. Current risk management activity such as business risk assessments will need to be upgraded to align with the new tools. Criticality framework criteria will need to be used to inform augmentation of the consequences table to enable correlation between risk and criticality assessments.

	Risk management plans will be reviewed annually,	Risk management plans is, conceptually, a broad subject. A risk management plan could be developed for a critical pump station, or one could be developed for the entire water system, with a correlation between the two. On the basis that a risk management plan, as defined in the policy document, represents a summary document of all significant business risks in the asset management program, we find that such a plan does not yet exist.	It is recommended that, following the adoption of PP3-027, Shoalhaven Water extract detail on its significant risks from current documentation and develop a first edition of a Shoalhaven Water Asset Risk Management Plan, detailing the current plan for treating those business risks and explaining the expansion of the risk management program over the next planning horizon (e.g. the next three years).
	Training will be provided to an appropriate level to ensure that risk management is practiced throughout Shoalhaven Water's activities,	It is noted that, in the absence of a formal risk management business function, training in risk management is yet to be formally commenced across Shoalhaven Water.	It is recommended that basic risk management training accompany the adoption of PP3-027. This should be in the form of an introduction to risk management as defined in ISO 31000 and its application as defined in the PP3-027 framework.
	The AM Strategy will identify critical assets and outline risk management strategies for these assets,	Critical assets were determined and tabulated in a report, dated 2013. While critical assets don't necessarily change all that frequently, the nature of critical assets is such that updated versions of the critical assets report ought to be routinely kept up to date and readily available. The report also makes reference to "critical customers". It is noted that the policy document does not refer to this aspect of criticality. Critical assets are referred to in the Asset Management Strategy and the asset management plans.	It is recommended the Asset Management Policy is edited to include "critical customers" along with "critical assets". It is recommended the significant risks associated with critical assets be determined and the results tabulated in the Shoalhaven Water Asset Risk Management Plan.

	Shoalhaven Water's Emergency Response Plans will provide clear guidelines to assist Shoalhaven Water staff involved in responding to and recovering effectively from emergency situations,	A review of the Emergency Response Plan is outside the scope of this study. We note that the document appears to be comprehensive but, as an August 2019 version, is beyond its annual review date. The Plan contains information that may be used to inform business processes in the asset management program. For example: Level of Alert factors, Potential Effects of asset failures, and flowcharts that form the basis of standard operating procedures for, say, wastewater overflows.	It is recommended checking the status of the review of the Emergency Response Plan against the requirements stated in the Plan.
	Shoalhaven Council's Business Continuity Plan will ensure critical business functions can be maintained and/or restored in a timely fashion in the event of a material disruption to the organisation arising from internal or external events,	In the absence of available documentation no findings or recommendations are provided for this Policy Statement at this point in the study.	No recommendation has been made.
	Shoalhaven Water's Drought Management Plan (DMP) is to ensure the water utility business of Shoalhaven Water, has an appropriate mechanism in place to allow it to carry out its responsibility to soundly manage water use during droughts and to minimise the risk of system failure in times of drought,	A review of the Drought Management Plan is outside the scope of this study. We note that the document appears to be comprehensive and published in 2013 (not confirmed). The Plan contains information that may be used to inform business processes in the asset management program. For example: Section 2.11 Water Supply Customers references average yearly usage by major customer type and reference to minimum water volume requirements. The Plan is, essentially,	It is recommended that drought management strategies - as defined in the Drought Management Plan - are used to inform the development of Customer Levels of Service.

		a basis for reducing Customer Levels of Service during low water availability periods and, as such, can be used to inform the development of Customer Levels of Service for abnormal operating periods.	
	The Operational Environment Management Plan (OEMP) will set out how the treatment plants are to be operated and will be updated as required.	In the absence of available documentation no findings or recommendations are provided for this Policy Statement at this point in the study.	No recommendation has been made.
	Develop climate change resilience as in integrated part of the asset life cycle.	It is noted that climate change resilience is a current area of activity with Shoalhaven Water, starting before the 2019/2020 bushfire season with coastal assets with respect to sea level rise, but with increasing importance and attention following that season.	It is recommended the risks of asset failure associated with climate change be included in future risk assessments, determining the changes - if any - to the likelihood of failure as a result of changes in the climate. In evaluating those risks, consideration is to be given to the sensitivity of the inherent risks and existing/proposed controls to forecast changes in the climate over an acceptable - e.g. 20 year - planning horizon.

	Capital works will be prioritised based on an assessment of project benefits and available budgets for both asset acquisitions and renewals,	The asset management plans describe a capital works prioritisation process and discussions in the interviews indicated that this was generally the process followed. Asset management program documentation also references prioritisation criteria. It was noted, however, that a life cycle process view was not available. This correlates with interview discussions around project initiation and the (limited) data available at that time that supports the project need.	It is recommended an asset life cycle workflow be developed that illustrates the capital planning and delivery process, including the transition of the assets into operation. It is further recommended that the workflow include an information stream, or swim lane, for information flows across the life cycle with an emphasis on enabling effective asset handover.
	Asset acquisition decisions are to be based on the evaluation of alternatives that take into account full life cycle costs, environmental, social and economic benefits and risks,	It is not clear from the available documentation the extent to which full life cycle costs are considered in asset acquisition decisions. It is considered that this is likely constrained to assumptions and typical percentages rather than being based on historical asset cost data. Triple bottom line benefits and risks are alluded to but are not clearly evident in the absence of an overarching workflow process that defines the analysis and reporting requirements for each step in the asset life cycle.	It is recommended triple bottom line concepts be introduced into the adoption of PP3-027 and the capital planning and delivery workflow.
	Minimum utilisation measures shall be determined for all assets to determine surplus assets,	Utilisation is conceptually referred to in the Asset Management Strategy and the asset management plans. It is not evident that utilisation measures have been developed.	It is recommended that work on developing utilisation measures be undertaken on an opportunistic basis until other recommendations have progressed. In the process, an interim methodology for determining and evaluating utilisation will need to be developed.

	All construction, whether it is asset replacement, renewal, upgrade or new, must consider ecological sustainable development,	In the absence of available documentation no findings or recommendations are provided for this Policy Statement at this point in the study.	No recommendation has been made.
	Water and sewerage infrastructure will be provided to service planned development areas in accordance with the Development Servicing Plans (DSP) that will be maintained in accordance with the Best Practice guidelines.	A review of the Development Service Plans is outside the scope of the study. However, they have been made available and will be reviewed with a view to provide comment here.	No recommendation has been made.
	A 20-year capital works plan will be developed to meet IPR and Best Practice guidelines.	The development of 20-year capital works plans appears to be relatively robust, albeit subject to the potential for improvement as alluded to in this study's findings and recommendations.	It is recommended that improvement in asset management planning processes focus on recommendations provided elsewhere in this table, noting that those improvements will result in improvements to the confidence vested in each subsequent version of the 20-year capital works plan.

Asset Operations and Maintenance			
	The water and wastewater assets will be operated and maintained to ensure that the Levels of Service are delivered at the most efficient long term cost,	As mentioned elsewhere we find the correlation between customer levels of service and asset management activities is limited. We note from interviews with operations staff and the staff maintaining the assets that data on their costs is fragmented, not readily captured in new information solutions, and generally low in confidence with respect to accuracy or relevance. As such, we find that demonstrating cost efficiency with respect to levels of service is unlikely to be determined to appropriate levels of detail.	It is recommended that the next three years include a concerted effort to begin building a reliable data set for recurrent expenditure.
	Update the maintenance plans using reliability centred maintenance analysis techniques and cost benefits to determine the most appropriate economic practices to suit the assets and Shoalhaven Water,	We note from interviews with the staff maintaining the assets that data on their costs is fragmented, not readily captured in new information solutions, and generally low in confidence with respect to accuracy or relevance. We further note that staff indicate that the majority of their time is spent on reactive maintenance, with a corresponding lack of available resources to shift the effort to a better balance between reactive and planned maintenance activities. The latter appears to be constrained, in the short term, by the ongoing implementation and configuration of the new information solution.	It is recommended that Shoalhaven Water review the current plan for implementation and configuration of the new information solution with respect to the functionality that will enable improvements to core data aspects of its asset management program. In light of that review, adjustments to the timing of asset management planning improvements will need to be made to set realistic and achievable improvement goals.

	Undertake benchmarking of asset maintenance and lifecycle management techniques to ensure that Shoalhaven Water is adopting best appropriate practices in all areas,	It is noted that benchmarking comes in many forms. Benchmarking that Shoalhaven Water has previously participated in provided an opportunity to identify new practices - now incorporated into the Asset Management Policy document as Policy Statements - and to compare industry 'standard' metrics. The latter provide a degree of reassurance that asset management program outputs are generally in line with industry expectations.	In addition to continuing with mandatory reporting and benchmarking activities, it is recommended Shoalhaven Water continue with repeating previous benchmarking activities that compare asset management program outputs across the sector. However, it is further recommended that where the latter require significant effort, the timing of the next benchmarking exercise ought to be no more than once every three to five years. In the interim, it is recommended Shoalhaven Water focus its efforts on internal benchmarking that informs comparison of the performance of assets within an asset class, including aspects such as operations costs, actual useful lives (AUL), maintenance costs and reliability metrics (e.g. MTBF, MTTR), and asset acquisition unit costs. It is further recommended that this approach be piloted on an asset class such as wastewater pump stations.
	Shoalhaven Water recognises the need to maintain its asset base and will target a long term asset sustainability index (actual replacement/renewal budget versus required funding as per AMPs) averaging 90-95% for each of the asset types,	While reference to a sustainability index, as defined in the Policy Statement, was not observed in the documentation made available for this study, we note in general that asset management planning activities are directed towards realising the long term asset sustainability index target (i.e. goal).	It is recommended that the asset sustainability index is developed as part of introducing a range of technical levels of service, as discussed elsewhere in this table.

	20-year operation and maintenance budgets will be developed and included in the AMP and shall include an allowance for additional costs arising from addition of new assets through development, acquisition, dedication or leasing and/or licensing as well as an allowance to cover cost increases in line with indices relevant to each asset class,	It is noted that 20-year budgets for operations and maintenance activities are included in the asset management plans. It is not known how those costs are arrived at, but appear to be predominantly indexed from one year to the next.	It is recommended the policy statement be edited to reflect a change in emphasis from indexed cost increases to forecast costs based on historical cost analysis. It is recommended that further breakdown of cost forecasts be undertaken to differentiate between cost increases associated with new assets and indexed cost increases for forecasting costs for existing assets.
	Adequate resources shall be provided to undertake regular agreed levels of inspections for risk, identifying programmed works, asset condition and renewal priorities,	In interviews with staff undertaking operations or maintenance activities it was determined that data on the volumes of work undertaken was not available and data from inspections was considered likely to be incomplete or unreliable. It was noted that improvements in this area are constrained until the implementation and configuration of the new information solution is complete.	It is recommended that establishing new processes for capturing inspection activity and volumes of work be incorporated in the implementation and configuration of the new information solution.
	Appropriately audited preventative maintenance programs will be undertaken on all infrastructure and other assets to ensure that the lowest life cycle cost is achieved, and asset values are maintained,	In interviews with staff undertaking maintenance activities it was noted that the majority of the maintenance is, at the moment, deemed to be reactive. Additional notes on this have been made previously. We find that the preventative maintenance program requires the injection of additional resources to support staff in shifting from mostly reactive to more appropriate levels of preventative maintenance, subject to the availability of suitable functionality in the new information solution.	It is recommended that developing and auditing the preventative maintenance program be incorporated in the implementation and configuration of the new information solution, and subject to short term additional resources being made available during the transition from mostly reactive to preventative.

	Monitor and improve the planned (scheduled) maintenance regime for all infrastructure and other assets to ensure that the assets meet their design life in the most cost-effective way.	Based on previously documented findings in this table we find that, currently, it will be difficult to clearly link maintenance to actual asset useful life outcomes.	It is recommended that developing and evaluating the preventative maintenance program be incorporated in the implementation and configuration of the new information solution.

Asset Accounting, Costing and Budgeting			
	• Assets will be valued at intervals of no greater than 5 years using modern engineering equivalent replacement asset (MEERA) costs,	Based on the available documentation is not known when the most recent, complete MEERA-based valuation took place. Based on the interviews we understand that there is an ongoing effort to restructure asset registers - partly in response to the implementation of the new information solution, partly to address past errors and inconsistencies - but we are not certain on the current status of MEERA-based valuations.	No recommendation has been made.
	Effective economic lives will be given to each asset with the written down value and depreciation value determined in accordance with accounting regulations,	We understand from the interviews that updated effective economic lives are being developed as a result of other improvements to the asset registers. Based on the documentation provided we understand that asset depreciation is stated to be in line with accounting regulations; noting that this is typically the case given the regularity of formal, mandated, routine financial audits.	No recommendation has been made.

	In no case will the depreciation be less than the average annual annuity of the renewal cashflow necessary to sustain the existing assets group in a condition capable of delivering the level of service required by Shoalhaven Water's customers,	It is not observed in the documentation made available for this study how the average annual annuity aligns with depreciation, renewal cashflow requirements, maintaining appropriate asset condition and, ultimately, sustaining customer levels of service. It is noted that investment forecasts are intended to realise the outcome implicit in the policy statement, and we note from the interviews that there is a structured approach to calculating the annuity figures.	It is recommended that the calculation of the average annual annuity amount be incorporated into other workflow improvements referred to elsewhere in this table, and continued to be a prime feature of the asset management plans.
	Shoalhaven Water will determine the cost of asset service delivery on a full cost recovery basis which includes appropriate distribution of costs and overheads to: – Administration including any finance charges, – Operation, – Maintenance, – Depreciation expressed as either straight line or average annual annuity of the renewal cash flow. Where appropriate a capital use charge will be included at an appropriate opportunity cost of capital applied to the written down value of the assets to provide Shoalhaven Water with a return on assets invested and enable users to better understand the true cost of service delivery.	Elsewhere in this table we have found that the cost data that would enable the realisation of this policy statement is considered to be incomplete or otherwise unavailable.	Previous recommendations have been made with respect to developing a better set of historical cost data, following which it is recommended that a methodology for full cost recovery be developed and subsequently applied.

	That all costs will be determined on an accurate accrual basis and that any cost subsidies or community service obligations will be clearly defined and transparent to all stakeholders and customers,	We have noted previously that the limited granularity and low confidence in cost data is likely to impact on decision making based on that data. We find that likely to be the case here as well. However, we note that cost subsidies and community service obligations are important financial aspects that are likely to be appropriately tracked in Shoalhaven Water accounts.	Previous recommendations have been made with respect to developing a better set of historical cost data, following which it is recommended that the policy and methodology for cost accrual is revisited to ensure it remains valid and appropriate.
	That joint use facilities will be costed as stated above and full costs transferred to the relevant operating business units based on usage of assets,	It is not clear to what extent the costs associated with joint use facilities are subject to an equivalent degree of scrutiny that would allow Shoalhaven Water to confidently report on those costs, use those costs in life cycle and other analyses, and project future costs for those services.	It is recommended that, as Shoalhaven Water develops better historical cost data, a similar methodology be applied to the scrutiny of costs associated with joint use facilities with an objective to find opportunities to reduce and appropriately charge those costs in the future.
	Shoalhaven Water will keep detailed asset registers on all assets owned or under the control of Shoalhaven Water.	We understand that the implementation of a new information solution has provided the opportunity to update Shoalhaven Water's asset registers, with follow on opportunities to make other asset management planning improvements. At this time is not possible to form an opinion on the extent to which asset registers have been maintained, noting the references elsewhere in this table to challenges in maintaining comprehensive, accurate historical data sets.	It is recommended that the implementation and configuration of the new information solution include for the development of business processes for primary, or core, asset management activities, such as keeping asset registers up to date as new assets come online, old assets are replaced, and components of assets are replaced.

		It is presumed that, as the new information solution is rolled out, new workflows will be developed such that newly updated asset registers will be kept up to date, routinely, in the future.	

Asset Reporting			
	Annual reports will meet the requirements of the Local Government Code of Accounting Practice and Financial Reporting, Best Practice Guidelines and the National Water Imitative.	An audit of asset management documentation against the specific requirements of legislative and regulatory instruments is outside the scope of this study.	No recommendation has been made.