



# Strategic Business Plan

2020/21



# Acknowledgment of country



We acknowledge the traditional owners and custodians of this country and their continuing connection to the land through culture and community. We pay our respects to Elders past, present and future.

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# Executive Summary

**This Strategic Business Plan provides an overview of the delivery of water and sewer services for the Shoalhaven Local Government Area (LGA) and the issues, constraints and strategic direction of the business. Its content is consistent with the requirements of the NSW Government's Best-Practice Management of Water Supply and Sewerage Framework and Guidelines.**

Shoalhaven City Council has responsibility for water and sewerage services for the Shoalhaven Local Government area. The statutory framework for the provision of these services by Council is provided by the Local Government Act 1993. Council meets these responsibilities and delivers water and sewerage services through Shoalhaven Water, a Category 1 Business of Council.

A corporate restructure adopted by Council on the 6th August 2020 created 5 Directorates, with Shoalhaven Water separately identified as "Council's Water Utility", led by an Executive Manager.

Under the new structure, Shoalhaven Water remains a separate reporting entity to the CEO.

Shoalhaven has experienced a particularly difficult period as it faced a number of years of serious drought up to February 2020 and then extensive impacts from the Currowan/Tianjara fires from December 2019 to mid-January 2020, flooding in early February 2020 and COVID-19 from March 2020. Severe storms and flooding were again experienced in July, August and November 2020. The impacts from these events (particularly the fires and COVID) will be felt by the local community for some time, particularly the local businesses and trades. Maintaining Shoalhaven Water's business continuity has been very challenging through these events and the total financial impacts to the organisation may not be known for some time yet.

The result of these unforeseen events has required a shift in focus from much of the original planned works for particularly the 2019/20 and 2020/21 financial years as the region centres its attention on recovery and resilience.

In determining the future requirements of the Shoalhaven Water business, compliance against the NSW Office of Water's Best Practice Guidelines, other strategic and regulatory requirements have been assessed. Shoalhaven Water achieved compliance with the NSW Office of Water's Best Practice Guidelines many years ago. This compliance has been audited and reported to Council each year, together with quantitative performance and benchmarking results.

Shoalhaven City Council through Shoalhaven Water owns and maintains significant water and sewerage schemes. This infrastructure treats and delivers water throughout the city to most urban towns and villages and collects then treats wastewater (sewage) from those homes and businesses.

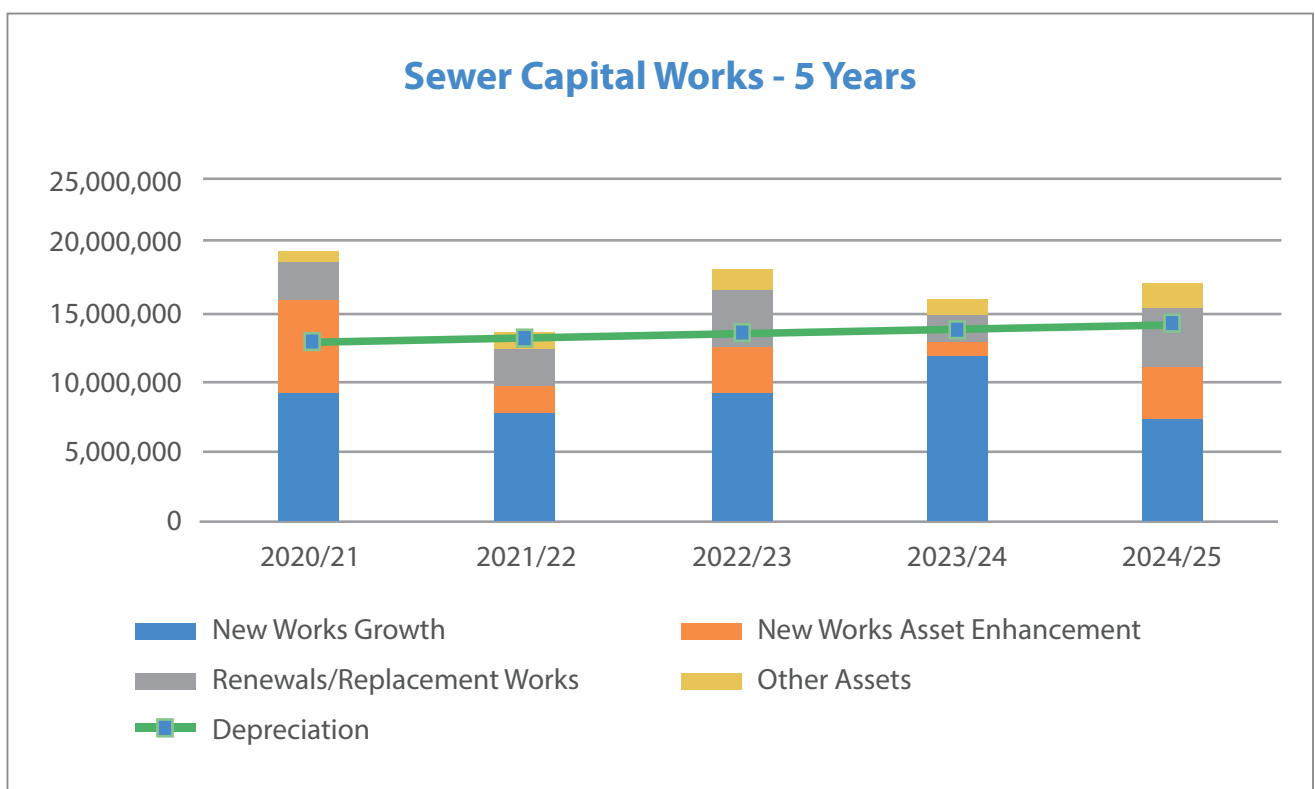
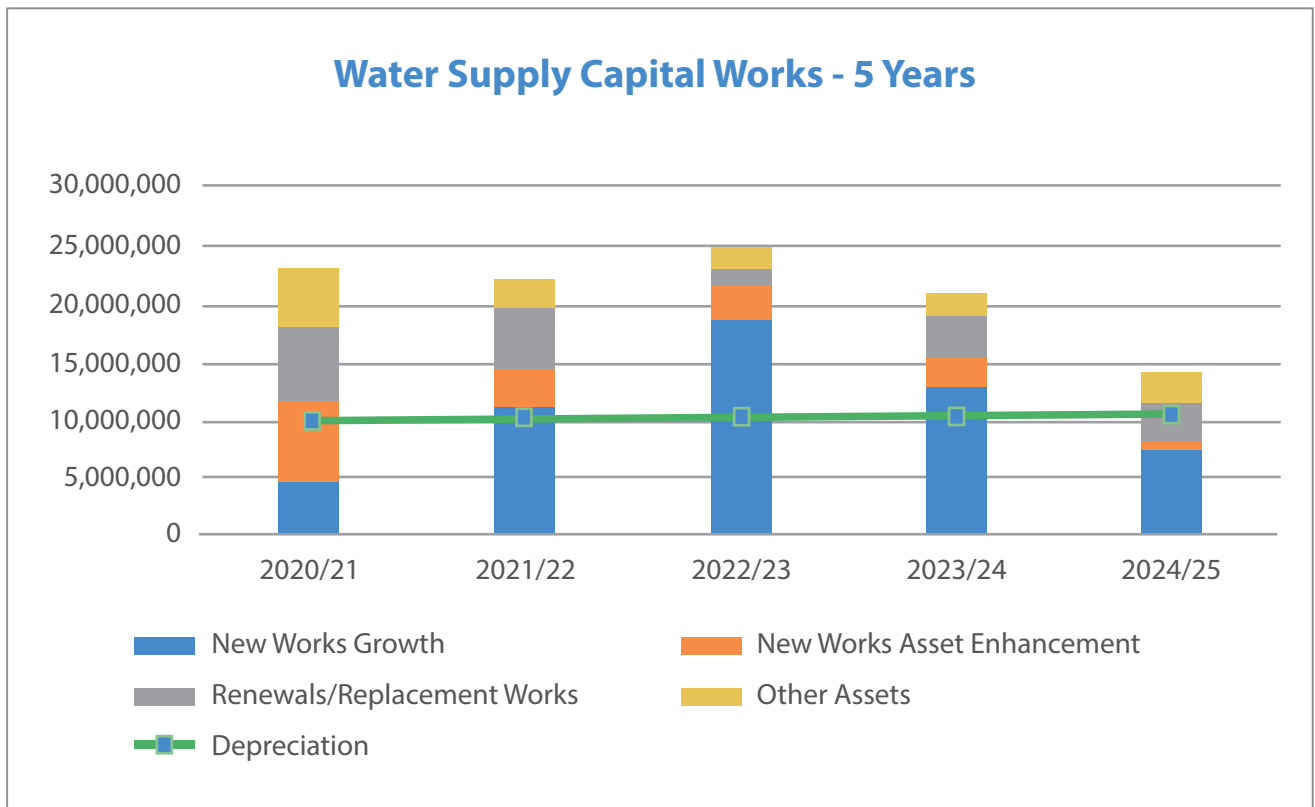
As the water utility provider for the Shoalhaven community, Shoalhaven Water seeks to deliver high quality water and wastewater services across the Shoalhaven, a substantial proportion of which are located within environmentally sensitive areas. Our customers include a growing population of more than 96,000 people, 52,000 residential and commercial properties and 2.7 million visitors each year.



The functions of planning, delivery and ongoing operations and management of the water and sewer services for the Shoalhaven is carried out by a combination of day-labour, contract, and consultancy services. Service reviews have been undertaken on various aspects of the business and this will continue with the aim to provide innovative solutions to changing regulations, customer expectations and technology. Increased in-house resources continue to be included in the strategic direction of the Shoalhaven Water business, to improve specialist skills required for operational and planning functions.

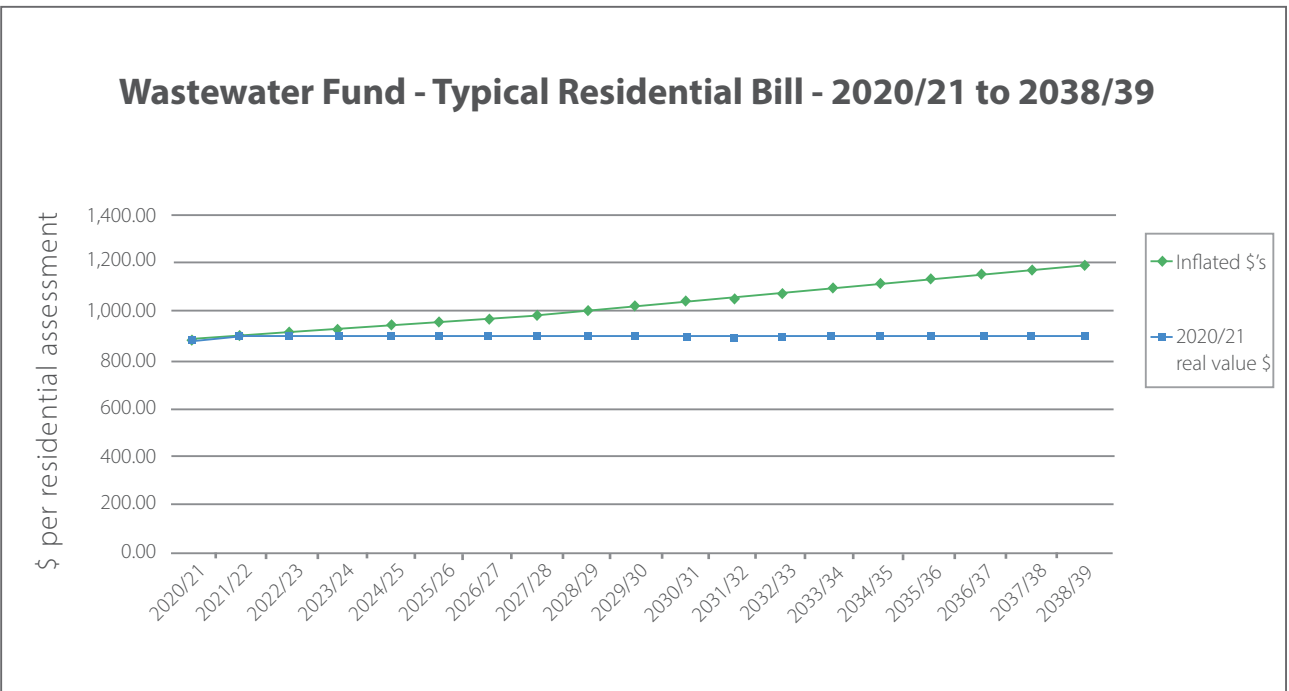
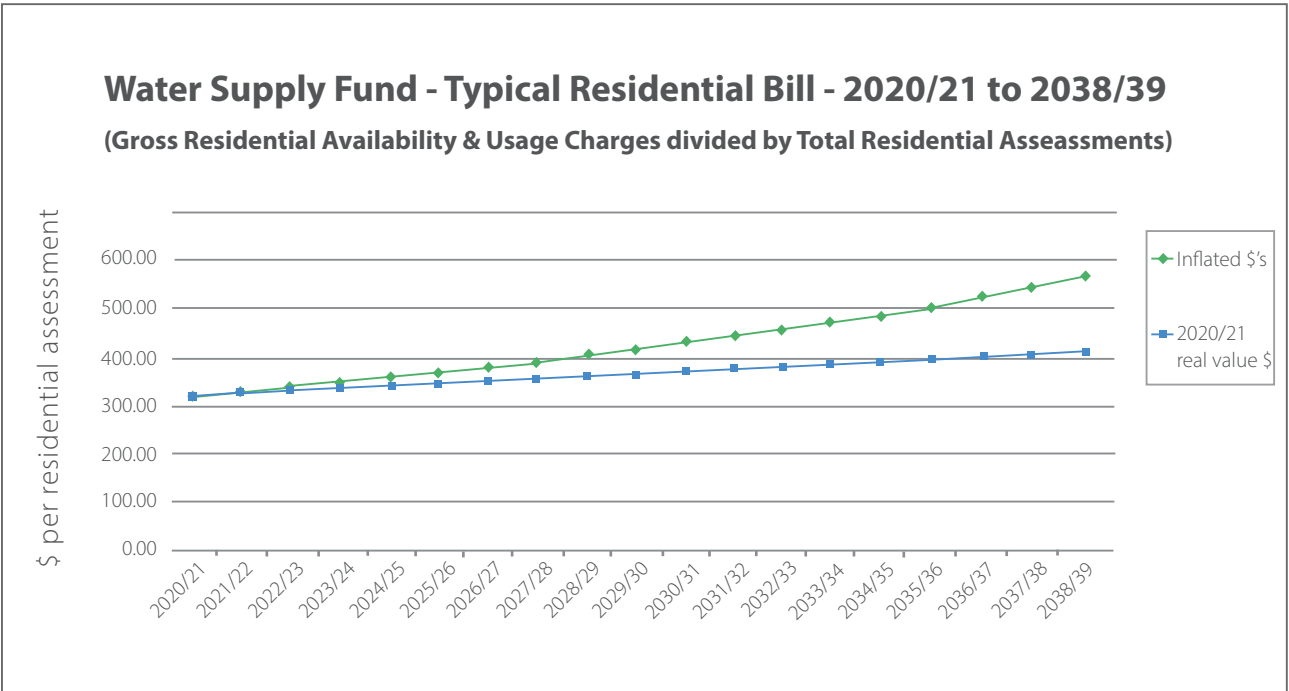
Due to the specialist and specific nature of the assets under its control, Shoalhaven Water's asset system is managed separately from general fund assets, while still working within the corporate framework. Through a focussed Asset Management Improvement Program, Shoalhaven Water has moved its asset management maturity from Core to Intermediate (based on the International Infrastructure Management Manual AMP Maturity Index).

The water and sewer funds include capital programs each year for the renewal of aging assets as well as providing for the growth of the LGA. The separate water and sewer funds projected capital works budgets for the next 5 years are given in the graphs below.



Operating expenditure is based on the provision of levels of service to meet community expectations, in accordance with accepted and best industry practice at the lowest sustainable costs. Operating and maintenance requirements are influenced by a number of internal and external factors.

Based on the assumptions discussed above, the 20-year projection of Typical Residential Bills are given in the graphs below.





# Operating Environment Review

## Institutional Arrangements for Service Provision

Shoalhaven City Council has responsibility for water and sewerage services for the Shoalhaven Local Government area. The statutory framework for the provision of these services by Council is provided by the Local Government Act 1993. Council meets these responsibilities and delivers water and sewerage services through Shoalhaven Water, a Category 1 Business of Council.

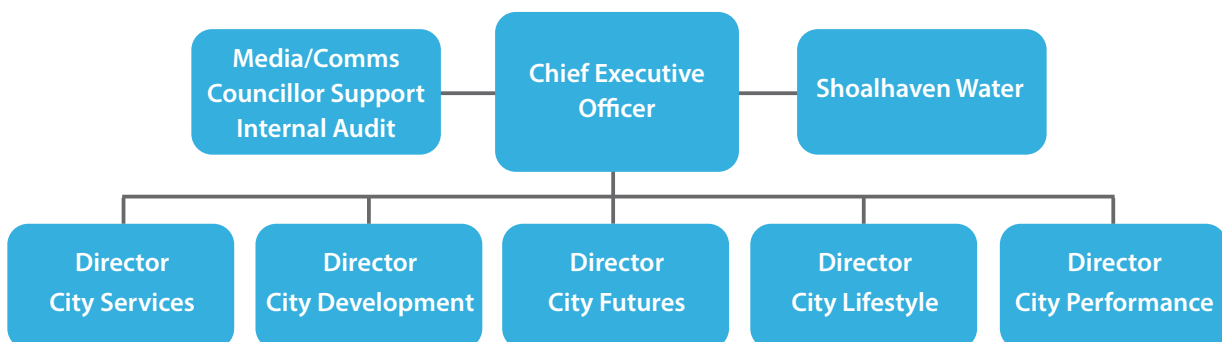
Shoalhaven Water operates in a governance framework that requires both formal reporting and compliance certification within the local government structure, with additional requirements as a Local Water Utility.

A corporate restructure adopted by Council on the 6th August 2020 created 5 Directorates, with Shoalhaven Water separately identified as “Council’s Water Utility”, led by an Executive Manager.

Under the new structure, Shoalhaven Water remains a separate reporting entity to the CEO, as shown in the diagram below.

All Shoalhaven water and sewer charges are accounted separately from the Council rates and General Fund. Shoalhaven Water is responsible for the management of the whole water and sewer business – including the development of pricing proposals to Council, infrastructure planning, delivery, operations, maintenance, billing, development assessment and customer inquiries. Other corporate functions such as payroll, treasury, Information Technology (IT) and insurance are carried out by Council via an overhead charge to the Shoalhaven Water business. This governance model allows professional and effective planning, reporting, and pricing functions to ensure the provision of cost effective, safe, and reliable water and sewerage services in a clear and accountable manner.

### Shoalhaven City Council - Organisational Structure



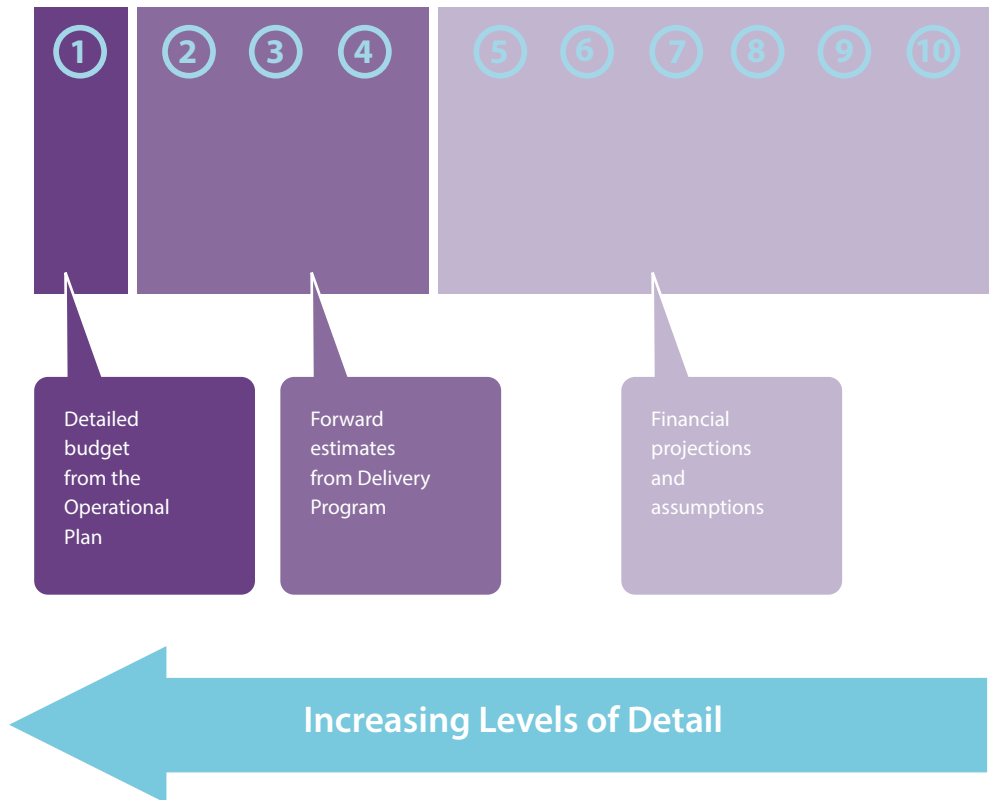
## Legislative Framework

### Local Government Integrated Planning and Reporting Framework

All Councils in NSW must work within the Integrated Planning and Reporting framework (shown below). This framework is intended to allow NSW councils to draw together all the various plans needed for effective management and to understand how they interact to enable holistic planning for the future.



The OLG Manual requires a Council develop a 10-year Long Term Financial Plan as follows:



In addition to the common requirements for all Councils in NSW, the Office of Division of Local Government's Planning and Reporting Manual highlights the following more stringent requirements which apply for water supply and sewerage:

"Councils that have responsibility for water supply and sewerage infrastructure need to comply with the requirements and timeframes of the NSW Government's Best-Practice Management of Water Supply and Sewerage Guidelines, 2007."

These additional requirements include a longer planning horizon than other Council infrastructure and a minimum 20-year financial horizon for this Strategic Business Plan, as well as more comprehensive asset management planning. The current organisational structure of Shoalhaven Council allows these differences to be recognised, while following the aspirations of the Community Strategic Plan.

## Other Regulatory Frameworks and Legislation

Although the NSW Local Government Act is the enabling legislation for a local water utility in regional NSW, legislative powers and responsibilities for a NSW local water utility are found in many other pieces of legislation. Key regulators for various aspects of the water and sewer services provided by NSW Councils include the NSW Department of Planning Industry and Environment (DPIE), NSW Health and the NSW Environmental Protection Agency (EPA).

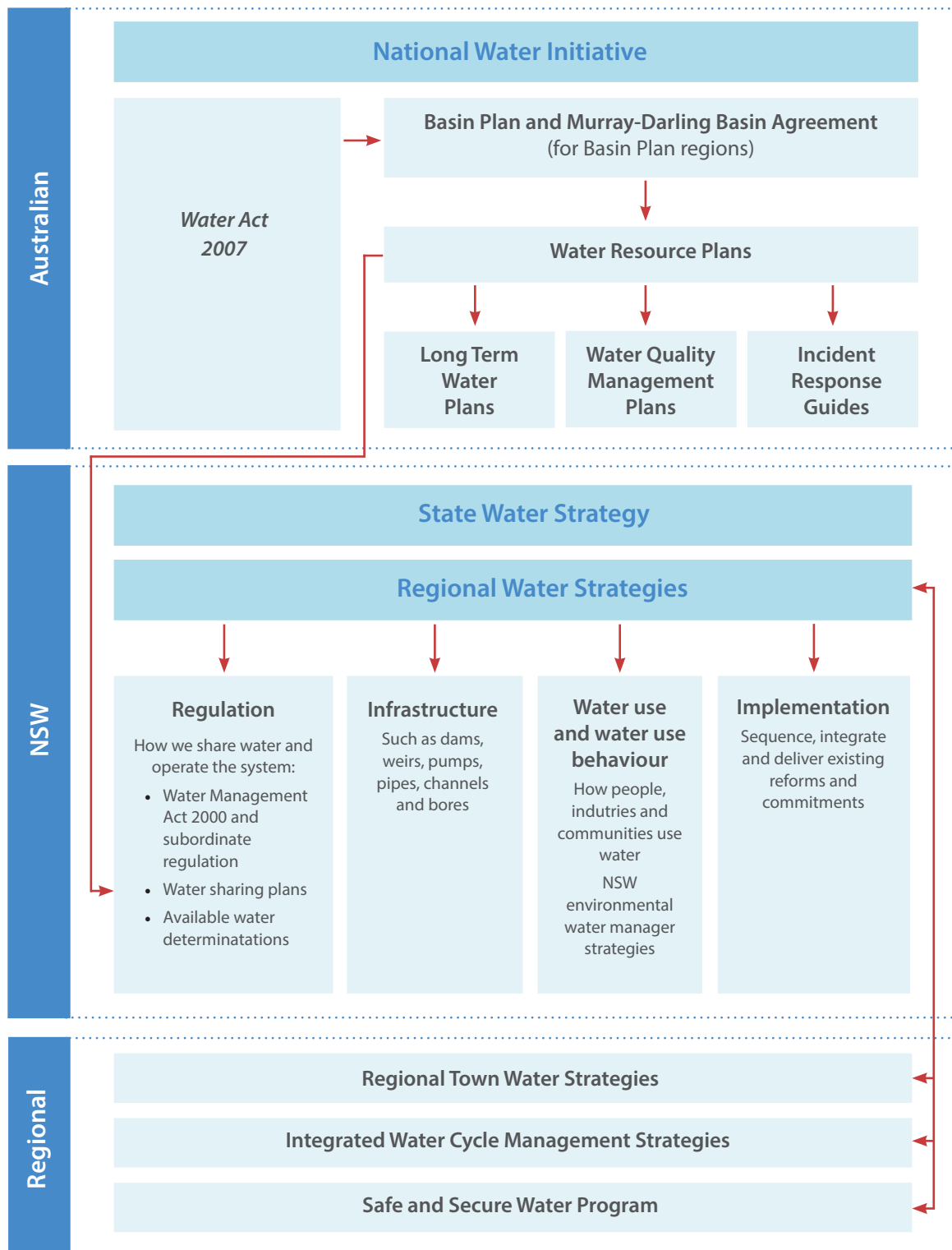
The DPIE regulates local water utilities in the provision of safe, secure, and sustainable water supply and sewerage services. DPIE's role includes:

- setting policy, planning, infrastructure, and regulatory priorities across regional NSW
- providing a management framework for local water utilities to ensure the effective delivery of essential water services
- managing and implementing significant water infrastructure programs (e.g., Safe and Secure).

The Public Health Act 2010 and Public Health Regulation 2012 require drinking water supplies to develop and adhere to a quality assurance program (Drinking Water Management System). Under Section 22 of the Public Health Act 2010, the Chief Health Officer has the power to issue advice, for the benefit of the public, concerning the safety of available drinking water and any risks to health involved in the consumption of that water.

The NSW EPA is the primary environmental regulator for New South Wales. Under the Protection of the Environment Operations Act 1997 a water utility needs to obtain and comply with Environmental Protection Licences to release effluent to the environment. Where water pollution causes or threatens material harm to the environment, there is a duty to report pollution incidents under Section 148 of the Act. All licence holders also need to prepare Pollution Incident Response Management Plans.

Although the management of water resources is a state responsibility under the Australian Constitution, the National Water Initiative is a shared commitment by governments to increase the efficiency of Australia's water use, leading to greater certainty for investment and productivity, for rural and urban communities and for the environment. The NWI built upon the 1994 COAG Water Reform Framework. The diagram below shows the linkages between various plans and legislation.



(Source: <https://www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies/water-sharing-plans>)

The following list shows the names of the key Acts & Regulations which effect the development and operation of the water supply and sewerage schemes.

1. Local Government Act (1993)
2. Local Government Regulation 2010
3. Local Government Amendment (Planning & Reporting) Act 2009
4. Environmental Planning and Assessment Act (1979)
5. Catchment Management Act (2003)
6. Soil Conservation Act (1938)
7. Dams Safety Act (2015)
8. Dam Safety Regulation 2019
9. Public Health Act (2010)
10. Water Administration Act (1986)
11. Independent Pricing and Regulatory Tribunal Act (1992)
12. Protection of the Environment Operations Act (1997)
13. Water Management Act (2000)
14. Water Industry Competition Act (2006)
15. Fluoridation of Public Water Supplies Act (1957)
16. Water Act 2007
17. Competition and Consumer Act 2010

Further details of the legislation and their main implications are given in Appendix A.

## Situation Analysis – Operating Challenges 2019-2020

Shoalhaven has experienced a particularly difficult period as it faced several years of serious drought up to February 2020 and then extensive impacts from the Currowan/Tianjara fires from December 2019 to mid-January 2020, flooding in early February 2020 and COVID-19 from March 2020. Severe storms and flooding were again experienced in July, August, and November 2020. The impacts from these events (particularly the fires and COVID) will be felt by the local community for some time, particularly the local businesses and trades. The tourism sector has particularly suffered over the two peak periods of Christmas/New Year and Easter long weekend.

Maintaining Shoalhaven Water's business continuity has been particularly challenging through these events and the total financial impacts to the organisation may not be known for some time yet.

The result of these unforeseen events has required a shift in focus from much of the works originally planned for the 2019/20 and 2020/21 financial years as the region centres its attention on recovery and resilience activities.

The Council also adopted several measures to support the community through the recovery from the bushfires and the pandemic. Water account holders who had a property that NSW Rural Fire Service (RFS) determined as damaged or destroyed had their 3rd Quarter Account water and sewer charges waived. A water usage rebate was also available to affected customers. At the Ordinary Meeting of Council held on 26 May 2020, Council resolved to provide relief to ratepayers of \$300 per property in the 2020-2021 financial year (funded by the General Fund and Water and Sewer Funds). The water fund contributed \$3.1M and the sewer fund \$2.6M.



## Situation Analysis – Statutory and Regulatory Obligations

### NSW Best Practice Guidelines

Shoalhaven Water achieved compliance with the NSW Office of Water's Best Practice Guidelines a number of years ago. This compliance has been audited and reported to Council each year. The annual audit is based on the latest Best Practice Guidelines from the relevant Minister (as of 2020 the latest guidelines are dated 2007). The table below summarises the current status of each of the Best Practice compliance elements.

	ELEMENT	STATUS as at December 2020
1	<b>Strategic Business Planning</b>	This document
2	<b>Pricing</b>	
	Full Cost Recovery without significant cross-subsidies	Comply
	Compliant residential charges with pay-for-use water pricing independent of land value	Comply
	Complying non-residential charges	Comply
	Development Servicing Plan, commercial developer charges	Comply - State Government released new guidelines in June 2006. New DSP prepared. Council adopted policy POL20/22 on 28 April 2020 - to be reviewed April 2021.
	At least 75% of residential water revenue from usage charges	Comply
	Complying trade waste fees and charges	Comply
	Complying trade waste policy and approval for all dischargers	Comply
3	<b>Water Conservation</b>	Comply - Customer Service Plan includes water conservation initiatives and measures
4	<b>Drought Management</b>	Comply - Drought Management Plan (Council Ref D20/35135)
5	<b>Performance Monitoring</b>	Comply – See Section 10 of this document
6	<b>Integrated Water Cycle Management</b>	Compliance with the intent and outcomes. IWCN Plan adopted in 2009 and led to Servicing Strategies prepared in 2013. These servicing strategies take the IWCN outcomes to the next level and have directed the major construction activities required for implementation.

## Compliance and Performance Requirements

As indicated above, Shoalhaven Water operates in a governance framework that requires both formal reporting and compliance certification within the local government structure, with additional requirements as a Local Water Utility. The table below summarises these requirements.

Type	Source	Requirements Relevant to Water and Sewer
Strategic Requirements	Integrated Planning and Reporting (IPR) Guidelines	<p>Community Strategic Plan – main priorities for a 10 year timeframe</p> <p>Resourcing Strategy – Provision for :</p> <ul style="list-style-type: none"> <li>long term financial planning – 10 year horizon</li> <li>workforce management planning– 4 year horizon</li> <li>asset management planning – 10 year horizon</li> </ul> <p>Delivery Program – Adoption by 30 June after election of new Council</p> <p>Operation Plan –Annual sub-plan of the delivery program to be adopted by 30 June each year</p> <p>Annual Report – Prepared within 5 months of the end of financial year, outlining Council’s achievements in implementing delivery program, including financial statements.</p>
	National Water Initiative (NWI)	National Annual Performance Reporting
	NSW Office Water Best Practice Management Guidelines	<p>Annual Performance Reporting</p> <p>Annual Trade Waste Concurrence Reports</p>
Legal and Regulatory	Public Health Act and Regulations	Develop and adhere to a QAP for drinking water, including external audit
	Protection of the Environment Operations Act	<p>Annual licence returns for sewage treatment plants</p> <p>Incident reporting</p>
	Protection of the Environment Legislation Amendment Act	Publish effluent quality monitoring results
	Environmental Planning and Assessment Act 1979	Required procedures for all proposals that have an effect on the environment
	Dam Safety Act and Regulations	Dams Safety NSW was established on November 1, 2019. The new regulatory framework includes the Dams Safety Act 2015, the Dams Safety Regulation 2019, and methodologies. From November 1, 2019, there is a two-year transition period for owners of declared dam to implement new regulatory requirements.
	Water Management Act 2000	Water Sharing Plan requirements – Water Access Licence 25350: Approvals10CA102367 (Burrier) and 10WA102390 (Danjera). Water Licence 10SL025959 Porters Creek Dam
	Fluoridation of Public Water Supplies Act	Meet monitoring and reporting requirements of the NSW Fluoridation Code of Practice
	Water Act 2007 and Water Regulations 2008	Supply of Metadata and Contextual requirements of the Bureau of Meteorology (BOM)

## Energy & Water Ombudsman NSW (EWON)

With an emphasis on quality assistance and continuous improvement, Shoalhaven Water understands that customers may look for an independent means by which to resolve any concern which they might hold about our provision of services. For this reason, Shoalhaven Water voluntarily became a member of the Energy & Water Ombudsman NSW (EWON) on 1 June 2009. Customers can contact EWON at no expense to themselves and EWON can investigate, mediate, and resolve complaints independently of any interference by Shoalhaven Water.

## Situation Analysis – Key Result Areas

The NSW Water and Sewerage Strategic Business Planning guidelines outline 6 key result areas for self-analysis for current and future positioning. The table below summarises these areas at a macro level.

Levels of Service	
Current Position	Future Position
Customer Service Levels Adopted and documented in Customer Service Plan High Level of community satisfaction with level of service – See Shoalhaven Council Community Survey in Section 4.1	Review Customer Service Plan every 4 years to coincide with the new Council term.

Service Delivery	
Current Position	Future Position
Services delivered by a combination of in-house workforce, consultants and contractors.	Services delivered by a combination of in-house workforce, consultants, and contractors. In house resources for water and sewer modelling.

Workforce	
Current Position	Future Position
There are currently 247 staff in Shoalhaven Water. The long running trainee programs within Shoalhaven Water has assisted in a more balanced age profile, with a substantial reversal of the under-representation of younger workers. This is a developing trend that will assist in minimising the effects of the ageing workforce.	Attracting and retaining talented, first class employees continues to remain a significant priority for Shoalhaven Water. We aim to achieve this by creating and providing a workplace that is safe, ethical and where our employees continue to be challenged to be innovative and make a difference.

Customer Service		
	Current Position	Future Position
<b>Area to be Serviced</b>	<p>99.2% of urban population provided with reticulated water, 98.2 % of urban population provided with sewerage.</p> <p>Council resolution 10/11/2020 to undertake a feasibility study into the provision of a sewerage scheme to Tomerong Village and Environs.</p>	<p>Little community impetus for extension to other areas such as Bawley Point and Kioloa but this may change in a different political climate.</p>
<b>Demand Management</b>	<p>Water demand per property is low on a comparative basis, and has decreased over years as effective demand management initiatives have been implemented.</p>	<p>Ongoing campaigns to improve water efficiency and community knowledge of sustainable practices.</p>
<b>Pricing and regulation of services</b>	<p>Pricing and Regulation requirements of Best Practice Guidelines met.</p> <p>Pricing path reviews integrated into Council IPR schedules.</p>	<p>Pricing and Regulation requirements of Best Practice Guidelines met.</p> <p>Pricing path reviews integrated into Council IPR schedules.</p>
<b>Customer / Community Involvement</b>	<p>Ongoing community engagement, through Council common channels and specific Shoalhaven Water website, including specific engagement plans for major projects.</p>	<p>Customer Relationship Management system tailored to individual needs and community focussed outcomes.</p>
<b>Environmental Protection</b>	<p>Relevant environmental impact investigations in the strategic, conceptual, and design phases for new and upgrade works. Urgent works identified and rectified reactively.</p> <p>Testing and monitoring of the environment through regular system requirements.</p> <p>Delivery of water recycling projects and renewable energy resources.</p> <p>Extensive reclaimed water and biosolids reuse – separate annual report provided to stakeholders.</p>	<p>Implementation of Coastal Zone Management Plan to address longer term issues – i.e., climate change, sea level rise and coastal erosion and the impacts on assets.</p> <p>Expansion of water recycling projects and renewable energy resources.</p>

Finance	
Current Position	Future Position
<p>20-year financial plan sets out strategy for operations and capital expenditure and income. The water and sewer funds are managed in a manner to achieve an operating surplus in each fund. Applicable dividends have been paid to Council's General Fund following Best Practice allowances since 2003/04.</p>	<p>Subsidies or grants have not been factored into future programs.</p> <p>Funding for major capital works will be a combination of loans and reserves.</p>

Total Asset Management		
	Current Position	Future Position
<b>Integrated Water Cycle Management Strategy</b>	<p>IWCM Plan adopted in 2009 and led to Servicing. Strategies prepared in 2013.</p> <p>Actions from the IWCM report and servicing strategies being implemented through capital works program.</p> <p>Implementation of IOT systems to source next generation of data.</p>	<p>New models developed for system development and optimisation based on new data and mature information.</p> <p>Real time and AI systems used to create asset and non-asset solutions.</p> <p>Optimised capital replacement solutions complemented by non-asset solutions.</p>
<b>Operation and Maintenance</b>	<p>Over \$1.5B asset replacement value -Range of asset ages – some assets still in use over 100 years old.</p> <p>Qualitative assessment of asset condition, with programmed replacement identified for critical assets.</p> <p>Operations and Maintenance Manuals for :</p> <ul style="list-style-type: none"> <li>• Sewage Treatment Plants (13)</li> <li>• Water Treatment Plants (4)</li> </ul> <p>Risk based Water Quality Management Plan based on ADWG</p> <p>Primary water source in north is Shoalhaven River – downstream of Tallowa dam.</p> <p>Primary water source in south is Porters Creek dam.</p> <p>Current annual water usage approximately 13 GL</p> <p>Current annual volume of sewage collected 7.5GL</p>	<p>Condition assessment of assets incorporated into inspection and monitoring programs.</p> <p>Replacement/Renewal Programs for all assets based on operational history and condition assessment and knowledge.</p> <p>Replacement and management program developed for all assets potentially influenced by climate variation, sea level rise and coastal erosion.</p> <p>Computerised Maintenance Management System.</p> <p>Ongoing improvement of WQMP based on external audits.</p> <p>Risk based recycled water plan to be implemented and audited.</p> <p>Primary water sources managed following any Water Sharing Plan revisions and recycled water use increased.</p>

## Business and Insurable Risk Profile Analysis

Risk permeates every aspect of Shoalhaven Water's operations. Implementation of innovative technologies and asset upgrades are required to replace ageing systems, and to manage the risks associated with a variable climate, extreme weather events and changing regulatory requirements. These conditions deliver uncertainty in relation to future water resource management and test the capabilities of the city's ageing infrastructure.

Council is also aware, however, of local economic conditions that can constrain the ability of customers to absorb the costs of updating water and sewer technology and infrastructure, despite community expectations to uphold the integrity and quality of water supply and sewerage services. Council has the challenge therefore of balancing the inherent risks with its water and sewer services with the quantum cost to achieve an acceptable residual risk profile.

Shoalhaven Water utilises a number of tools to manage its key risks, including:

- Management systems, including involvement in Council's enhanced Enterprise Risk Management initiatives.
- Ongoing and regular reviews of the operational and strategic risk profiles and associated mitigation action plans.
- Improved capital allocation and works planning through the stronger consideration of risk.
- Introduction and ongoing development and delivery of emergency and disaster management plans, training, and exercises.
- Infrastructure changes, including decommissioning of assets and improved management of decommissioned assets.
- Enhancing security at key locations and relocation of moveable plant to reduce theft and damage.
- Greater involvement of internal audit with a stronger alignment to risk.
- Insurance cover for exposures.

Council's insurance coverage is given in Appendix B.

# Vision and **Mission Statement**

## **The Big Picture – Shoalhaven Local Government Area**

### **Council's Community Vision Statement:**

We will work together in 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.

### **Council's Core Values:**

These core values guide our behaviour and help us live in balance with our unique environment and each other to fulfill our goals. We are committed to behaving and acting in ways that reflect our values.





## Shoalhaven Water's Mission Statement

### Our 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".

### Our 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".

### Our 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 of 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.

# Levels of Service

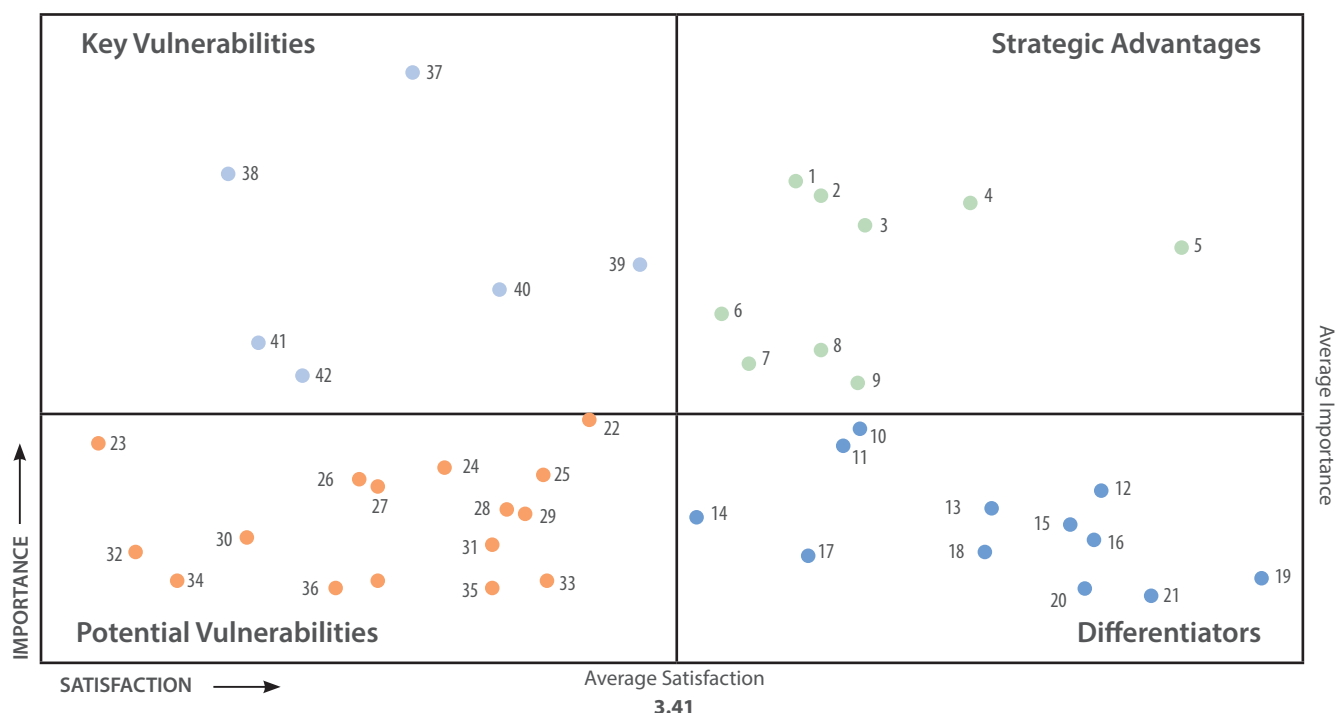
## Customer Survey

Shoalhaven Council has been undertaking community satisfaction surveys since 2014, with the latest in 2020. These surveys measure Council's performance and provide up-to-date insights into perceptions of service delivery, as well as uncovering community issues of importance. The design used for this survey represents the specific needs of Shoalhaven management and allows examination in satisfaction in a number of service areas. The surveys also allow trends over time to be analysed.

An analytical technique known as quadrant analysis has been used in each of the surveys as a way of simultaneously analysing the importance a service holds for residents against their satisfaction with the provision of that service. To do this, mean satisfaction scores are plotted against mean derived importance scores for each customer service dimension measured in the survey. To form the quadrant chart (or opportunity matrix, as it is sometimes called) average importance and satisfaction scores were calculated according to the scores for the complete set of services. The results of the quadrant analysis for the latest survey (2020) are displayed in the Figure below, with the result for the "Operation of water and sewer services" identified as Point 5.

The operation of water and sewer services was in the Top 3 of Council's best performing services.

These services are outperforming an average of councils with comparable characteristics to Shoalhaven City Council. The water and sewer operations service was also defined as a Strategic Advantage. This means that these services are performing above average and have an important impact on creating overall satisfaction with Council.



**Table 3.1 Quadrant Analysis**

Key Vulnerabilities	Strategic Advantages
37 - Appearance of CBD's (major town centre) 38 - Council's action are in-line with community expectations 39 - Management of stormwater and drainage 40 - Informing the community of Council decisions, activities and services 41 - Strategic land use and town planning for Shoalhaven 42 - Promoting economic development (ie jobs growth)	1 - Types of events in the Shoalhaven 2 - Council's customer service 3 - Promotion of tourism 4 - Disaster response in the Shoalhaven 5 - Operation of sewerage and quality water service 6 - Appearance of towns and villages 7 - Landfill and resource recovery services - waste depots 8 - Council's support of events in the Shoalhaven 9 - Companion animal (dogs) management
Potential Vulnerabilities	Differentiators
22 - Provision of car parks 23 - Maintenance of sealed local roads 24 - Environmental protection and enforcement 25 - Sustainable management of Shoalhaven's natural environment 26 - Compliance and enforcement of development 27 - Provision of cycleways 28 - Provision of footpaths 29 - Public toilets 30 - Elected Council decision making 31 - Making the most of our waterfronts 32 - Efficient processing of development applications 33 - Management of street trees 34 - Maintenance of unsealed local roads 35 - Sustainable management of lakes and estuaries 36 - Opportunities to participate in Council decision making processes	10 - Community buildings and halls 11 - Parks, playgrounds and reserves 12 - Hygiene standards of retail food markets 13 - Cemeteries 14 - Facilities and services for the disabled 15 - Shoalhaven Regional Gallery Nowra 16 - Swimming pools 17 - Maintenance of beaches and dunes 18 - Sporting facilities 19 - Library services 20 - Solid waste and recycling collection - wheelie bin service 21 - Shoalhaven Entertainment Centre

The trend of customer satisfaction rating since 2014 for water and sewer services is given in the graph below. The results show a high degree of customer satisfaction compared with other services, and an increasing trend over time (note there was no survey in 2019).



## Customer Service Plan

The primary documents of the Integrated Performance Report – the Customer Service Plan, Delivery Plan and Operation Plan rely heavily on community engagement and consultation. The sheer depth and breadth of activities within Council's operations means that these primary documents generally do not give much weight to water and sewer issues and strategies. In fact, some members of the community may not even be aware that their local council provide the water and sewer services. In addition, there are also different paradigms relating to traditional council activities – e.g., a "ratepayer" is not necessarily serviced as a "customer" of the water utility. The interface between customers, other community stakeholders and Shoalhaven Water can therefore be challenging.

There are also major differences between commercial businesses in competitive markets and the water/sewerage operating environment within which Shoalhaven Water operates. Shoalhaven Water (like many other NSW non-metropolitan water utilities) plans, operates and maintains assets that are owned by the community. Shoalhaven Water supplies essential services which are basic to the community's standard of living. Encapsulated in the philosophy for the provision of these essential services are the recognition of the public good, the use of a limited non-substitutable resource and the protection of this resource for inter-generational equity.

To cater for all these features, Shoalhaven Water developed a Customer Service Plan to reflect its differences from that of other non-essential services and commercial non-monopolistic businesses. It nonetheless includes aspects common to commercially competitive businesses such as establishing customer needs, maintaining customer satisfaction with services, pricing appropriately, and controlling environmental effects of operations within the framework of the policy and regulatory requirements set by State and Federal governments.

The Customer Service Plan is a "stand alone" document which provides customers with clear detail about those services which we provide to the community including water supply, sewerage, trade waste and effluent removal. The Customer Service Plan sets out the parameters of providing the services, defines our customer base and the benchmarks for our performance. It is also a source document which summarises and provides links to the various supporting literature which covers the overall customer servicing strategy for Shoalhaven Water.

The Customer Service Plan is specifically a water industry-centric document framed within the local government industry. It covers activities which involve interaction between Shoalhaven Water, our customers, and the wider community. The Customer Service Plan and its supporting literature therefore takes due cognisance of the following main elements:

- Review and benchmarking of activities
- Areas of the City Served
- Demand Management
- Customer Responsiveness
- Pricing, social, and financial responsibilities
- Consultation
- Environmental Responsibilities

Full details can be found in the current Customer Service Plan.

## Areas Serviced

The Shoalhaven local government area (LGA) is one of the largest coastal LGA's in NSW covering 4220 square kilometres and including 49 towns and villages. The coastline is approximately 170 kilometres and the area has 19 major water catchments including rivers, estuaries, bays, lakes and major creeks. Of the 49 town and villages, over 90% are served by a reticulated water supply. Details of the water supply schemes are given in Appendix C.

Towns that do not have a reticulated water supply are those located south of Lake Tabourie, i.e., Bawley Point, Kioloa, North Durras, and Pebbly Beach.

Shoalhaven Water operates thirteen Sewage Treatment Plants within Shoalhaven City, from Berry to Burrill Lake, and west to Kangaroo Valley. Details of the schemes are given in Appendix D.

Towns that do not have a reticulated sewerage scheme are those located south of Lake Tabourie, i.e. Bawley Point, Kioloa, North Durras, and Pebbly Beach, together with the central town of Tomerong.

Maps showing these areas are given below.

### Unserviced areas have the following characteristics:

Town/Village	Population	Dwellings	Characteristics	Comments and History of Water Supply	Comments and history of sewerage potential
Bawley Point	698	771	Village	No high community demand for reticulated water supply	No high community demand for sewerage system
Kioloa/Merry Beach	257	307	Village	No high community demand for reticulated water supply	No high community demand for sewerage system
Pebbly Beach/North Durras	288	221	Village	No high community demand for reticulated water supply	No high community demand for sewerage system
Tomerong	1065	440	Village and rural residential	Reticulated water system	Potential development pressures for reticulated sewerage (Council resolution 10/11/2020 to undertake a feasibility study into the provision of a sewerage scheme to Tomerong Village and Environs)

Water Supply – Serviced and Unserviced Localities





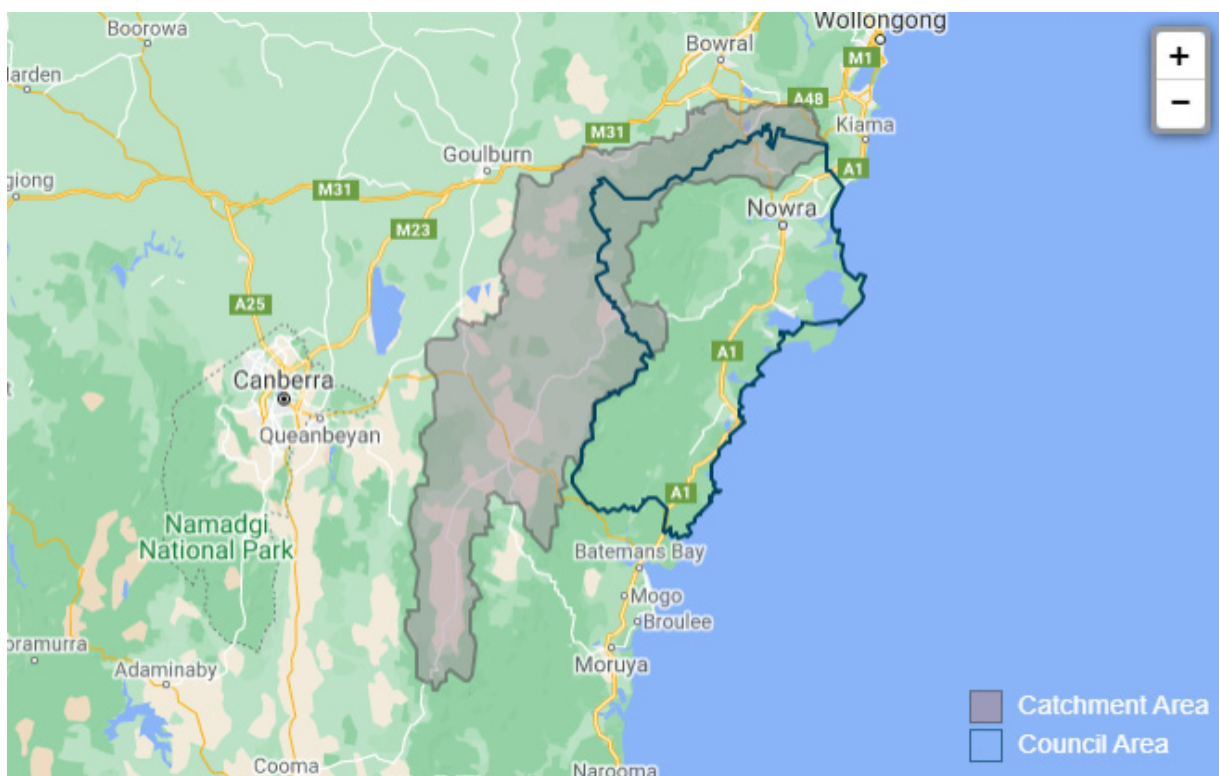
Sewerage – Serviced and Unserviced Localities



# Water Cycle Analysis & Integrated Water Cycle Management

## Water Catchments and Storages

The Shoalhaven local government area (LGA) covers approximately 422,000 hectares along 170 kilometres of coastline, with three large water storages, Lake Yarrunga (Tallowa Dam), Danjera Dam and Porters Creek Dam, as well as nine estuarine lakes. The LGA extends in the south to cover a large portion of the Clyde River catchment, to the northern edge of the Kangaroo Valley and extends inland to the Touga Plateau. It encompasses the commercial and urban areas of Nowra, Bomaderry, Ulladulla and Berry, and numerous village settlements.



Shoalhaven Water manages and operates three separate water supply schemes:

- Northern Shoalhaven Water Supply (NSWS)
- Southern Shoalhaven Water Supply (SSWS)
- Kangaroo Valley Water Supply Scheme

It should be noted that the NSWS and SSWS are interconnected and water can be supplied from north to south under certain conditions. The town of Kangaroo Valley is served by a separate scheme sourced from Bendeela Pondage. Bendeela Pondage is owned and operated by WaterNSW.

The Shoalhaven River extraction accounts for approximately 90% of the water sourced to meet the demand from the Shoalhaven LGA. The extraction rules for the Shoalhaven River are incorporated into the Water Sharing Plan (WSP) for the Greater Metropolitan Region Unregulated River Water Sources 2011. This Plan expires in June 2021 and is currently being reviewed. As part of this review Shoalhaven Water has requested the inclusion of emergency situations under Section 29 of the Plan.

The Shoalhaven's Water Supply is secured operationally through an agreement with the State Govt signed on 1st December 2006 which ensures that the drinking water supply for the Shoalhaven community is not impacted by water transfers to the Greater Sydney area. The operation of the Shoalhaven transfer system is also fundamentally linked to the State Government's Metropolitan Water Plan, with a review of this plan to be released in 2021.

The current WSP rules require that Water NSW must not commence transferring water from the Shoalhaven River Water to the Upper Nepean and Upstream Warragamba Water Source unless:

- (a) the total volume of water in Water NSW storages within these water sources is less than 75% of total storage capacity of those storages, and
- (b) the level of water in Lake Yarrunga is equal to or greater than 55.34 metres (which equates to 1 metre below FSL for Tallowa dam).

Water NSW must cease transferring water from the Shoalhaven River Water Source to the Upper Nepean and Upstream Warragamba Water Source when either:

- (a) the total volume of water in Water NSW's storages within these water sources is equal to or greater than 80% of total storage capacity of those storages, or
- (b) the level of water in Lake Yarrunga is less than 55.34 metres.

The Kangaroo River Water Sharing Plan 2003 was replaced by the Water sharing Plan for the Greater Metropolitan region Unregulated River Water Sources Amendment Order 2016.

## Integrated Water Cycle Management Planning

An Integrated Water Cycle Management (IWCM) Plan for the Shoalhaven was adopted in 2009 and considered five future long-term scenarios with various levels of demand, source and reuse management. The development of this Plan was a lengthy process, requiring significant resource commitment and complied with the requirements of the Best Practice Guidelines. Shoalhaven Water adopted the following program directions as an outcome of this planning process:

- Maintain primary water sources from the Shoalhaven River at Burrier, Bendeela Pondage and Porters Creek Dam.
- Amplification of Bamarang WTP as primary water treatment facility as required by demand (this was predicted to be in 2018 but effective demand management measures have significantly delayed this requirement).
- Upgrade of all wastewater treatment facilities to tertiary treatment level plants.
- Improvement of sewage collection systems through infiltration and inflow reduction.
- Extension to currently identified backlog areas.
- Improved trade waste management through monitoring and audits.
- Catchment management support to the relevant agencies and activities such as protection and rehabilitation of riparian zones, implementation of the water sharing plan, and improved on-site wastewater systems.
- Reclaimed water to be used for both agricultural purposes and targeted new urban areas.
- Source substitution will be both encouraged, in the form of on-site greywater promotion for new development and rainwater tank rebates.
- Conservation of water usage through community programs.

These strategic directions from the IWCM Plan have been embedded in Shoalhaven Water's planning horizons and delivery programs and significant projects have been completed (eg extension of the REMS scheme).

With the adoption of the IWCM Plan, Shoalhaven Water undertook further initiatives to develop the Plan from a high-level document to implementation. To provide sufficient detail for infrastructure design, comprehensive water supply and sewerage servicing strategies were completed in 2013. These servicing reports provide the basis for the system augmentations based on contemporary infrastructure analysis and requirements for future growth.

**The overall strategies were developed in 3 parts as follows:**

### Part A

Water Supply Servicing Strategy Report  
(reticulation and transportation)

### Part B

Wastewater Servicing Strategy Report  
(reticulation and transportation)

### Part C

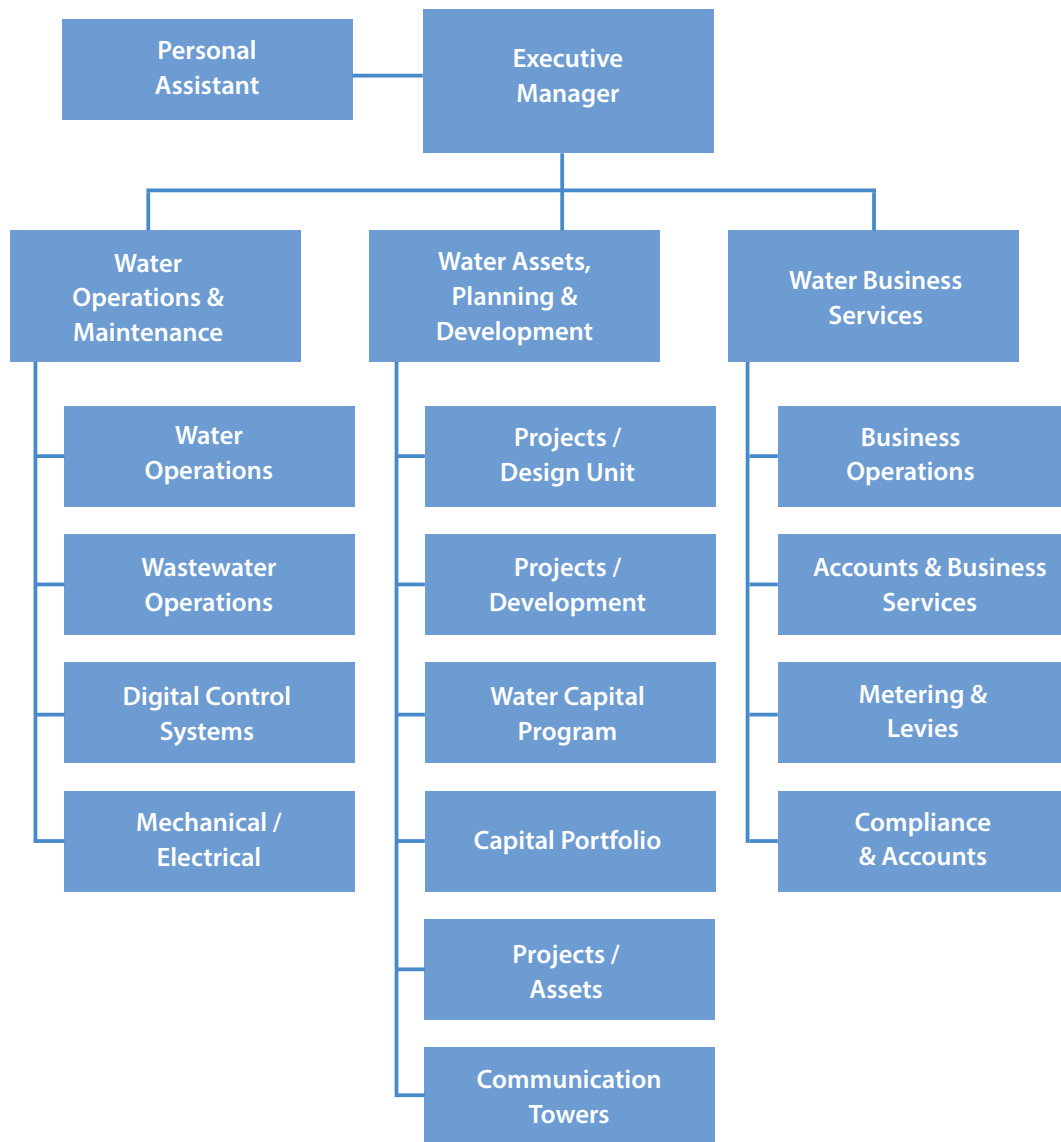
WTP and STP Servicing Strategy Report

Since the development of these strategies, further detailed project development documentation has led to major construction and delivery outcomes. In addition, Shoalhaven Water has introduced additional resources, technology, and methodologies to better manage planning, monitoring and delivery of capital works. These improvements and directions are discussed in Chapter 6.

# Service Delivery Methodology

## Structure within Council

As discussed in Section 2.1, Shoalhaven Water is a separate reporting entity under an Executive Manager, reporting to the Council CEO. The following organisation chart displays Shoalhaven Water's prime functions:





This structure also allows specialist attention to water and sewer activities, and Shoalhaven Water networks extensively within the broader water industry through memberships and relationships with the Australian Water Association (AWA), the Water Services Association of Australia (WSAA), and the NSW Water Directorate.

Shoalhaven Water utilises the Corporate Services Group of Council for the provision of such services as Treasury (Loans & Investments), Accounts Payable, Payroll, Fleet Management, Insurance & Risk Management, Workers Compensation Claims Management, Records Management and IT Applications Management. These services are paid via an overhead model and on-cost system. An assessment is also made at the end of each financial year to determine whether a dividend is payable to the General Fund from each of the Water and Sewer Funds.

## Delivery of Services

The functions of planning, delivery and ongoing operations and management of the water and sewer services for the Shoalhaven is carried out by a combination of day-labour, contract, and consultancy services, mechanical fitters, electrical and communications staff are included within the Shoalhaven Water structure.

Shoalhaven Water has over recent years increased internal resources to better manage planning, monitoring and delivery of capital works and to implement technological advances in the areas of SCADA, Telemetry and IOT (Internet of Things).

Some of the improvements achieved through this methodology include:

- Capital Portfolio Management
  - Portfolio/Program and Project Management system implementation
  - Capex Prioritisation system implementation
  - Establishment of Investment Review Committee
  - Capex Monthly reporting (over and above the Council general reporting requirements)

- Program Management
  - Project Baselineing
  - Time/Cost reporting systems
  - Change Request processes
- Digital Control Systems
  - SCADA/Telemetry upgrades
  - IOT network establishment enabling full Shoalhaven coverage

A review of Shoalhaven Water's delivery mechanisms was recently undertaken within the context of the most recent corporate restructure (2020). The adopted proposal for service delivery includes the following:

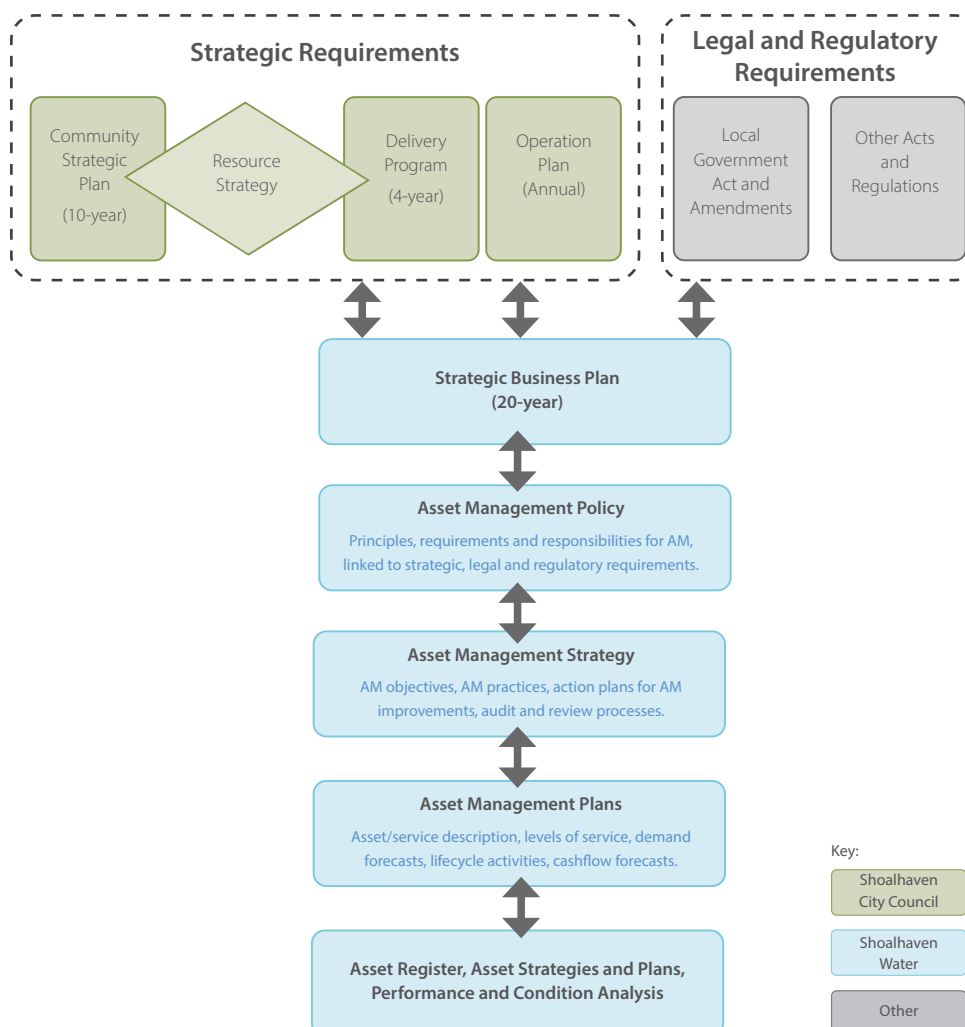
- Increases in full time internal staff (thereby reducing a number of Fixed Term positions).
- Internal full time Project Managers for Capital Projects (with detailed design by external specialist consultants and construction by external contractors) .
- New internal resources for in-house development and calibration of water and sewer models to aid in longer term strategic and planning functions.
- Other in-house resources for inspections of construction activities by external parties to improve quality controls.
- Internal business analyst technical support for water specific functions.
- Dedicated internal Shoalhaven Water resource for strategic management of communication towers and land matters (e.g. acquisitions and easement matters).
- Increased internal resources for digital upgrades, controls, and project delivery for Shoalhaven Water projects as well as other Council initiatives (e.g. IOT Smart City initiatives).

# Total Asset Management

## Strategic Direction

Effective asset management includes the planning, creation, operation, maintenance, and review of assets over their whole life cycle to achieve the agreed Levels of Service at an affordable cost while satisfying corporate goals and statutory/regulatory requirements. Council acquires assets via purchase by contract, construction by Council staff and by handover of assets by developers.

Due to the specialist and specific nature of the assets under its control, Shoalhaven Water's asset system is managed separately from general fund assets, while still working within the corporate framework. The key documents within the asset management framework are shown in the figure below.





Shoalhaven Water has been developing its Asset Management system over a number of years, commencing with an Asset Management Capability Assessment in 2012 with the aims of recording and understanding the current Shoalhaven Water Asset Management practices, future aspirations and to target gaps. This initial piece of work allowed a baseline to be set and a business enhancement program developed with a roadmap for implementation.

Following on from the Capability Assessment, further reports and reviews led to the compilation of an Asset Management Improvement Plan which has been used to drive improvement in Asset Management within Shoalhaven Water. To date over 50% of the items within the improvement plan have been completed with considerable progress in the remaining items. These improvements have allowed Shoalhaven Water to improve its asset management maturity from Core to Intermediate (based on the International Infrastructure Management Manual AMP Maturity Index).

The key achievements to date over this asset management journey are summarised below:

- Development of a Shoalhaven Water Asset Management Policy.
- Development of a Shoalhaven Water Asset Management Strategy.
- Adoption of a Community Engagement Policy, customer surveys and reporting.
- Critical assets and customers being mapped into GIS.
- Development of an Asset Information Framework.
- Development of a Capital Investment Framework and Prioritisation Methodology and documentation of the business processes and policy.
- Water and Wastewater servicing strategies to provide a program for system augmentation and capital works.

- Asset Criticality Framework and Management strategies, Criticality Framework Implementation and Critical Assets Management Strategies.
- Development of a Framework for the Water and Sewer Asset Management Plans.
- Asset Management Plan Review.
- Established a Shoalhaven Water Asset Management Steering Group and a Terms of Reference.
- Asset Data Hierarchy Review.
- Asset Information Confidence Rating.
- Development of Customer Service Plan.

The purpose of the Asset Management Steering Committee (AMSC) referenced above, is to ensure that there is an effective level of governance in place to drive the asset management improvements required within Shoalhaven Water. The AMSC has responsibility for the business enhancement project tasks associated with Shoalhaven Water's Asset Management Capability – Progress Update. It is responsible for providing and endorsing project rationale and objectives, making investment decisions, defining, and realising benefits, and monitoring risks, quality, and timeliness.

The AMSC consists of the following permanent members:

- Executive Manager Shoalhaven Water (Executive Sponsor)
- Water Asset Planning & Development Manager (Project Sponsor)
- Unit Manager Projects & Assets
- Unit Manager Water Capital Portfolio
- Shoalhaven Water Finance Accountant
- Senior Administration Officer

Other representatives attend meetings as required (e.g. Manager Operations & Maintenance, Manager Finance Division, Manager Business Services and External Advisors).

## Asset Register and Asset Data

Shoalhaven City Council has just completed the stage 1 of the implementation of the TechOne "One Council Asset Management System (T1-AMS)". Stage 1 consisted of the integration of the finance system, new asset register and works management modules.

The migration to the new system presented an opportunity to establish a new asset register, incorporating the latest information from the old asset system (Conquest), as well as the GIS database. Confidence in the reliability and completeness of the data is assessed through a confidence rating table. Full details are available in the relevant Asset Management Plans. Further development of the new asset system will continue as more data is made available by the Works Management Module and the future implementation of the TechOne Strategic Asset Management Module.

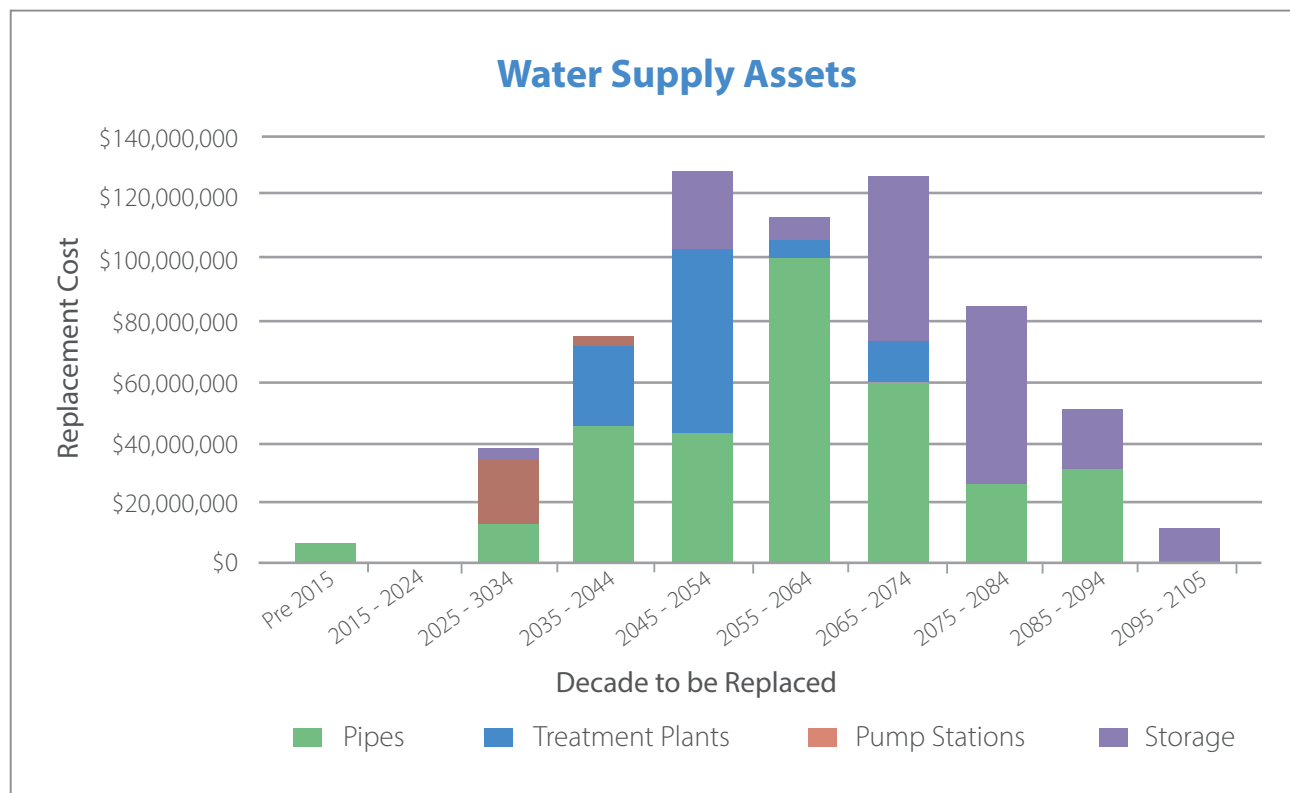
Revaluation of Shoalhaven Water assets was undertaken using aggregated asset data (high level). Shoalhaven Water has completed

a component level valuation as part of the implementation of the TechOne asset management system implementation. Ongoing valuations will be based on an rates and base lives that are regularly revised and consider the local context. Revaluation of the full data set will be undertaken as part of the 21/22 asset accounting process.

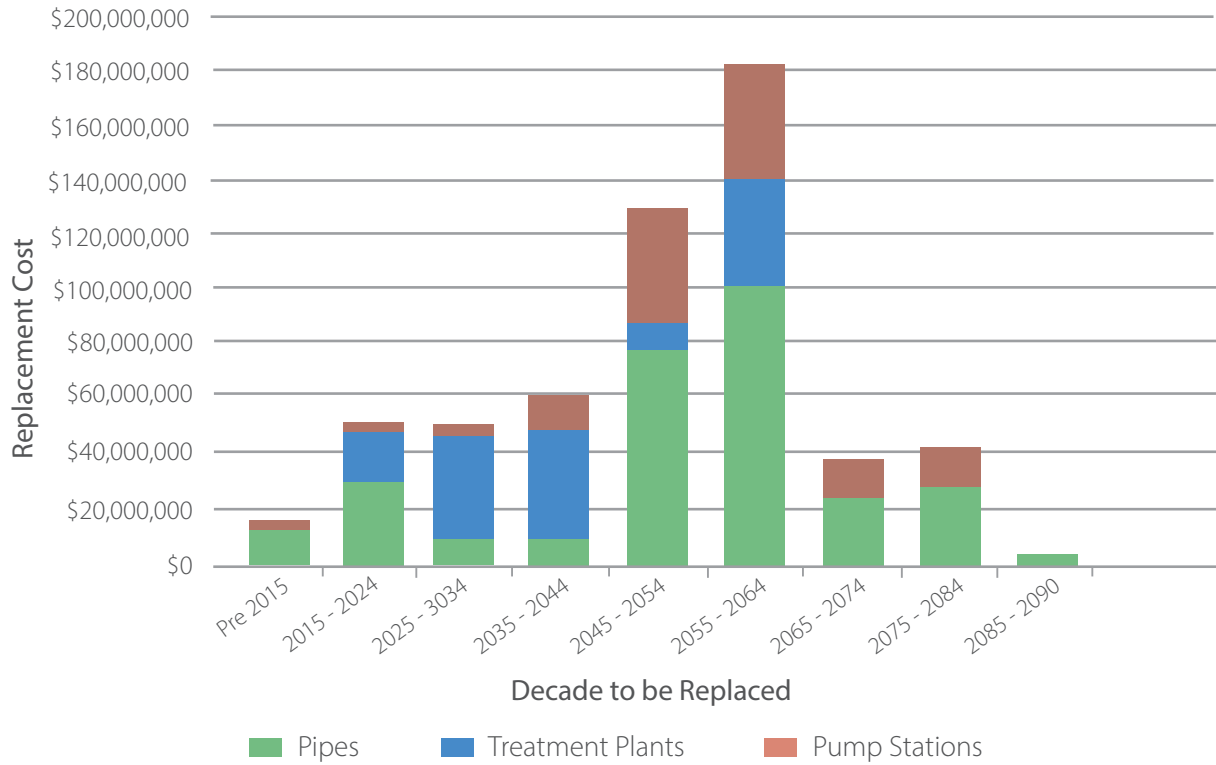
Shoalhaven Water has the responsibility for three groups of assets :

- Water (replacement value over \$600M)
- Sewer (replacement value over \$739M)
- Communications Towers and ancillary infrastructure (replacement value over \$6.9M)

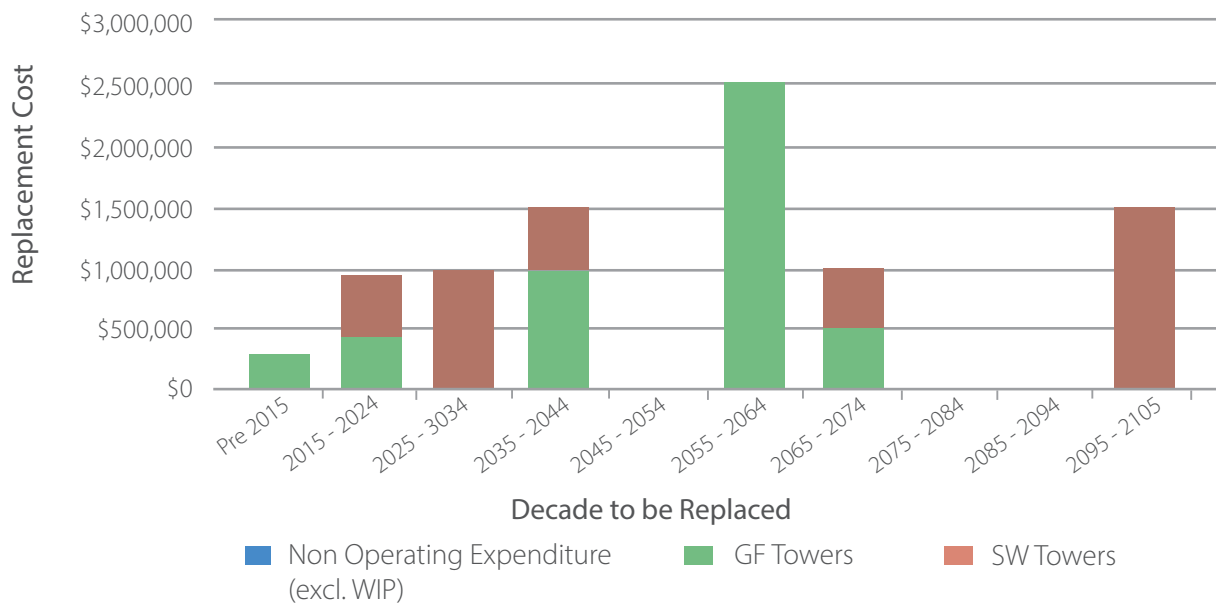
The following graphs provides a snapshot of future replacement requirements for these three groups of assets based on design asset life only. The timeline has been grouped into decades for simplicity.



## Wastewater Assets



## Communication Tower Assets

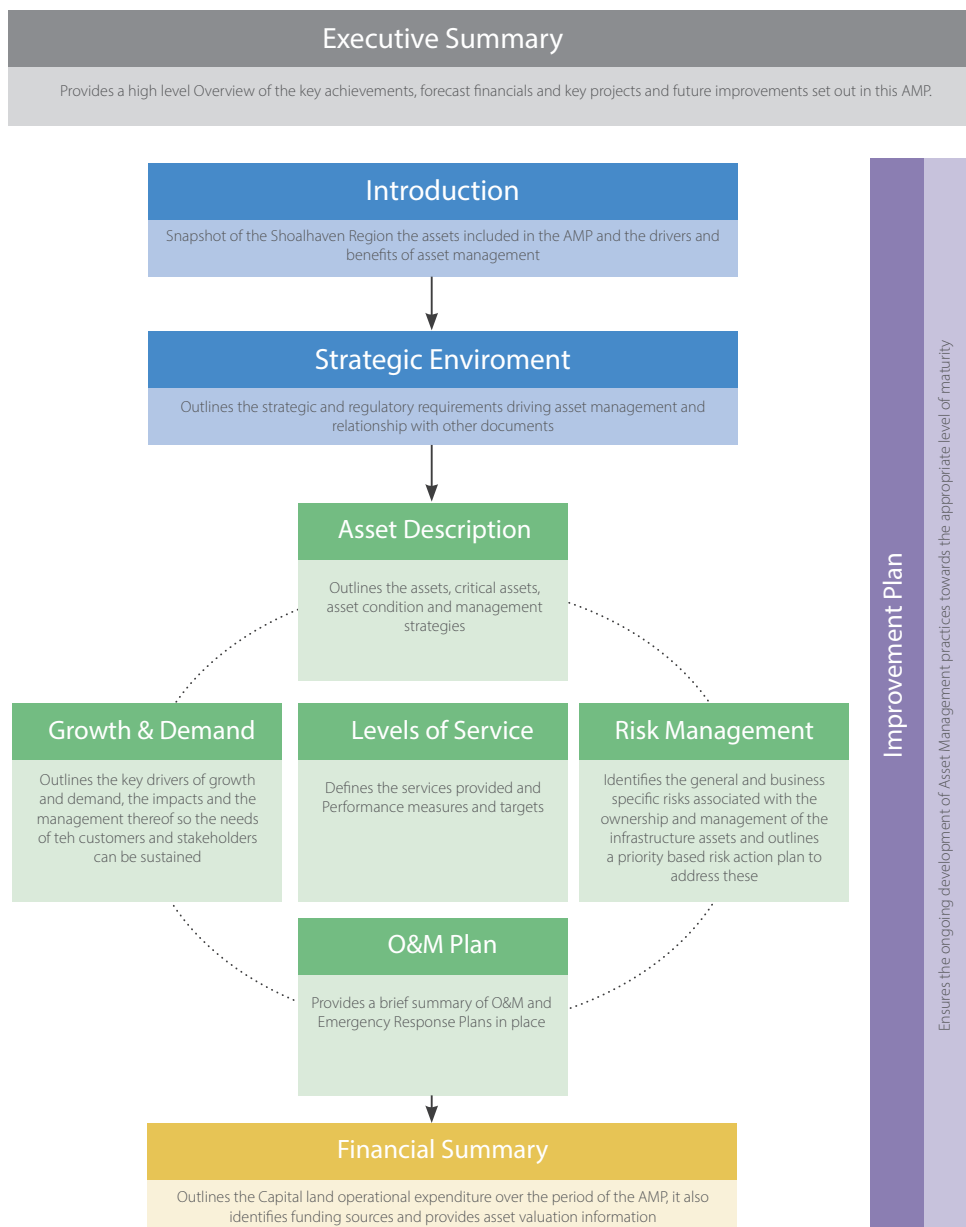


## Asset Management Plans

Shoalhaven Water originally developed and currently maintains three separate Asset Management Plans:

- Water Supply Asset Management Plan – POL 20/8 Review Date 1/10/2021
- Wastewater Asset Management Plan – POL 19/66 Amended Nov 2020 Review Date 1/10/2021
- Communications Facilities Asset Management Plan – POL19/73 Review Date 1/9/2020

These AMPs are utilised during annual budget preparation and amended to recognise any changes in service levels and/or resources available to provide those services through the budget decision-making process. The figure below summarises the scope of the AMPs. The full documents can be found on Shoalhaven Council's website.



## Operations and Maintenance

### Water Supply System Configuration and Characteristics

There are three water supply schemes operated by Shoalhaven Water, being:

- Northern Shoalhaven Water Supply Scheme
- Southern Shoalhaven Water Supply Scheme
- Kangaroo Valley Water Supply Scheme



The Northern and Southern Shoalhaven Schemes are combined via the North-South Transfer System which provides supply security to the Southern Shoalhaven areas during times of drought and high demand.

The Kangaroo Valley system is a “stand alone” system that draws its source water from Bendeela Pondage.

The tables below summarise the key characteristics of the main assets of the Shoalhaven Water Supply that are the responsibility of Shoalhaven Water:

## Asset Class: Storage Dams

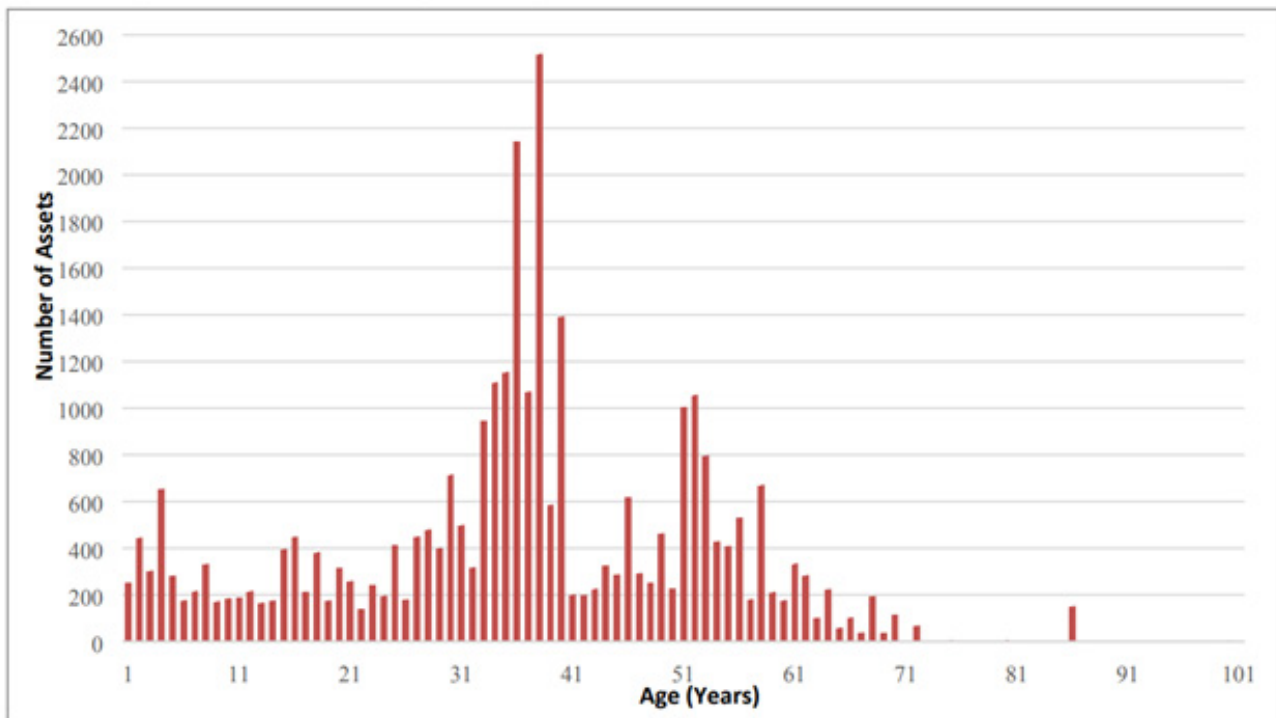
Name	Capacity (ML)	Year of Construction	Type	ANCOLD Rating	Declared (Yes/No)	Comments
Bamarang	3,800	1982	Earth Fill	Significant	Yes	Main Northern Storage
Danjera	7,600	1968	Concrete diamond head buttress with earth side embankment	Low	Yes	Emergency Storage
Porters Creek	1,900	1968 with major upgrade in 2016	Post tensioned concrete and mass gravity with earth fill embankment	Significant	Yes	Main Southern Storage
Flatrock	570	1933	Concrete arch	Low	No	Disused
Cambewarra	28	1910 Raised 1927 Lowered 2015	Concrete gravity earth fill embankment	High consequence	Yes	Disused

## Asset Class: Treatment Plants

Name	Capacity (ML/day)	Year of Construction	Processes
Bamarang	75	1982	Alum flocculation/clarification mixed media filtration Lime/CO2 pH correction/stabilisation Chlorine disinfection fluoridation
Flatrock	25	1934	Alum flocculation/clarification sand filtration Lime/CO2 pH correction/stabilisation Chlorine fluoridation
Milton	10.5	1998	Flocculation (rapid) mixed media filtration Chlorination lime/CO2 pH Correction/stabilisation fluoridation
Kangaroo Valley	1.5	1993	Activated carbon microfiltration chlorination fluoridation

## Asset Class: Sub-Category

Category	Number / Length	Year of Construction
Reservoirs	41	1960 - 2014
Pump Stations	25	1964 - 2014
Pipes / Trunk Mains	426 km	see age profile graph below
Pipes / Reticulation Mains	1,078 km	see age profile graph below
Pipes / Raw Water Mains	28 km	see age profile graph below
Water Meters	51,075	
Valves	8,751	
Hydrants	11,162	



## Drinking Water Quality

Shoalhaven's Drinking Water Quality Management Plan (DWQMP) was updated in 2019. The DWQMP follows the requirements of the Australian Drinking Water Guidelines (ADWG) and forms the basis of Shoalhaven's Drinking Water Management System.

It sets out Shoalhaven Water's drinking water quality strategies. The objective is to ensure that processes are in place to ensure that:

- the quality of drinking water supplied to customers continues to meet regulatory requirements and consumer needs,
- any emerging water quality issues that may arise are effectively addressed.

The DWQMP covers the catchments which provide source water to:

- Danjera Dam
- Bamarang Dam
- Porters Creek Dam
- Bendeela Pondage (managed by WaterNSW)

The DWQMP also covers the aboriginal community water supplies of:

- Browns Flat Village (which is connected to the Nowra distribution system)
- Orient Point Village (which is connected to the Orient Point distribution system)

The catchment characteristics of the Shoalhaven storages are:

### Danjera Dam

The catchment for Danjera Dam is largely within the pristine Morton National Park. The catchment covers 114km<sup>2</sup> and receives water from the Danjera Creek.

### Bamarang Dam

Bamarang Dam is an off-river storage with a small catchment and the remaining majority is pumped from the Shoalhaven River (via Burrier Pump Station)

### Porters Creek Dam

The catchment for Porters Creek Dam is within the Morton National Park. The catchment covers only 5.4 km<sup>2</sup> and receives water from the nearby heath land swamp area.



## Sewerage System Configuration and Characteristics

Shoalhaven Water operates thirteen sewage treatment plants within Shoalhaven City, from Berry & Kangaroo Valley in the north to Ulladulla in the south. These schemes are shown in the diagram below.



Wastewater is currently treated to secondary treatment at two plants and varying levels of tertiary treatment at the remaining eleven plants. The treatment levels of reclaimed waters are compatible with the environmental standards for the relevant receiving environment.

Shoalhaven Water holds 9 Environment Protection Licences (EPL) issued by the Environment Protection Authority (EPA) to cover the operation of the 13 wastewater treatment plants.

Under the Protection of the Environment Legislation Amendment Act 2011, Shoalhaven Water has an obligation to:

- Publish monitoring data collected within 14 days of results being available
- Prepare, implement, and publish a Pollution Incident Response Management Plan to communicate actions and risk control during pollution incidents

The various schemes have been constructed and upgraded over a number of years, and some operating systems are more technologically mature than others. Further reviews and emphasis on the documentation relating to Operations and Maintenance and in particular OEMPs, is required for due diligence.

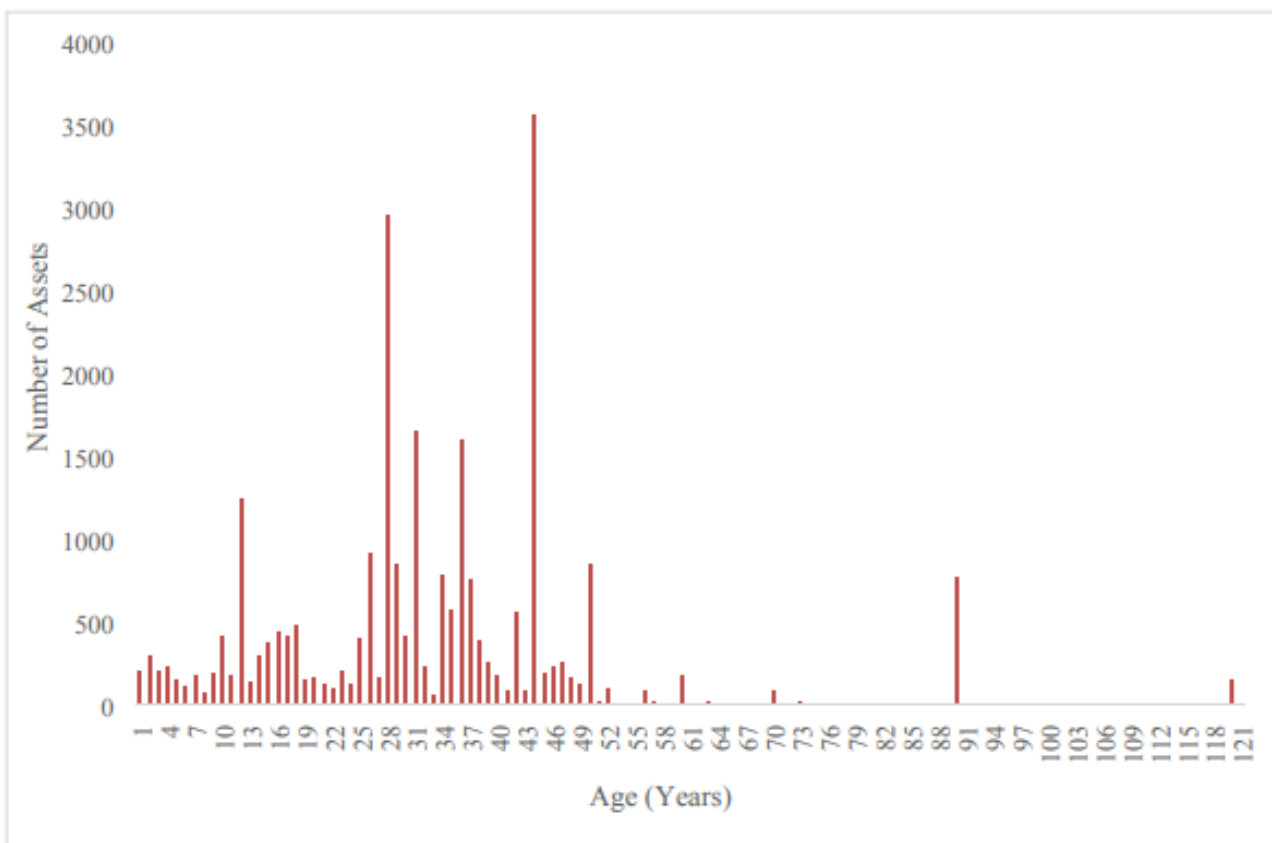
Major programs of pump replacements, generator connections and additional emergency storage at pump stations have been accelerated in recent years to reduce the risk to the environment from sewage overflows.

## Asset Class: Sewage Treatment Plants

Name	Capacity (EP)	Last Upgrade	Treatment Level and Process	Effluent Management System
Berry	3,500	2006	Tertiary - IDEA, sand filtration, UV	Local reuse, Broughton Creek
Shoalhaven Heads	8,000	2012	Tertiary - IDEA, cloth filter, chlorination	Turf farm, golf club, sand dune infiltration
Bomaderry	15,750	2020	Tertiary - IDEA, filtration, 2 stage disinfection, UV	REMS - Agricultural reuse, Shoalhaven River
Nowra	37,100	2020	Tertiary - IDEA, filtration, 2 stage disinfection, UV	REMS - Agricultural reuse, Shoalhaven River
Culburra Beach	11,000	2002	Tertiary - IDEA, filtration, chlorination, UV	REMS - Agricultural reuse, ocean
Callala	6,000	2001	Tertiary - IDEA, sand filtration, chlorination, UV	REMS - Agricultural reuse, ocean
Vincentia	14,000	2002	Tertiary - IDEA, sand filtration, chlorination, UV	REMS - Agricultural reuse, ocean
St Georges Basin	16,000	2010	Secondary - IDEA	REMS - Agricultural reuse, ocean
Sussex Inlet	8,000	1990	Tertiary - IDEA, sand filtration, chlorination	Local playing field, sand dune infiltration
Bendalong	4,600	2007	Tertiary - IDEA, sand filtration, UV	Sand dune infiltration
Lake Conjola	2,700	2007	Tertiary - IDEA, sand filtration, UV	Sand dune infiltration
Ulladulla	32,000	2008	Secondary - IDEA	Ocean
Kangaroo Valley	1,400	2013	Tertiary - Membrane bioreactors, UV	Agricultural reuse

## Asset Class: Sub-Category

Category	Number / Length	Year of Construction
Pump Stations	222	
Pressure Pump Units	1204	
Gravity Pipes	1,021 km	see age profile graph below
Rising Mains	193 km	see age profile graph below
Low Pressure Mains	34 km	see age profile graph below
Manholes	18,630	



## Management Strategies – Criticality Analyses

The identification and understanding of which assets within the above systems are critical (and why they are critical) allows the development of management strategies that minimise the risk of catastrophic events and helps to achieve an optimum balance between the risk of asset failure and the lifecycle costs of inspecting, maintaining, repairing, and renewing 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.

A summary of critical water and sewer assets is provided in the table below. All treatment plants, zone valves, motorised control valves, fire hydrants and surcharge mains are considered critical.

Asset		Percentage Critical
Water Storage Dams		60%
Water and Sewer Treatment Plants		100%
Service Reservoirs	Reservoirs	43%
	Balance Tanks	50%
Water Pipe Systems	Raw Water Mains	50%
	Reticulation Mains	7.8%
	Trunk Mains	66.1%
	PRVs	3.7%
	Zone Valves	100%
	Motorised Control Valves	100%
	Control Valves	6.4%
	Air Valves	52.1%
	Fire Hydrants	100%
Water Pump Stations		44%
Sewer Pipe Systems	Gravity Mains	39%
	Outfall Mains	100%
	Overflow Mains	88%
	Rising Mains	84%
	Surcharge Mains	100%
	Manholes	19%
Sewer Pump Stations		59%

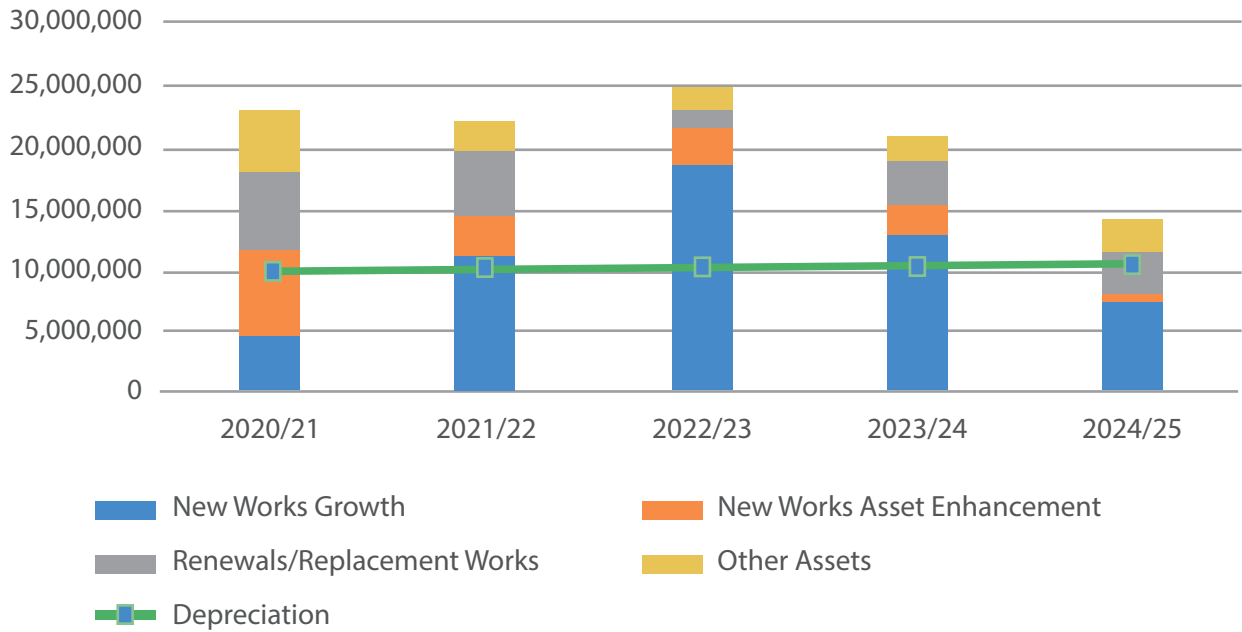
## Capital Works Program – 5 Years

The separate water and sewer funds projected capital works budgets for the next 5 years are given in the graphs below. Depreciation is also shown to demonstrate the ongoing return of the asset bases.

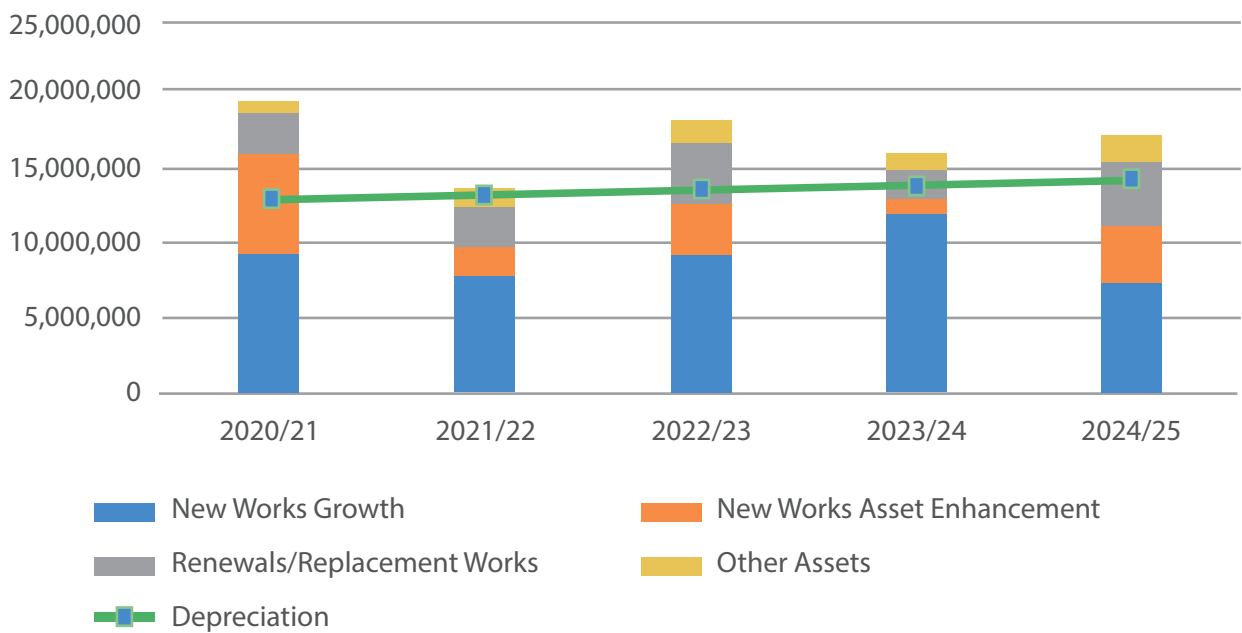
The water capital program is dominated over the next 5 years by the Moss Vale Rd URA and the watermain replacement program. This program has been developed through criticality analyses and has highlighted the need for replacement of a number of PVC pipes made in the mid 1980's that are failing prior to their expected lives. The major capital activity in the sewer fund is the construction of the next stage of the Recycled Water Management Scheme (ReMS 2.0) and the Moss Vale Rd URA.

Funds for these works are provided through revenue, reserves, loans and a \$10M State Government grant for Moss Vale Rd URA Housing Acceleration Fund (HAF).

### Water Supply Capital Works - 5 Years



### Sewer Capital Works - 5 Years



# Workforce Planning

## Current Structure and Staffing Levels

After the latest restructure of Council in 2020, the Shoalhaven Water Group consists of 212 positions, including management, administration, technical and operational staff. Primary functions and internal structure were discussed in Section 6.1

Shoalhaven Water operates under corporate policies regarding Human Resources and WH&S.

## Current Workforce Challenges

Local government faces many workforce challenges to build a capable and agile workforce. The following areas have been identified by Shoalhaven Council as target areas:

- Planning for an ageing workforce
- Addressing knowledge management
- Succession planning
- Attraction and retention
- Staff capability and capacity to harness technological advances
- Developing a resilient and agile workforce
- Capability uplift around effective stakeholder management (both community and councillors)
- Attracting and retaining local staff including youth, Aboriginal and Torres Strait Islander and people with a disability
- Increasing operational effectiveness through communication and collaboration
- Employee learning and development
- Leadership and Management Capability development

## Ageing Workforce and Succession Planning

As indicated above, local Governments generally are facing the double challenge of an ageing workforce combined with a declining skills base. This is especially true within field or operational areas where manual labour is required. The challenge is also for Council's to facilitate and provide leadership to the region to develop employment and career opportunities for the young, help to reduce youth unemployment and lessen the need for them to seek opportunities elsewhere.

To meet some of these challenges, Shoalhaven Water in partnership with Shoalhaven Group Training and TAFE NSW, initiated a large-scale Certificate II in Water Operations Traineeship Program, commencing at the beginning of 2009. The Program was specifically designed to provide the organisation with a current and future pool of trained, competent, skilled, and talented people readily able to undertake a role

within Shoalhaven water and at the same time minimise the effects of the ageing workforce. Importantly, the Traineeship Program provides employment opportunities for the region's youth.

The Traineeship Program is now in its twelfth year and has become an established part of the organisation's culture. The value of the Program to the organisation and the Shoalhaven region has been demonstrated with a number of the trainees progressing to permanent full-time roles. The success of the program was demonstrated in 2017 when Shoalhaven Water was awarded the NSW Training Awards "Large Employer of the Year".





## Training Requirements

The provision of water and sewer services relies on a skilled and competent workforce to meet community expectations, government requirements and changing technologies. Ongoing, high quality training is essential to develop and maintain the skills required to meet these challenges.

Potential operational (Cert II and Cert III) trainees undertake a rigorous selection process which involves literacy and numeracy testing, mechanical comprehension and working attitude testing. During their traineeship they are exposed to a structured range of work experience and required to complete the relevant TAFE modules. The outcome and economic value of this selection and training process is a pool of skilled, competent and experienced staff capable of contributing to the effective and efficient operation of the community's Water and Sewer assets.

# Financial Planning

## Source of Funds and Assumptions

Water and Sewer funds are accounted separately from Council's General Fund. The Local Government Act 1993 specifies that money raised from water and sewer charges may only be used for the purpose of these activities (i.e., water and sewer funds cannot be used to fund general fund activities). However, Council may deduct from both the water and sewer funds an amount as a return on Capital Investment (dividend) and can apply this dividend towards any purpose allowed under the Local Government Act. Dividends have been paid to Council's General Fund in accordance with Best Practice allowances since 2003/04.

Any dividend from the Shoalhaven water and sewer business units is applied to General Fund projects from the Strategic Project Reserve.

Water and sewer income is derived from annual charges and charges for use. Other income is derived from Developer Income (also referred to as Section 64 income). Water and Sewer capital works can also be funded through loan borrowings.

Both the water and sewer funds are defined as Category 1 Business Units (i.e., the annual gross operating income is >\$2m). As such, the Funds are subject to competitive Neutrality Guidelines. This means that the water and sewer businesses are subject to the same corporatisation principles as those applied to State Government business activities.

Shoalhaven has adopted a 20-year planning horizon for water and sewer, the minimum required by State Government Best Practice Guidelines. The following assumptions are incorporated into the current 20-year model:

- Water Supply -No State Government subsidies
- Sewerage – Subsidy under Housing Acceleration Fund (HAF) Government for Moss Vale Rd Urban Release Area

- No new loan funds
- CPI, wages and plant operating assumptions based on Council adopted rates

Operating expenditure is based on the provision of levels of service to meet community expectations, in accordance with accepted and best industry practice at the lowest sustainable costs. Operating and maintenance requirements are influenced by a number of internal and external factors including: -

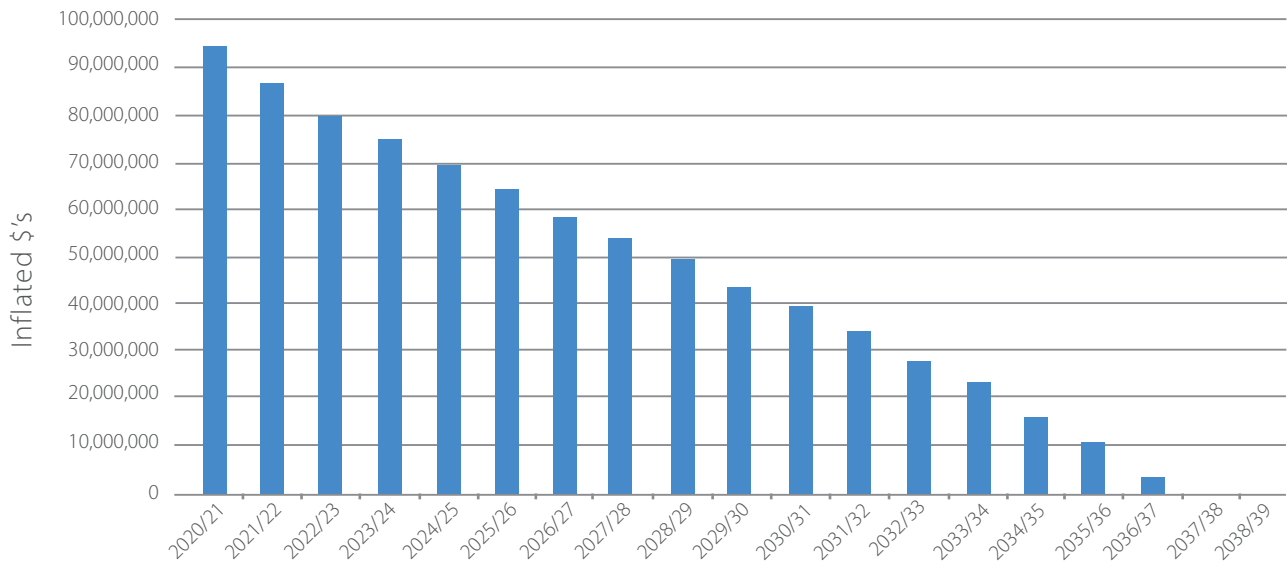
- Changes to consumption patterns,
- Environmental conditions
- Inflation,
- Real wage growth,
- Actual cost increases in materials and equipment, and
- An increasing asset base.

Depreciation of water and sewer assets is also a significant expense item within the operating statements. Depreciation recognises the decline in value of water and sewerage assets over their useful lives and the annual depreciation expense represents how much needs to be charged each year to reflect the value of services and benefits provided from those assets.

Council aims to fully fund depreciation of its water and sewer assets from normal operating revenue.

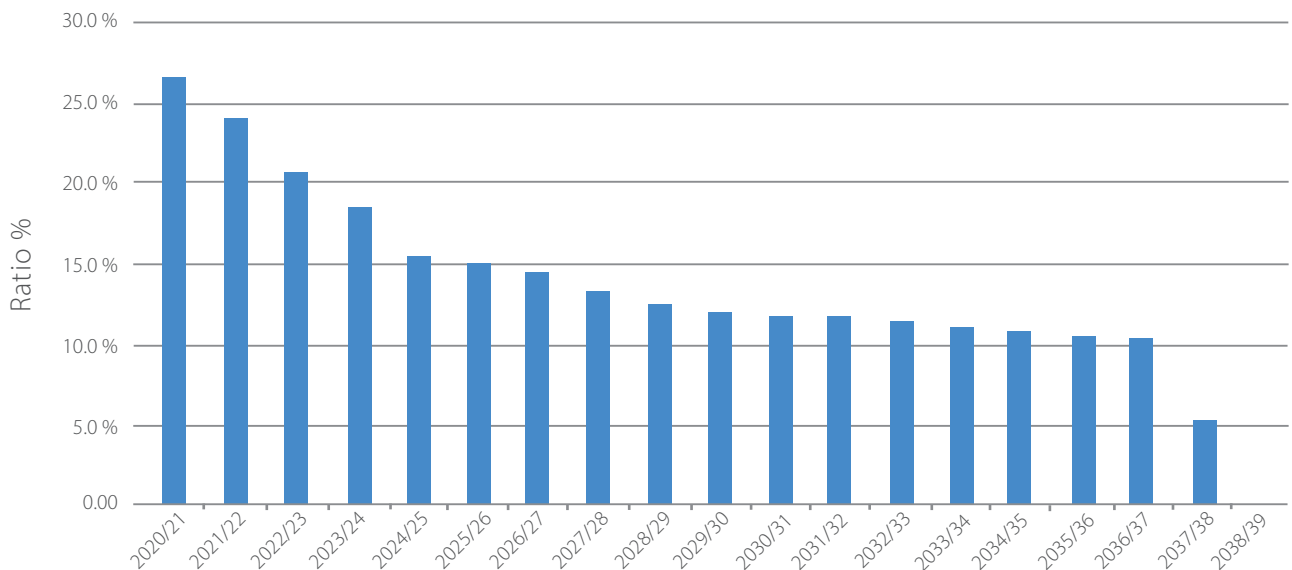
Council models the 20-year financial forecasts as required under the Best Practice Guidelines. Based on the assumptions discussed above, the key debt ratios and the 20-year projection of Typical Residential Bills are given in the graphs below. Note that the sewer fund loans are repaid within 18 years and the Water Fund does not have any loan liability balances. The 20-year financial models are given in Attachment 1.

### Wastewater Fund - Loan Liability Balances



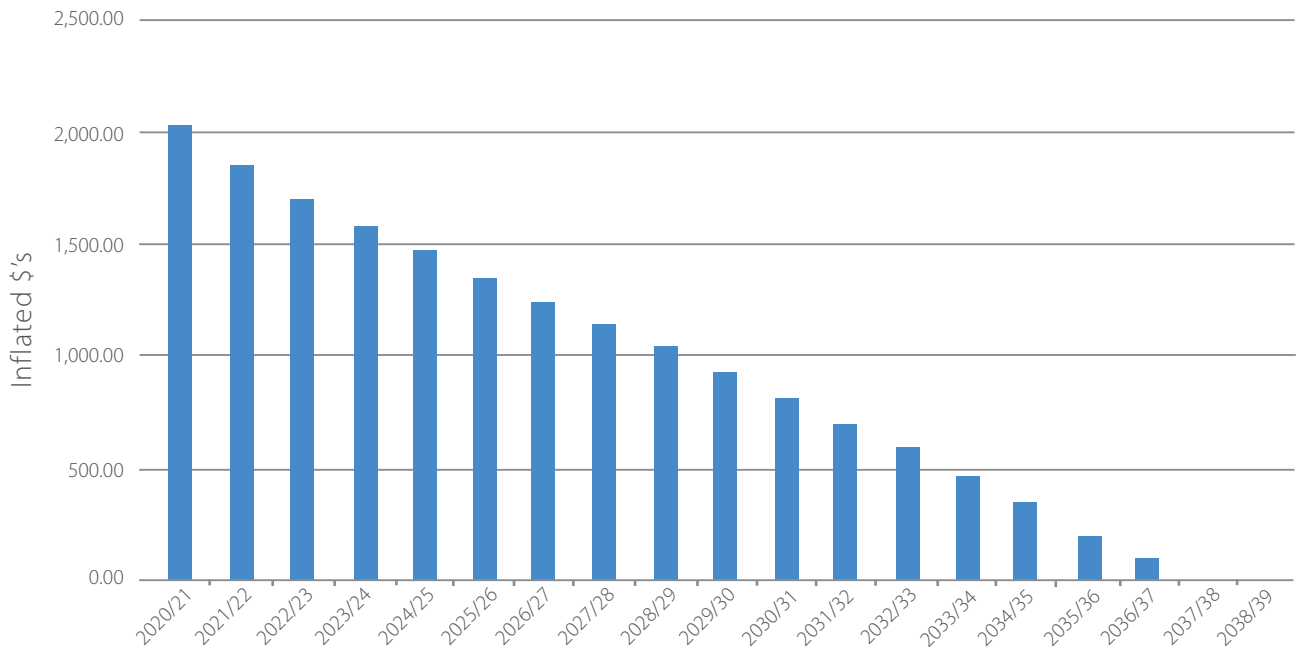
This graph displays the loan liability outstanding at the end of each financial year)

### Wastewater Fund - Debt Service Ratio



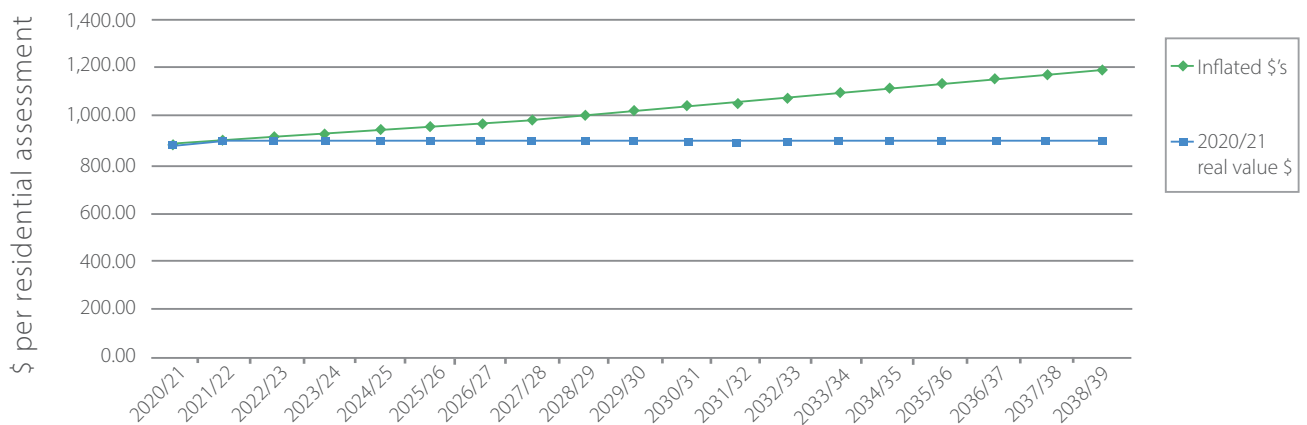
This graph represents the annual debt (principal & interest) repayment costs, as a % of access & usage charge income

### Wastewater Fund - Average Debt per Assessment



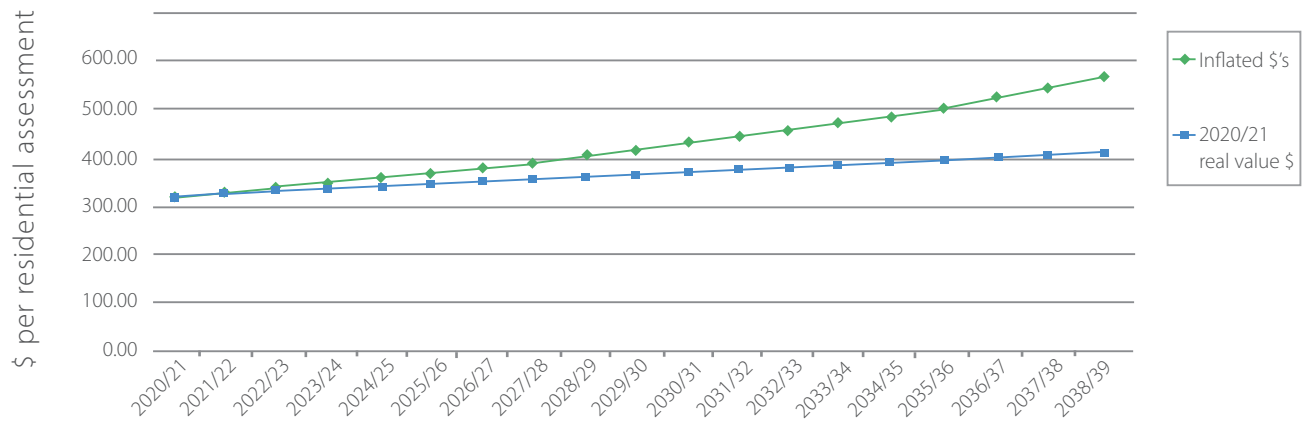
This indicator measures the amount of debt owing (loan liability at year end) per assessment

### Wastewater Fund - Typical Residential Bill - 2020/21 to 2038/39

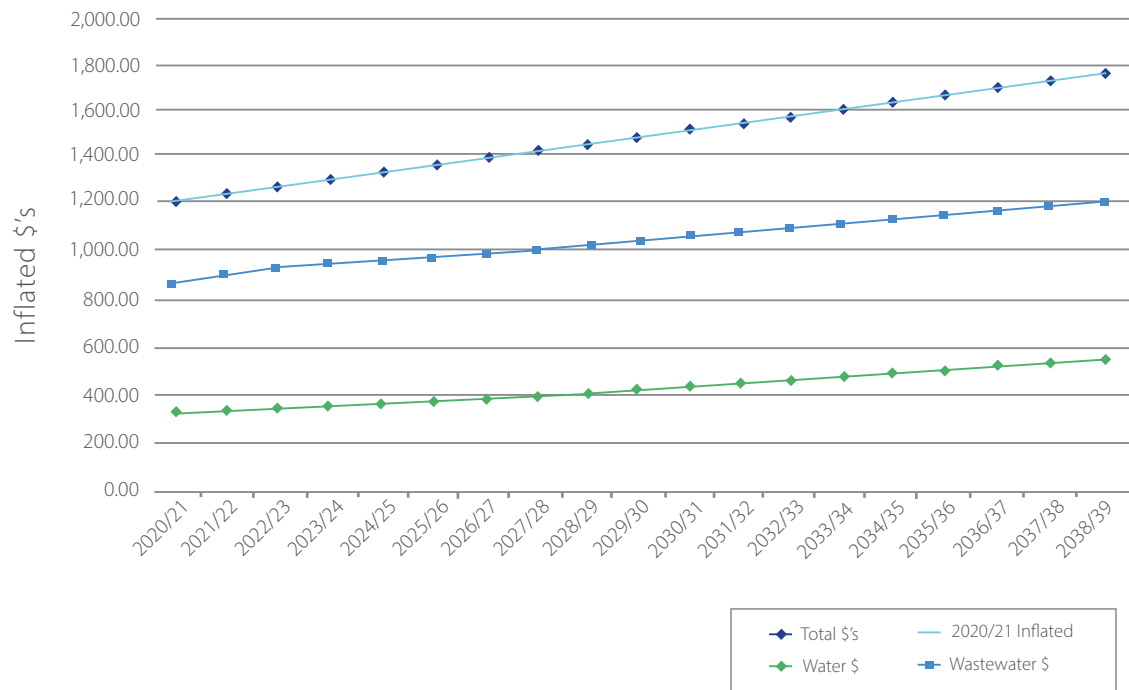


## Water Supply Fund - Typical Residential Bill - 2020/21 to 2038/39

(Gross Residential Availability & Usage Charges divided by Total Residential Assessments)



## Shoalhaven Water Average Residential Bill - 2020/21 to 2038/39



# Annual Performance Monitoring

## Targets and Benchmarking of Services

Performance monitoring and benchmarking are important management tools and are required under the National Water Initiative. Performance reporting is also an opportunity for the local community to understand and review the way in which water and sewer services are being delivered. Performance monitoring and benchmarking also provide valuable data for determining the current position and assessing future water supply and sewerage needs for the area.

To provide a balanced view of the long-term sustainability of local water utilities, a triple bottom line accounting focus has been adopted with performance reported based on social, environmental, and economic performance indicators.

Shoalhaven Water compares its performance to other utilities through annual State and National reporting mechanisms, specifically:

- National Performance Reporting for all utilities with greater than 10,000 connections (published by The Bureau of Meteorology (BOM))
- NSW Water Benchmarking Reporting for all NSW Local Water Utilities (DPIE)

Depending on the type and measurement unit of each performance indicator, Shoalhaven Water target benchmarks that are generally better than average.

## National Performance Reporting

The National Performance Reporting is a comprehensive, comparative performance report, unique for Australia in scale and scope. The report covers more than 166 performance indicators from 85 service providers, including bulk water authorities, water utilities, and councils. Part A reports on key indicators and provides analysis. Part B is a data file of the complete dataset. The National performance report 2019–20 Part A is scheduled to be released on 25 February 2021. The dataset was published on 30 November 2020 and the analysis in the table below has been derived from this raw dataset.

Within the National Performance Reporting data, Shoalhaven Water is classified as a “Medium” sized water utility. This category compares utilities with 20,000 – 50,000 connected properties. There are currently 25 utilities within Australia that fall within this classification.

The results are shown for the 2019/20 financial year. Positive performance results by Shoalhaven Water are shaded in green.

The results below are a snapshot of the key indicators that are reported. The full reporting suite of indicators can be found through the Bureau of Meteorology website.

# National Performance Report

## 2019-20: Urban Water Utilities

	Indicator	Description	Shoalhaven Water Result	Average Result (Non Major Utilities-Large)
< Average	W12	Average annual residential water supplied (kL/property)	155	208
> Average	W26	Total recycled water supplied (Megalitres)	2218	1505

< Average	A8	Water Main Breaks (number per 100km of water main)	11.2	19.6
< Average	A11	Real losses of Water Mains	2.3	2.8
< Average	A14	Sewerage Main Breaks & Chokes (number per 100km of main)	3	25
< Average	A15	Property Connection Sewer Breaks & Chokes (number per 1,000 properties)	3.1	6.2

< Average	C9	Water Quality Complaints (number per 1,000 properties)	0.1	2.5
< Average	C10	Water Service Complaints (number per 1,000 properties)	0.5	14.6
< Average	C11	Sewerage Service Complaints (number per 1,000 properties)	0.4	10.2
< Average	C12	Billing and Account Complaints - water & sewerage (number per 1,000 properties)	0.1	1.0
< Average	C13	Total Water & Sewerage Complaints (number per 1,000 properties)	1	27
> Average	C14	Percentage of call answered by an operator within 30 seconds (%)	98	85
< Average	C15	Average duration of an unplanned interruption - water (minutes)	153	111
< Average	C17	Average frequency of unplanned interruptions - water (minutes)	53	65

	Indicator	Description	Shoalhaven Water Result	Average Result (Non Major Utilities-Large)
> Average	E8	Percentage of biosolids reused (%)	100	86
< Average	E12	Total net greenhouse gas emissions (net tonnes CO2 - equivalents per 1,000 properties)	739	418
< Average	P2	Annual bill based on 200kL /a - Water (\$)	433.00	685
< Average	P5	Annual bill based on 200kL /a - Sewer (\$)	876.00	769
> Average	P7	Annual bill based on 200kL /a - Water & Sewer (\$)	1,309.00	1,510
< Average	P8	Typical Residential Bill - Water & Sewer (\$)	1,231.00	1,452
> Average	H3	% Population where microbiological compliance was achieved	100	100

## NSW DPIE Performance Reporting

The NSW DPIE provides and maintains a web-based database for NSW regional water utilities to annually report their current water supply and sewerage data. In the past, the relevant NSW Department prepared a comprehensive NSW Water Supply and Sewerage Benchmarking Report which presented the full suite of performance indicators and benchmarking data for all local water utilities. An annual two-page triple bottom line performance report for each utility's water supply business and for its sewerage business was also provided. The last public performance and benchmarking report for NSW water utilities related to the 2015/16 financial year.

The latest web-based data (as of December 2020) relates to the 2018/19 financial year. The web-based database and interactive graphical display allows comparisons between all utilities for each of the state-based indicators, or a band selection based on the size of the utility (determined by the number of connected properties)- ie

Connected Properties Band

- 1. Small (<=1500 prop)
- 2. Medium (<=4000 prop)
- 3. Big (<=10000 prop)
- 4. Major (>10000 prop)



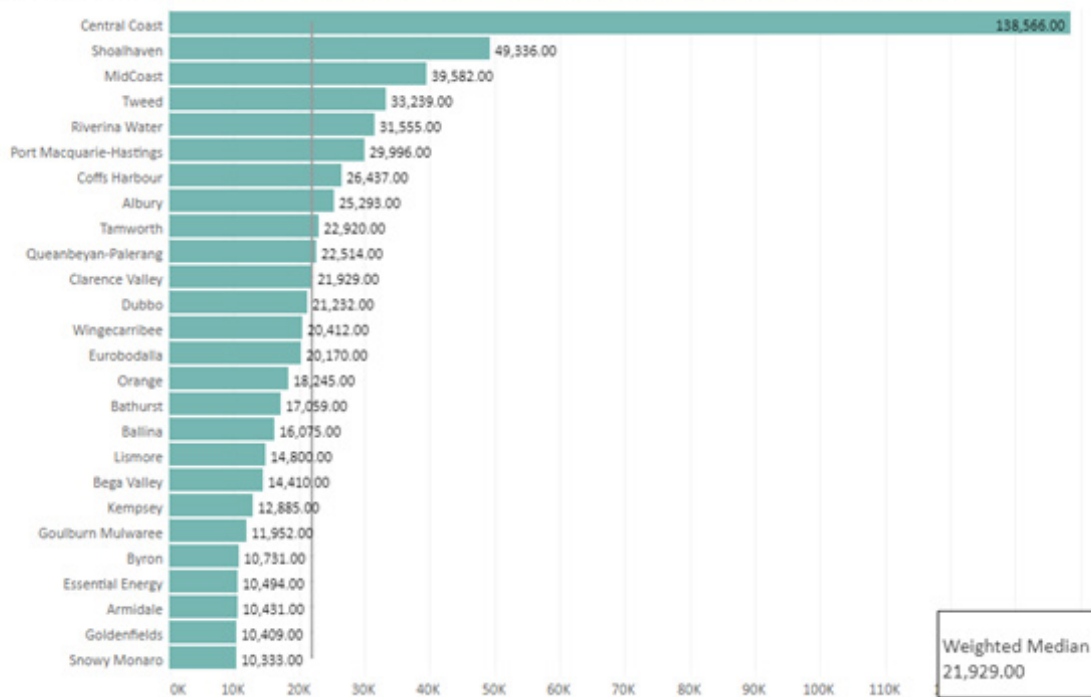
In this state-based system, Shoalhaven Water is classified as a “major” utility. The graph below shows the relative size of the utilities within this classification.

### Connected Properties - WS

Units: No.

Total connected properties (residential plus non-residential). Calculated from number of assessments multiplied by the ratio of connected properties to assessments.

The weighted median is the median of the available validated data for the indicator with the number of connected properties applied as weights.



In the absence of a separate TBL report, the interactive web display allows the user to select individual performance indicators, the relevant year of data, and a band selection or individual utility. A separate state-wide weighted median value is also supplied for each indicator. This interactive display is found at:

<https://www.industry.nsw.gov.au/water/water-utilities/lwu-performance-monitoring-data>

A selection of 3 indicators and the relevant graphical outputs are shown below.

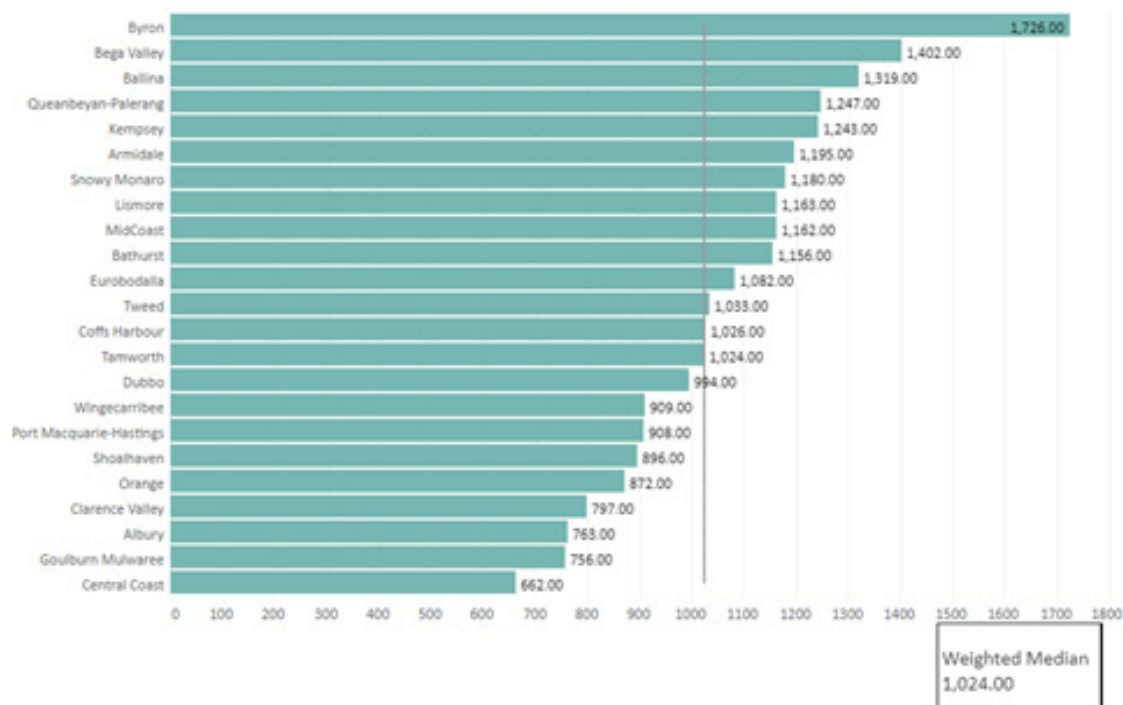
## Operating Cost (OMA) (\$/prop) - W&S

Units: \$/prop

Total water supply and sewerage operation, maintenance and administration (OMA) costs (excluding cost of purchasing water) divided by number of connected properties. OMA includes engineering and supervision costs.

The data has been CPI indexed to 2018-19 report year

The weighted median is the median of the available validated data for the indicator with the number of connected properties applied as weights.



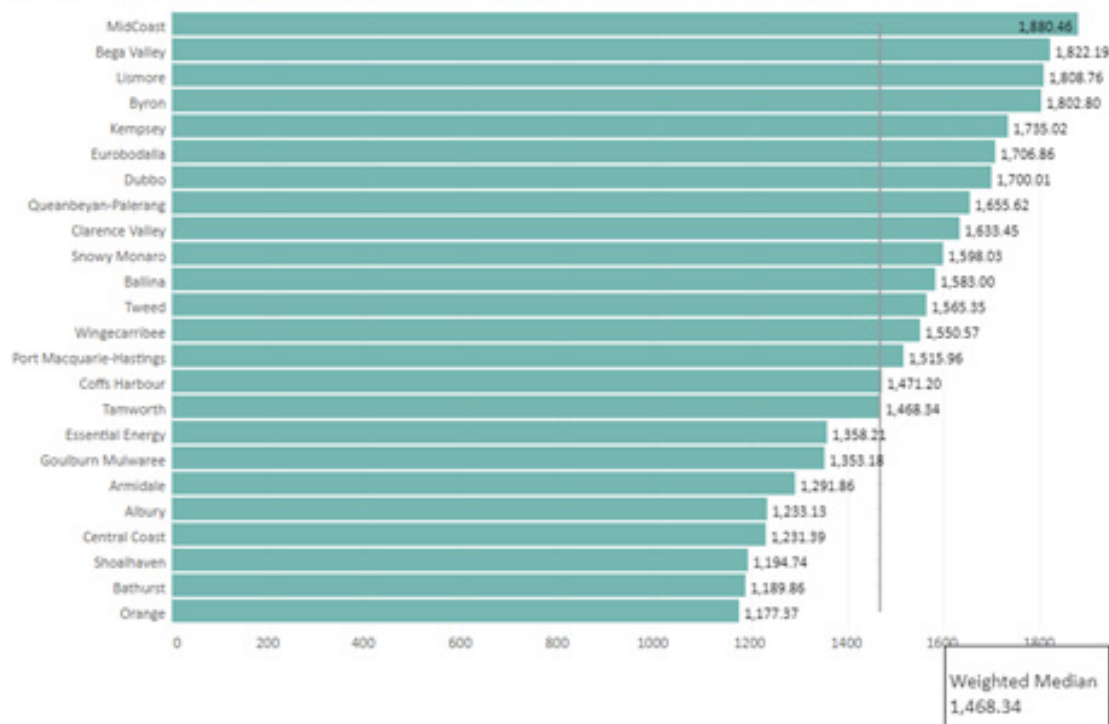
## Typical Residential Bill - Usage - W&S

Units: \$ per connected property

Sum of water and sewerage Typical Residential Bills (using the actual year's usage).

The data has been CPI indexed to 2018-19 report year

The weighted median is the median of the available validated data for the indicator with the number of connected properties applied as weights.

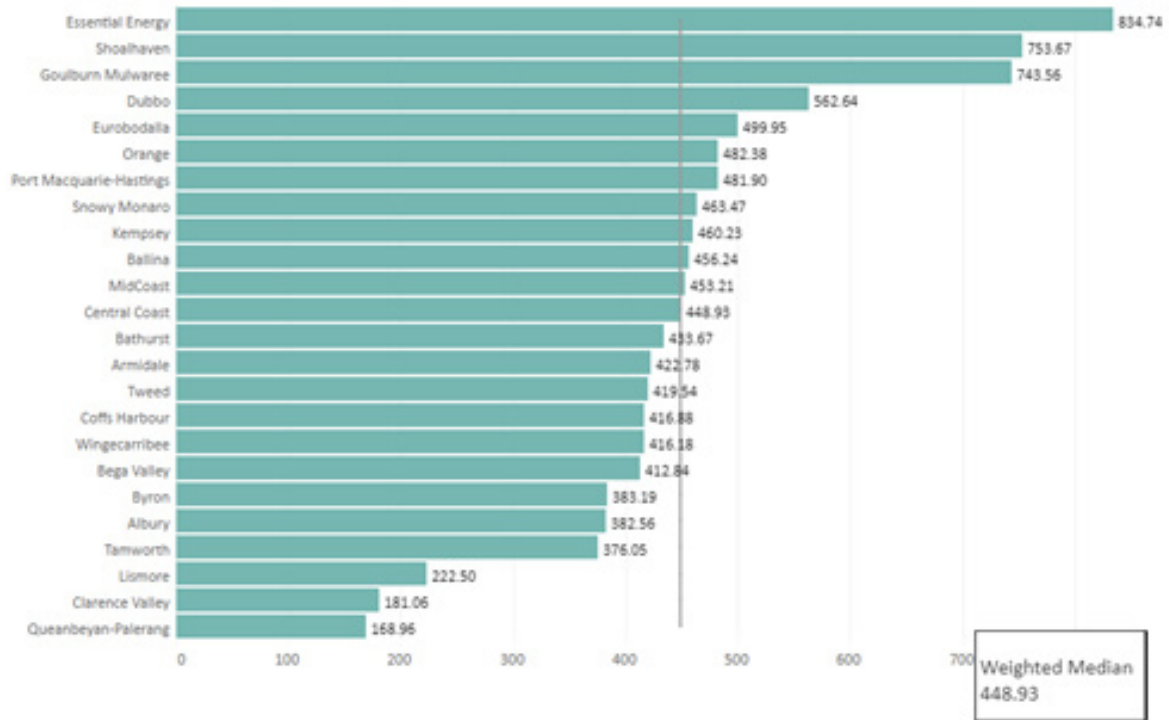


## Greenhouse Gas Emissions per 1000 properties - Total - W&S

Units: t CO<sub>2</sub> per 1000 props

Total net greenhouse gas emissions from all operations and other activities relating to water supply and sewerage per 1000 properties; i.e. emissions generated by the utility through all its operations and other activities relating to water supply and sewerage, directly (scope 1) and indirectly (scope 2) pursuant to NGER.

The weighted median is the median of the available validated data for the indicator with the number of connected properties applied as weights.



The table below summarises a number of key indicators for the 2018/19 financial year, taken from the state database.

## Water Supply

Indicator	Shoalhaven Water Result	Statewide Median Result
Asset Management – Water Supply - Renewals expenditure (% of current replacement cost of system assets)	1.4	0.59
Water Supply - Employees per 1000 properties	1.82	1.57
Watermain breaks per 100km	6.13	10.12
Water Leakage – Real Losses (L/c/d)	71.49	71.49
Water quality complaints per 1000 properties	0.12	2.68
Average Annual residential water supplied per property (kL/property)	146	166

## Sewerage

Indicator	Shoalhaven Water Result	Statewide Median Result
Sewerage - Employees per 1000 properties	2.56	1.87
Sewerage Breaks and Chokes per 100 km	2.73	38.2
Sewerage overflows per 100 km main reported to regulator	1.2	0.72
Recycled water - % effluent recycled	27	15

## Water & Sewerage

Indicator	Shoalhaven Water Result	Statewide Median Result
Total capital expenditure per property	841	397
Typical Residential Bill (Water and Sewer)	1194	1468
Economic Real Rate of Return (Water and Sewer)	2.27	1.93
Net Profit after tax	18781	11743
Operating costs per property (Water and Sewer)	896	1024
Total complaints per 1000 properties	0.87	11.9

## Analysis of Results

The results of both the National and State performance reports are analysed by Shoalhaven Water as they become available. Those areas of performance where improvements might be necessary have been captured as strategy and action items within this Strategic Business Plan.

# Key Strategic Directions

## Action Plan

### Shoalhaven Council –DP/OP Actions for Shoalhaven Water

The following list provides a summary of actions within the current Council Delivery and Operational Plan specific to the sections within Shoalhaven Water.

Goal: Operate and maintain water & wastewater schemes to regulatory requirements		
Action	KPI	Target
Implement initiatives to reduce the number of dry weather sewage overflow events.	Percentage of sewer relining program completed	100%
	Number of monitoring sensors installed and monitored using "Internet of Things" technology.	100
Provide potable water supply in accordance with Australian Drinking Water Guidelines.	Number of E-Coli incidents encountered through testing program.	0
Improve Shoalhaven Water's levels of service for Development & Regulatory Function	Percentage of Development Application and subdivision referrals completed within 21 days	≥80%
	Percentage of all approved Tradewaste discharge locations inspected	≥90%

Goal: Develop asset resilience & security of water supply programs		
Strategy	Actions	Responsible Area
Investigate asset resilience and security of water supply opportunities	Options Report completed and Concept adopted for improved transfer of water from Northern to Southern Shoalhaven	100%

**Goal:**

Develop strategies to help reduce Shoalhaven's carbon footprint

Action	KPI	Target
Conduct energy audits at Nowra and Bomaderry Wastewater Treatment Plants to identify energy efficiency and greenhouse gas emissions reduction opportunities	Number of energy audits conducted	≥2
Supervise University of Wollongong Engineering Honours student as they investigate greenhouse gas emissions from Shoalhaven water and wastewater treatment plants	Honours thesis on greenhouse gas emissions from Shoalhaven water and wastewater treatment plants completed	100%

**Goal:**

Provide efficient, effective &amp; affordable water &amp; wastewater services

Strategy	Actions	Responsible Area
Ensure water is affordable for our customers	Maintain ranking in the top 10% of the most affordable water price in utility category	10%
Undertake regulatory and business performance reporting and report results annually to Council	Provide data for the annual Water Industry National Performance Report and report results to Council	100%
	Participate in the annual Best Practice Management for Water Supply and Sewerage Systems Audit and report results to Council.	100%

**Goal:**

Plan &amp; deliver water &amp; wastewater capital works

Strategy	Actions	Responsible Area
Construct Sewer & Water infrastructure to support Moss Vale Road Urban Release Areas	Percentage of annual capital works completed that support Moss Vale Road Urban Release Areas.	100%

# Appendix A

## Legislation Details

ACT	Implications for Water supply and Wastewater
<b>Local Government Act 1993</b>	<p>The main purpose of the Local Government Act 1993 is to provide the legal framework for an effective, efficient, environmentally responsible, and open system of Local Government in NSW.</p> <p>The Act is, in the main, administered by the Minister for Local Government, but the relevant Minister responsible for Water has significant powers under the Act for water, sewerage and drainage.</p> <p>The Act confers service functions on Councils. These include the provision, management and operation of water supply and sewerage works and facilities. The Act provides Councils with broad power to carry out their functions, and a "Council may do all such things as are supplemented or incidental to, or consequential on, the exercise of its functions" (section 23 of the Act).</p>
<b>Environmental Planning and Assessment Act 1979</b>	<p>The Environmental Planning and Assessment (EP&amp;A) Act was enacted in 1979, and amended by the Environmental Planning and Assessment (Amendment) Act (1985). The Act is the principal planning instrument in NSW, and it specifies the environmental considerations required in all development activities. It also governs the procedures of all proposals that have an effect on the environment.</p> <p>Supporting the Act are also a number of State Environmental Planning Policies (SEPPs). Of key applicability to water and sewer in regional NSW is the "Infrastructure SEPP" (State Environmental Planning Policy (Infrastructure) 2007). This SEPP consolidates and updates 20 previous State planning instruments which included infrastructure provisions. It also includes specific planning provisions and development controls for 25 types of infrastructure works or facilities (including water and sewer).</p>
<b>Local Land Services Act 2013</b>	<p>This Act established Local Land Services and repealed the Rural Lands Protection Act 1998 and the Catchment Management Authorities Act 2003. In this Act, "local land services" means programs and advisory services associated with agricultural production, biosecurity, natural resource management and emergency management, including programs and advisory services associated with the following: It includes "natural resource management and planning". Interaction with LLS can provide assistance with the management of areas that can impact on water quality and water catchment areas.</p>
<b>Public Health Act 2010</b>	<p>The Public Health Act 2010 replaced the Public Health Act 1991. The Act recognises the role of local government in protecting public health. Part 3 Division 1 of the Act includes the provisions in respect to safety measures for drinking water. The Minister has the power to take actions and to issue directions, as the Minister considers necessary:</p> <ul style="list-style-type: none"> <li>• to restrict or prevent the use of unsafe water that is likely to be a risk to public health, and</li> <li>• to bring unsafe water to such a condition that it is no longer unsafe water.</li> </ul> <p>The Chief Health Officer has the responsibility for determining the necessity for a boil water advice and additional information or correction or re-traction of such advice, by a supplier of drinking water for the drinking water it supplies. The Chief Health Officer may also prepare advice concerning public health risks or boil water advice, and provide the advice to the drinking water supplier.</p> <p>According to the Clause 25 of the Act a supplier of drinking water must establish and adhere to a quality assurance program that complies with the requirements prescribed by the regulations.</p>
<b>Fluoridation of Public Water Supplies Act 1957</b>	<p>This Act covers addition of fluoride to a public water supply by a water utility. The Act is administered by the Minister for Health. Under the Act, approval of NSW Health is required in order that a Council can add fluoride to a water supply.</p>

ACT	Implications for Water supply and Wastewater
<b>Dams Safety Act 2015</b>	<p>Dam Safety NSW is responsible for “regulating the safety of dams in NSW.” The Dam Safety Act 2015 supersedes the previous 1978 Act. Under the new Act, legislative guidance is provided by the Dams Safety Regulation 2019, and replaces previous guidance sheets.</p> <p>The new legislation reflects a recognition by Dams Safety NSW of the changing standards and practice applied to dams, with emphasis on safety and accountability for the public and the environment. The stated intent of the change is:</p> <ul style="list-style-type: none"> <li>• “to improve the safety management practices of declared dam owners</li> <li>• to improve the regulator’s ability to enforce the requirements</li> <li>• to remove the potential conflict of interest resulting from dam owners being on the board of the Dams Safety Committee”.</li> </ul> <p>The term “Prescribed Dams”, has changed to “Declared Dams”. A dam will become “Declared” if as a result of failure, human life would be endangered, or the severity of loss or damage would be major or catastrophic.</p> <p>All dams require Operations and Maintenance Plans. For High and Extreme category dams, plans must be updated annually, and for other Declared Dams, every five years.</p> <p>An Annual Report, addressing compliance with dam safety standards, will replace the former Surveillance Reporting requirement.</p> <p>All dam owners must implement a Dam Safety Management System (DSMS) that defines a risk-based approach to managing the dam. Once a Declared Dam falls below a defined safety threshold, risk-based decisions are based on “so far as is reasonably practical” (SFAIRP) principles. This safety threshold is benchmarked against ANCOLD standards.</p>
<b>Independent Pricing and Regulatory Tribunal Act 1992</b>	<p>The Independent Pricing and Regulatory Tribunal Act establishes the Independent Pricing and Regulatory Tribunal and enables the Tribunal to determine and advise on prices and pricing policy for government monopoly services. A government monopoly service is a service supplied by a government agency (which may include a local government council) and declared by the regulations, or the Minister, to be a government monopoly service.</p> <p>The Tribunal conducts investigations and makes reports to the Minister on the determination of the maximum price and on a periodic review of pricing policies for services applied by the agencies specified in Schedule 1 to the Act. Schedule 1 presently includes Sydney Water Corporation, Hunter Water Corporation, Water Supply Authorities, including Gosford City Council, Wyong Shire Council, State Water (Fish River Water Supply) and Essential Energy (Broken Hill). The Tribunal may also conduct investigations and make reports for any government monopoly service, at the request of the Minister, whether or not it is supplied by a government agency specified in Schedule 1.</p>
<b>Water Management Act 2000</b>	<p>The Water Management Act 2000 is the key NSW water legislation for the sustainable management of water. The main tool the Act provides for managing the NSW water resources via water sharing plans. The plans for each catchment set out the rules for the sharing of water between water users and the environment and rules for the trading of water.</p> <p>Section 306 of the Act enables water supply authorities and local water utilities, through a cross reference to section 64 of the Local Government Act 1993, to levy developer charges towards the cost of water infrastructure required for serving development.</p>



ACT	Implications for Water supply and Wastewater
<b>Protection of the Environment Operations Act 1997</b>	<p>The POEO Act introduces a holistic approach to protecting the environment, changing from pollution control legislation to environment protection legislation. The Act enables the NSW Government to set out explicit protection of the environment policies (PEPs) involving environmental standards, goals, protocols and guidelines.</p> <p>Key features of the Act are as follows:</p> <ul style="list-style-type: none"> <li>• Single licensing arrangement relating to air pollution, water pollution, noise pollution and waste management;</li> <li>• EPA issues licences and is the regulatory authority for scheduled activities specified in Schedule 1 of the Act;</li> <li>• Local councils are the regulatory authorities for non-scheduled activities except activities undertaken by public authorities;</li> <li>• EPA can issue licences to regulate water pollution from a non-scheduled activity therefore becomes the regulating authority;</li> <li>• Environment protection notices that can be issued by appropriate regulatory authorities;</li> <li>• The Act includes an offence regime and may involve heavy penalties and or gaol.</li> <li>• The Act includes civil enforcement provisions for third parties.</li> </ul> <p>The POEO Act is a powerful tool for regulation of sewerage and trade waste by local water utilities and facilitating compliance with the utility's conditions of approval for liquid trade waste discharges to the sewerage system.</p> <p>Councils may issue a penalty notice under section 222 of the Act to a discharger who fails to obtain an approval to discharge trade waste to the council's sewerage system or who fails to comply with the conditions of the council's approval. In addition, section 123 of the Act may be used to sue a discharger causing major damage to the council's sewerage system or to the environment.</p>
<b>Water Industry Competition Act 2006</b>	<p>The objectives of the Act and supporting regulations are to encourage competition in the water industry and to foster innovative recycling projects and dynamic efficiency in the provision of water and wastewater services.</p> <p>The Act provides for the matters such as:</p> <ul style="list-style-type: none"> <li>• the establishment of a new licensing regime for private sector providers of reticulated drinking water, recycled water and sewerage services;</li> <li>• the establishment of a third-party access regime for water and sewerage infrastructure;</li> <li>• provisions for a licensed network operator to construct or remove water industry infrastructure;</li> <li>• provisions to authorise IPART to undertake regulatory functions in certain parts of the Act.</li> </ul>
<b>NSW Work Health and Safety Act 2011 and WHS Regulation 2011</b>	<p>Commencing on 1 January 2012, the new Work, Health and Safety (WHS) legislation placed proactive obligations on councils to ensure the health, safety and welfare of their employees at work. Workcover administers acts, regulations and codes relating to work health and safety, as well as workers compensation.</p>
<b>Water Act 2007 Water Regulations 2008</b>	<p>This is Commonwealth legislation that gives the Bureau of Meteorology water information functions and requires Council to supply specified water data to Bureau of Meteorology</p>
<b>Trade Practices Act 1974</b>	<p>The Trade Practices Act extends to water utilities and, accordingly, the Australian Competition and Consumer Commission retains oversight regarding business practices of water-service providers and consumer protection for their customers</p>

# Appendix B

## Council's Insurance Coverage

Class of Insurance	Current Insurer or Protection Provider
Property	Statewide Property Mutual
Public Liability-Professional Indemnity	Statewide Liability Scheme
Public & Products Liability	Liberty International Underwriters
Councillors' and Officers' Liability	Statewide Liability Scheme
Councillors' and Officers' Companion Liability	Statewide Liability Scheme
Motor Vehicle	Statewide Motor Vehicle Scheme
Fidelity Guarantee	Statewide - Fidelity Guarantee Scheme
Casual Hirers Liability	Statewide - Casual Hirers Scheme
Environmental Impairment Liability	AIIG Australia Limited
Personal Accident	ACE Insurance Limited
Journey Injury	CGU Insurance Ltd through Accident & Health Intl Underwriting P/L
Workers' Compensation Top Up	ACE Insurance Limited
Workers' Compensation	Liberty International Underwriters
Marine Hull Commercial	Zurich Australian Insurance Limited
Property - Artworks	AXA Art Insurance Limited

# Appendix C

## Scheme Details (Water)

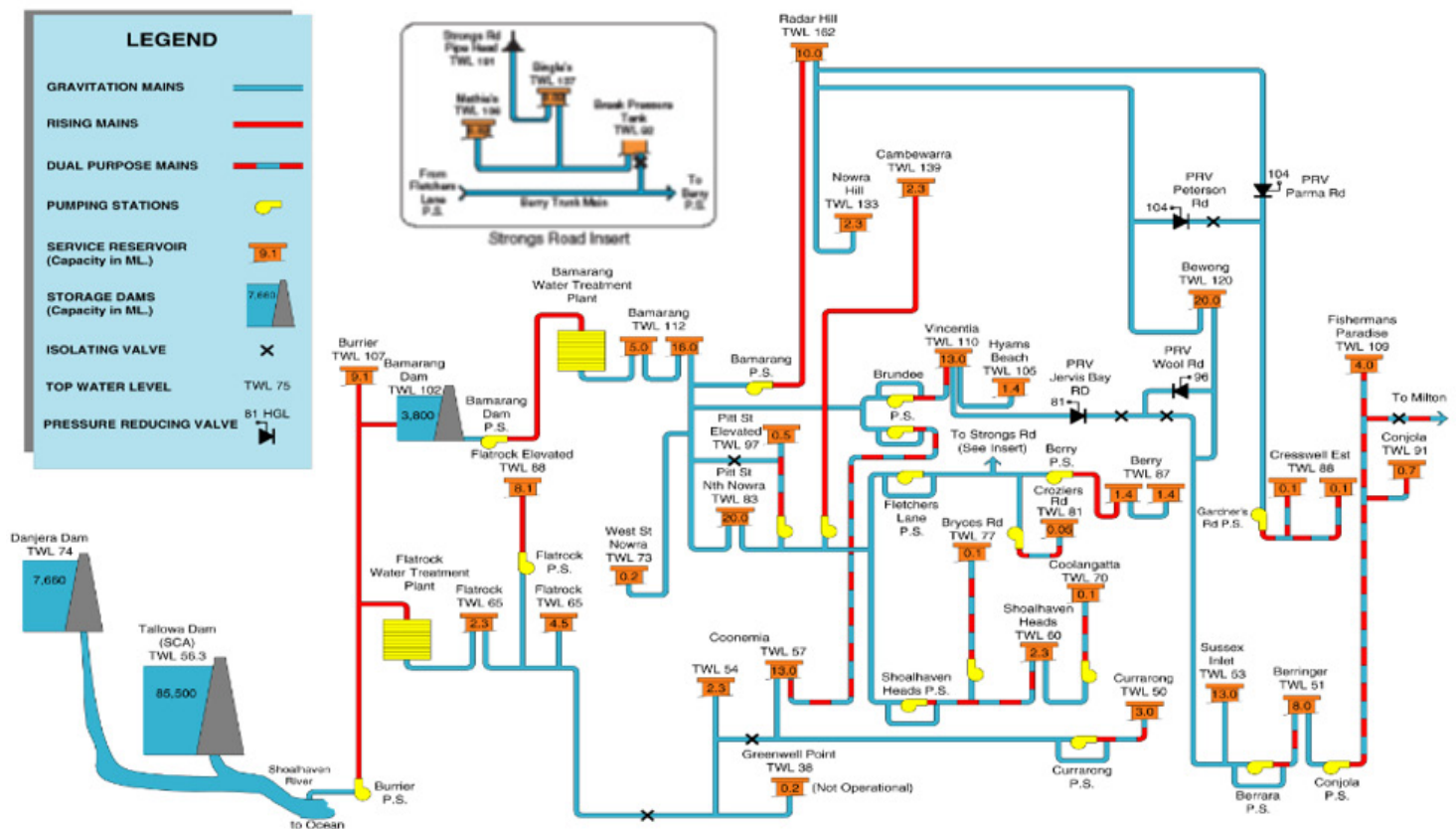
### City Wide System Water Supply Statistics

Length of water mains	1,703 km
Number of Treatment Plants	4
Number of filtered water service reservoirs	39
Total capacity of filtered water service reservoirs	192 megalitres
Number of pumping stations	26
Capacity of treatment plants per day	115 megalitres
Dams	3

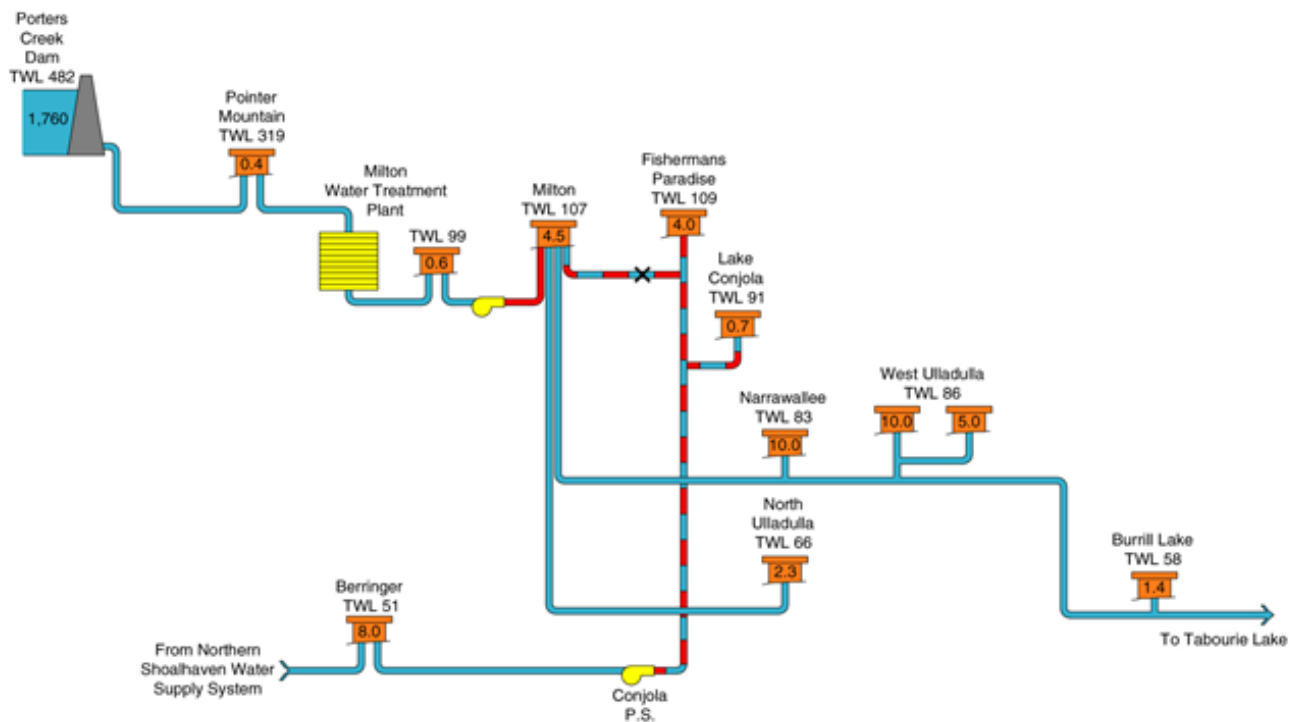
### Water Treatment Plant Details

WTP	Capacity	Processes
Bamarang	75 ML/day	alum flocculation/clarification sand filtration lime/CO2 pH correction/stabilisation chlorine disinfection fluoridation
Flatrock	28 ML/day	alum flocculation/clarification sand filtration lime/CO2 pH correction/stabilisation chlorine fluoridation
Milton	10.5 ML/day	flocculation (rapid) sand filtration chlorination lime/CO2 pH correction/stabilisation fluoridation
Bendela	0.84 ML/day	activated carbon microfiltration chlorination fluoridation

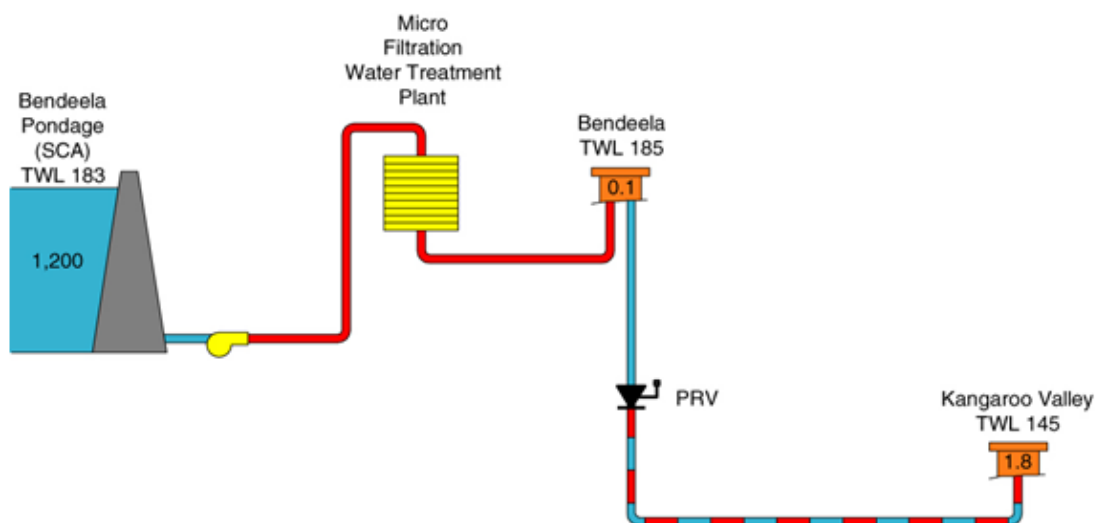
# Northern System



## Southern System



## Kangaroo Valley System



# Appendix D

## Scheme Details (Sewerage)

### **Berry Sewage Treatment Plant**

A new 3,500 EP intermittently decanted extended aeration unit was commissioned in February 2006. The treated effluent from the aeration unit is then passed through pressure sand filtration units and UV disinfection to produce high quality reclaimed water. Wet weather flows in excess of the plant's capacity are temporarily held in a 1 ML 'storm' pond for later treatment. Phosphorus reduction is available at this plant through two stage alum dosing. Reclaimed water is re-used by a local farmer (by agreement) with excess discharge to Broughton Mill Creek.

### **Shoalhaven Heads Sewage Treatment Plant**

This Plant has 2 x 4000 EP intermittently decanted extended aeration units, with an upgrade completed in 2011/12. Reclaimed water is re-used by a local turf farmer and the Shoalhaven Heads Golf Club with excess being discharged to sand dune exfiltration basins.

### **Bomaderry Sewage Treatment Plant**

The Bomaderry plant was upgraded in 2020 as part of the REMS 1B augmentation. It has a capacity of 15,750 EP (2026) and caters for a further upgrade to 23,200 EP (2041). A pipeline under the river has been constructed to connect Bomaderry to the REMS scheme via the Nowra treatment plant. Reclaimed water from this plant is then pumped to the Callala REMS storage dam for use on farms in the Terara area.

### **Nowra Sewage Treatment Plant**

The Nowra plant was upgraded as part of the REM 1B project from 21,000EP's to 37,100 EP (2026) and 49,300 EP (2041). The upgraded plants consist of SBR/MBR treatment with UV disinfection which returns 2ML per day to local farmers.

### **Culburra Beach Sewage Treatment Plant**

This plant has been operating since 1982 and underwent a major upgrading as part of the REMS scheme. The plant's two intermittently decanted extended aeration units have a total upgraded capacity of 11,000 EP with a diffused aeration system and the reclaimed water is now filtered, chlorinated UV disinfected to REMS standard for transfer to the irrigation Reclaimed Water Management Scheme. Wet weather flows in excess of the plant's capacity are temporarily held in a 12.2 ML 'storm' pond for later treatment. Phosphorus removal can be undertaken at this plant if required.

As one of the four STPs currently connected to the REMS scheme, reclaimed water which is not able to be used immediately for irrigation can be transferred to the 600 ML bulk storage dam or discharged to ocean at Penguin Head, Culburra Beach.

### **Callala Sewage Treatment Plant**

This plant has a 6,000 EP intermittently decanted extended aeration unit and was constructed to meet REMS water quality standards, which includes filtration and chlorination. Callala STP was commissioned in May 1999 and was the first plant connected to the REMS irrigation scheme in November 2001. Phosphorus removal can be undertaken at this plant if required.

As part of the REMS 1B project UV disinfection was installed at the plant to bring the discharge quality up to current reclaimed water standards.

The Callala Plant also contains the 600ML REMS bulk storage dam, pumping station and chlorination facility and a 4 ML distribution storage.

The village of Currarong was connected to the Callala plant in 2010 as a backlog sewerage scheme.

### **Vincentia Sewage Treatment Plant**

This plant has been in operation since 1973 and was augmented in 2002 to include a 6,000 EP intermittently decanted extended aeration unit (diffused air tank). During periods of higher load, the existing 4 x 2,000 EP intermittently decanted extended aeration units (pasveer channels) are progressively operated. Reclaimed water from the plant as well as the reclaimed water received from St Georges Basin STP is filtered, and chlorinated at Vincentia STP to REMS standard prior to transfer to the irrigation scheme. As part of the REMS 1B project UV disinfection was also added to the treatment process to bring the plant up to current reclaimed water standards.

Wet weather flows are temporarily held in 'storm' ponds and during extended wet weather, reclaimed water from St Georges Basin can be stored either at that plant in the 7-day emergency storage pond or the 60 ML storage pond at Vincentia plant.

In the event of extreme inflow unused reclaimed water can be release into Jervis Bay at Plantation Point. Due to the more sensitive receiving waters environment, chemical phosphorus removal will be undertaken if releases to Plantation Point are required.

### **St Georges Basin Sewage Treatment Plant**

This Plant was commissioned in November 1991 and has 2 x 8,000 EP intermittently decanted extended aeration units with 3.5 days detention at average dry weather flow (ADWF). Reclaimed water is pumped to Vincentia STP for filtration and chlorination prior to

transfer to the REMS irrigation scheme. Phosphorus removal can be undertaken at this Plant if required. Upgrades to the plant were completed in 2010 to increase wet weather storage and resolve outstanding OH&S issues.

### **Sussex Inlet Sewage Treatment Plant**

This Plant has 2 x 4000 EP intermittently decanted extended aeration units with a 1-day detention at ADWF. Reclaimed water is then passed through pressure sand filters and chlorinated prior to discharge into a sand dune exfiltration system at Cudmirrah Beach. The Plant was commissioned in August, 1990.

### **Bendalong Sewage Treatment Plant**

A new plant consisting of 2 x 2300 EP intermittently decanted extended aeration units was commissioned in May 2007. The treated effluent from the extended aeration units is disinfected with chlorine gas before being discharged under Lake Conjola to a sand dune exfiltration system on the southern side of the lake.

### **Conjola Sewage Treatment Plant**

A new plant consisting of 2 x 1350 EP intermittently decanted extended aeration units was commissioned in May 2007. The treated effluent from the extended aeration units is disinfected with chlorine gas before being discharged to a sand dune exfiltration system adjacent to the treatment plant.

### **Ulladulla Sewage Treatment Plant**

A new plant consisting of 2 x 14000 EP intermittently decanted extended aeration units was commissioned in December 2005. Treated effluent from the extended aeration units passes through an ultraviolet disinfection unit before discharge to an offshore ocean release.

The existing trickling filter and intermittently decanted extended aeration units which had been in operation respectively from 1975 and 1981 have been decommissioned.

### **Kangaroo Valley Sewage Treatment Plant**

The Kangaroo Valley sewerage system was commissioned in 2013 and provides a pressure sewer system that collects and treats wastewater from around 250 homes and businesses in the developed areas of Kangaroo Valley and part of Barrengarry.

The scheme is designed to service the permanent population of Kangaroo Valley and also meet the demands of the peak holiday population with a capacity of up to 1,400 people.

The treatment system uses membrane bioreactors and reclaimed water is utilised on an adjoining dairy farm.



## **REMS -**

### **Northern REclaimed Water Management Scheme**

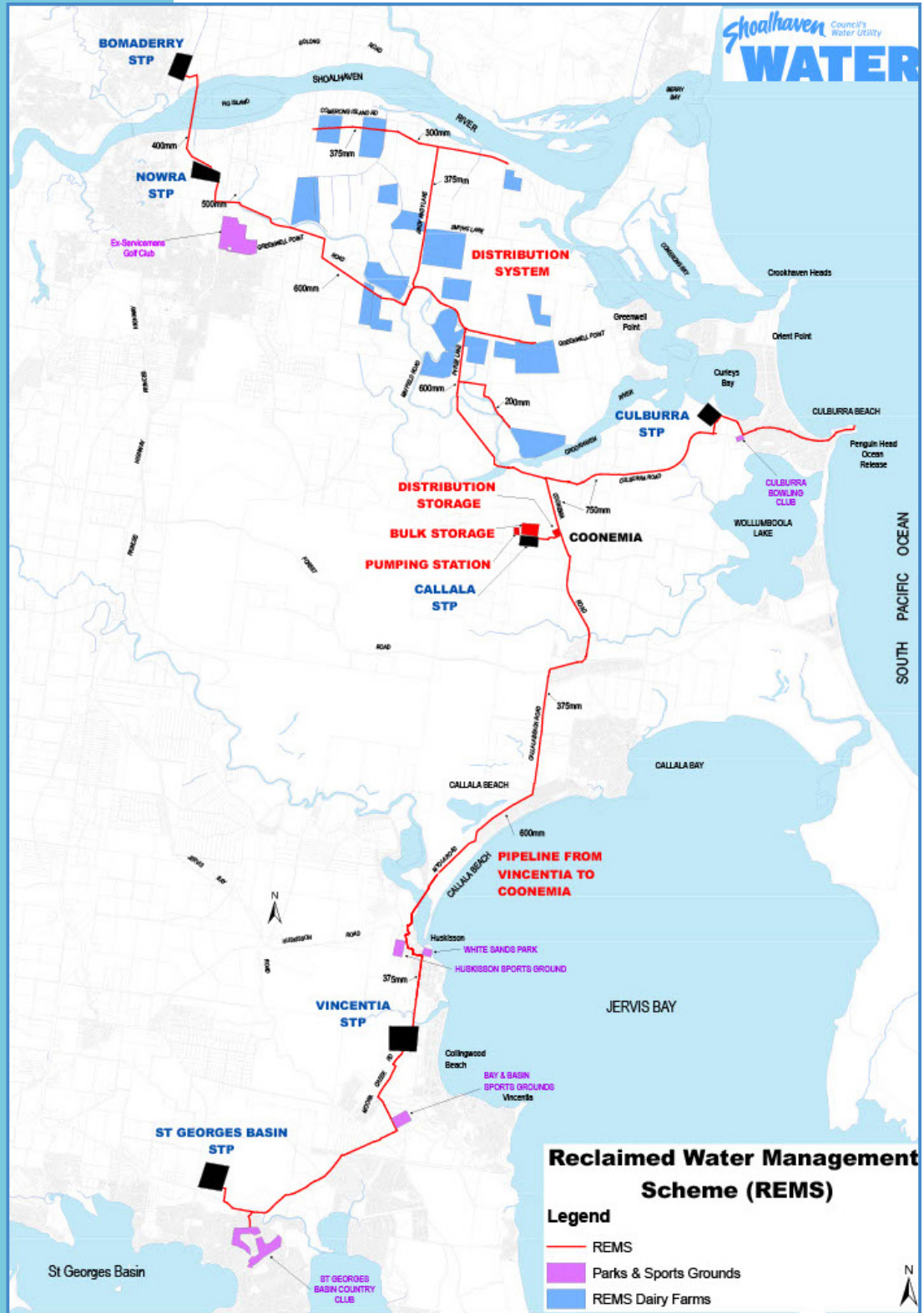
Stage 1A of the scheme was commissioned in November 2001 and consists of collecting reclaimed water from St Georges Basin, Vincentia, Callala and Culburra Sewage Treatment Plants and utilising that water for irrigation to farms in the Terara area and a golf course, sporting field and parklands. Water not immediately used by farmers is stored in a 600 ML bulk storage dam at Coonemia (Callala Treatment Plant). Excess reclaimed water during extended wet weather periods is discharged to an ocean release at Penguin Head.

Stage 1B was commissioned in 2019 and added the reclaimed water from the upgraded Nowra and Bomaderry WwTPs to the REMS distribution system, significantly increasing the daily reclaimed water supply managed by the Scheme. The upgraded Bomaderry and Nowra treatment plants are now connected via a water transfer pipeline under the Shoalhaven River.

In addition, Stage 1B included new infrastructure to increase disinfection performance at the Callala, Culburra and Vincentia WwTP in line with current water recycling guidelines.

Stage 2.0 is now in planning with the construction of a 900ML Storage dam adjacent to the existing dam at Callala STP.

## Reclaimed Water Management Scheme



# Attachment

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## 20 Year Financial Projections

	2020/21 Budget Budget Yr 2020/21	2021/22 Budget Year 2 2021/22	2022/23 Budget Year 3 2022/23	2023/24 Budget Year 4 2023/24	2024/25 Budget Year 5 2024/25	2025/26 Budget Year 6 2025/26	2026/27 Budget Year 7 2026/27	2027/28 Budget Year 8 2027/28	2028/29 Budget Year 9 2028/29	2029/30 Budget Year 10 2029/30
<b>Water 20 Yr</b>										
<b>Operating Income</b>	<b>Usage \$1.75 &amp; Availability \$83</b>									
Residential & Non Residential Availability Charges	4,353,306	4,436,238	4,505,177	4,574,551	4,644,365	4,714,623	4,785,330	4,907,831	5,030,996	5,154,832
Residential & Non Residential Usage Charges	18,499,086	18,849,313	19,564,544	20,158,483	20,771,820	21,405,218	22,059,366	22,734,975	23,432,781	24,153,548
Interest Income	1,088,901	556,000	357,000	210,000	115,000	132,000	149,000	155,000	157,000	177,000
Other Income	3,382,903	3,658,071	3,673,375	3,686,393	3,716,474	3,805,005	3,895,677	3,988,545	4,083,662	4,181,081
Grants for Acquisition of Assets	3,100,000	0	0	0	0	0	0	0	0	0
Grants for Pensioner Rebates	523,800	529,925	536,341	542,849	549,451	556,148	562,941	569,833	576,825	583,917
Developer Charges	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
<b>Total Operating Income</b>	<b>31,697,796</b>	<b>28,779,548</b>	<b>29,386,437</b>	<b>29,922,276</b>	<b>30,547,110</b>	<b>31,362,993</b>	<b>32,202,315</b>	<b>33,106,184</b>	<b>34,031,263</b>	<b>35,000,378</b>
<b>Operating Expenditure</b>										
Corporate Services	5,877,470	6,024,407	6,175,017	6,329,392	6,487,627	6,649,818	6,816,063	6,986,465	7,161,127	7,340,155
Management Expenses	822,580	843,144	864,223	885,828	907,974	930,673	953,940	977,789	1,002,233	1,027,289
Customer Services	2,702,478	2,770,040	2,839,291	2,910,273	2,983,030	3,057,606	3,134,046	3,212,397	3,292,707	3,375,025
O & M - Dams & Weirs	385,603	394,472	403,545	412,826	422,321	432,035	441,971	452,137	462,536	473,174
O & M - Mains	2,977,591	3,046,076	3,116,135	3,187,806	3,261,126	3,336,132	3,412,863	3,491,359	3,571,660	3,653,808
O & M - Reservoirs	333,726	341,402	349,254	357,287	365,504	373,911	382,511	391,308	400,309	409,516
O & M - Pumping Stations	1,571,999	1,608,155	1,645,142	1,682,981	1,721,689	1,761,288	1,801,798	1,843,239	1,885,634	1,929,003
O & M -Treatment	2,309,111	2,362,221	2,416,552	2,472,133	2,528,992	2,587,159	2,646,663	2,707,536	2,769,810	2,833,515
O & M -Other	559,419	571,136	583,123	595,385	607,930	620,764	633,892	647,322	661,062	675,117
Major Maintenance	0	0	0	0	0	0	0	0	0	0
Plant Operating	1,077,406	1,104,341	1,131,950	1,160,248	1,189,255	1,218,986	1,249,461	1,280,697	1,312,715	1,345,532
Depreciation Expense	9,756,400	9,951,528	10,150,559	10,353,570	10,560,641	10,771,854	10,987,291	11,207,037	11,431,178	11,659,801
Interest on Loans	0	0	0	0	0	0	0	0	0	0
<b>Total Operating Expenditure</b>	<b>28,373,782</b>	<b>29,016,920</b>	<b>29,674,790</b>	<b>30,347,730</b>	<b>31,036,090</b>	<b>31,740,224</b>	<b>32,460,499</b>	<b>33,197,287</b>	<b>33,950,969</b>	<b>34,721,936</b>
<b>Operating Result</b>	<b>3,324,013</b>	<b>-237,373</b>	<b>-288,353</b>	<b>-425,454</b>	<b>-488,980</b>	<b>-377,231</b>	<b>-258,184</b>	<b>-91,103</b>	<b>80,295</b>	<b>278,443</b>
<b>Non Operating Income</b>										
Assets Sold	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
<b>Total - Non Operating Income</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>
<b>Non Operating Expenditure (excl. WIP)</b>										
New Works Growth	4,566,000	11,016,534	18,728,923	13,024,996	7,878,562	1,159,274	2,194,052	2,894,006	1,266,770	1,304,773
New Works Asset Enhancement	6,992,000	3,496,850	2,753,036	2,562,445	388,301	3,298,135	3,397,079	3,498,991	3,603,961	3,712,080
Renewals/Replacement Works	6,431,000	5,099,942	1,206,243	3,318,426	3,415,919	3,518,397	3,623,949	3,732,667	4,769,389	3,959,987
Chargeable Private Works	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Other Assets	4,920,812	2,560,000	2,121,800	2,185,454	2,251,018	2,318,548	2,388,105	2,459,748	2,533,540	2,609,546
<b>Total - Non Operating Expenditure</b>	<b>22,959,812</b>	<b>22,224,826</b>	<b>24,863,047</b>	<b>21,143,957</b>	<b>13,990,075</b>	<b>10,352,318</b>	<b>11,662,888</b>	<b>12,646,906</b>	<b>12,236,999</b>	<b>11,651,625</b>
<b>Other Income</b>										
Clearing - Fitters & Electrical Engineers	2,250,770	2,307,040	2,364,716	2,423,834	2,484,429	2,546,540	2,610,204	2,675,459	2,742,345	2,810,904
<b>Total Other Income</b>	<b>2,250,770</b>	<b>2,307,040</b>	<b>2,364,716</b>	<b>2,423,834</b>	<b>2,484,429</b>	<b>2,546,540</b>	<b>2,610,204</b>	<b>2,675,459</b>	<b>2,742,345</b>	<b>2,810,904</b>
<b>Other Expenses</b>										
Clearing Expenses - Fitters & Electrical Engineers	2,094,851	2,147,222	2,200,902	2,255,925	2,312,323	2,370,131	2,429,385	2,490,119	2,552,372	2,616,181
Dividend Paid	712,000	245,966	112,000	112,000	112,000	112,000	112,000	112,000	112,000	191,134
<b>Total Other Expenses</b>	<b>2,806,851</b>	<b>2,393,188</b>	<b>2,312,902</b>	<b>2,367,925</b>	<b>2,424,323</b>	<b>2,482,131</b>	<b>2,541,385</b>	<b>2,602,119</b>	<b>2,664,372</b>	<b>2,807,315</b>
<b>Budget Result Before Adjustment</b>	<b>-20,071,879</b>	<b>-22,428,347</b>	<b>-24,979,587</b>	<b>-21,393,503</b>	<b>-14,298,949</b>	<b>-10,545,140</b>	<b>-11,732,253</b>	<b>-12,544,669</b>	<b>-11,958,731</b>	<b>-11,249,594</b>
<b>Cash Adjustments</b>										
Loan Repayments - Bank	0	0	0	0	0	0	0	0	0	0
Loan Funds Utilised	0	0	0	0	0	0	0	0	0	0
Loan Repayments Received	988,824	1,051,897	1,118,993	1,190,369	0	0	0	0	0	0
Revotes	0	0	0	0	0	0	0	0	0	0
Depreciation	10,247,888	10,452,846	10,661,903	10,875,141	11,092,644	11,314,496	11,540,786	11,771,602	12,007,034	12,247,175
<b>Cash Flow</b>	<b>-8,835,167</b>	<b>-10,923,605</b>	<b>-13,198,691</b>	<b>-9,327,993</b>	<b>-3,206,305</b>	<b>769,356</b>	<b>-191,466</b>	<b>-773,067</b>	<b>48,303</b>	<b>997,581</b>
<b>Opening Cash Balance</b>	<b>46,870,084</b>	<b>38,034,917</b>	<b>27,111,312</b>	<b>13,912,622</b>	<b>4,584,629</b>	<b>1,378,323</b>	<b>2,147,680</b>	<b>1,956,213</b>	<b>1,183,146</b>	<b>1,231,449</b>
<b>Closing Cash Position</b>	<b>38,034,917</b>	<b>27,111,312</b>	<b>13,912,622</b>	<b>4,584,629</b>	<b>1,378,323</b>	<b>2,147,680</b>	<b>1,956,213</b>	<b>1,183,146</b>	<b>1,231,449</b>	<b>2,229,030</b>



Water 20 Yr	Year 11 2030/31	Year 12 2031/32	Year 13 2032/33	Year 14 2033/34	Year 15 2034/35	Year 16 2035/36	Year 17 2036/37	Year 18 2037/38	Year 19 2038/39	Year 20 2039/40
<b>Operating Income</b>										
Residential & Non Residential Availability Charges	5,279,345	5,404,540	5,530,424	5,657,003	5,784,283	5,912,271	6,040,973	6,170,395	6,300,544	6,431,427
Residential & Non Residential Usage Charges	24,898,084	25,667,149	26,461,646	27,282,434	28,130,419	29,006,540	29,911,770	30,847,116	31,813,620	32,812,362
Interest Income	197,000	218,000	233,000	255,000	277,000	300,000	324,000	349,000	375,000	375,000
Other Income	4,280,859	4,383,054	4,487,723	4,594,928	4,704,729	4,817,190	4,932,375	5,050,351	5,171,186	5,171,186
Grants for Acquisition of Assets										
Grants for Pensioner Rebates	591,113	598,414	605,820	613,335	620,959	628,695	636,543	644,507	652,588	660,787
Developer Charges	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
<b>Total Operating Income</b>	<b>35,996,382</b>	<b>37,021,156</b>	<b>38,068,614</b>	<b>39,152,700</b>	<b>40,267,390</b>	<b>41,414,696</b>	<b>42,595,661</b>	<b>43,811,369</b>	<b>45,062,937</b>	<b>46,200,761</b>
<b>Operating Expenditure</b>										
Corporate Services	7,523,659	7,711,750	7,904,544	8,102,157	8,304,711	8,512,329	8,725,137	8,943,266	9,166,847	9,396,019
Management Expenses	1,052,971	1,079,296	1,106,278	1,133,935	1,162,283	1,191,340	1,221,124	1,251,652	1,282,943	1,315,017
Customer Services	3,459,400	3,545,885	3,634,532	3,725,396	3,818,531	3,913,994	4,011,844	4,112,140	4,214,943	4,320,317
O & M - Dams & Weirs	484,057	495,190	506,580	518,231	530,150	542,344	554,818	567,579	580,633	593,988
O & M - Mains	3,737,846	3,823,816	3,911,784	4,001,735	4,093,774	4,187,931	4,284,254	4,382,792	4,483,596	4,586,718
O & M - Reservoirs	418,935	428,570	438,427	448,511	458,827	469,380	480,175	491,220	502,518	514,075
O & M - Pumping Stations	1,973,370	2,018,758	2,065,189	2,112,689	2,161,280	2,210,990	2,261,843	2,313,865	2,367,084	2,421,527
O & M - Treatment	2,898,686	2,965,356	3,033,559	3,103,331	3,174,708	3,247,726	3,322,424	3,398,839	3,477,013	3,556,984
O & M - Other	689,495	704,205	719,252	734,646	750,393	766,503	782,983	799,842	817,090	834,733
Major Maintenance	0	0	0	0	0	0	0	0	0	0
Plant Operating	1,379,171	1,413,650	1,448,991	1,485,216	1,522,346	1,560,405	1,599,415	1,639,401	1,680,386	1,722,395
Depreciation Expense	11,892,997	12,130,857	12,373,474	12,620,944	12,873,363	13,130,830	13,393,446	13,661,315	13,934,542	14,213,233
Interest on Loans	0	0	0	0	0	0	0	0	0	0
<b>Total Operating Expenditure</b>	<b>35,510,588</b>	<b>36,317,333</b>	<b>37,142,591</b>	<b>37,986,790</b>	<b>38,850,368</b>	<b>39,733,772</b>	<b>40,637,463</b>	<b>41,561,910</b>	<b>42,507,594</b>	<b>43,475,006</b>
<b>Operating Result</b>	<b>485,794</b>	<b>703,823</b>	<b>926,023</b>	<b>1,165,910</b>	<b>1,417,023</b>	<b>1,680,923</b>	<b>1,958,198</b>	<b>2,249,458</b>	<b>2,555,343</b>	<b>2,725,755</b>
<b>Non Operating Income</b>										
Assets Sold	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
<b>Total - Non Operating Income</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>
<b>Non Operating Expenditure (excl. WIP)</b>										
New Works Growth	1,343,916	1,384,234	1,710,913	1,468,534	1,512,590	1,557,967	1,604,706	1,652,848	1,702,433	1,753,506
New Works Asset Enhancement	3,823,442	3,938,145	4,056,290	4,177,978	4,303,318	4,432,417	4,565,390	4,702,352	4,843,422	4,988,725
Renewals/Replacement Works	4,078,786	4,201,150	4,327,184	4,457,000	4,590,710	4,728,431	4,870,284	5,016,393	5,166,884	5,321,891
Chargeable Private Works	67,196	69,212	71,288	73,427	75,629	77,898	80,235	82,642	85,122	87,675
Other Assets	2,687,833	2,768,468	2,851,522	2,937,067	3,025,179	3,115,935	3,209,413	3,305,695	3,404,866	3,507,012
<b>Total - Non Operating Expenditure</b>	<b>12,001,173</b>	<b>12,361,209</b>	<b>13,017,197</b>	<b>13,114,006</b>	<b>13,507,426</b>	<b>13,912,648</b>	<b>14,330,028</b>	<b>14,759,930</b>	<b>15,202,727</b>	<b>15,658,809</b>
<b>Other Income</b>										
Clearing - Fitters & Electrical Engineers	2,881,176	2,953,206	3,027,036	3,102,712	3,180,280	3,259,787	3,341,281	3,424,813	3,510,434	3,598,194
<b>Total Other Income</b>	<b>2,881,176</b>	<b>2,953,206</b>	<b>3,027,036</b>	<b>3,102,712</b>	<b>3,180,280</b>	<b>3,259,787</b>	<b>3,341,281</b>	<b>3,424,813</b>	<b>3,510,434</b>	<b>3,598,194</b>
<b>Other Expenses</b>										
Clearing Expenses - Fitters & Electrical Engineers	2,681,586	2,748,626	2,817,341	2,887,775	2,959,989	3,033,968	3,109,818	3,187,563	3,267,252	3,348,933
Dividend Paid	292,582	398,692	503,241	582,801	668,597	758,367	852,660	951,682	1,055,648	0
<b>Total Other Expenses</b>	<b>2,974,168</b>	<b>3,147,318</b>	<b>3,320,582</b>	<b>3,470,576</b>	<b>3,628,586</b>	<b>3,792,335</b>	<b>3,962,477</b>	<b>4,139,245</b>	<b>4,322,900</b>	<b>3,348,933</b>
<b>Budget Result Before Adjustment</b>	<b>-11,488,371</b>	<b>-11,731,498</b>	<b>-12,264,721</b>	<b>-12,195,960</b>	<b>-12,418,689</b>	<b>-12,644,273</b>	<b>-12,873,026</b>	<b>-13,104,903</b>	<b>-13,339,850</b>	<b>-12,563,793</b>
<b>Cash Adjustments</b>										
Loan Repayments - Bank	0	0	0	0	0	0	0	0	0	0
Loan Funds Utilised	0	0	0	0	0	0	0	0	0	0
Loan Repayments Received	0	0	0	0	0	0	0	0	0	0
Revotes	12,492,118	12,741,961	12,996,800	13,256,736	13,521,871	13,792,308	14,068,154	14,349,517	14,636,508	14,929,238
Depreciation	1,003,747	1,010,463	732,079	1,060,776	1,103,181	1,148,035	1,195,128	1,244,614	1,296,657	2,365,445
<b>Cash Flow</b>	<b>2,229,030</b>	<b>3,232,777</b>	<b>4,243,240</b>	<b>4,975,319</b>	<b>6,036,095</b>	<b>7,139,276</b>	<b>8,287,311</b>	<b>9,482,440</b>	<b>10,727,054</b>	<b>12,023,711</b>
<b>Opening Cash Balance</b>	<b>3,232,777</b>	<b>4,243,240</b>	<b>4,975,319</b>	<b>6,036,095</b>	<b>7,139,276</b>	<b>8,287,311</b>	<b>9,482,440</b>	<b>10,727,054</b>	<b>12,023,711</b>	<b>14,389,156</b>
<b>Closing Cash Position</b>										

Wastewater 20 Yr	Year 1 2020/21	Year 2 2021/22	Year 3 2022/23	Year 4 2023/24	Year 5 2024/25	Year 6 2025/26	Year 7 2026/27	Year 8 2027/28	Year 9 2028/29	Year 10 2029/30
<b>Operating Income</b>	<b>Av \$876, Usage \$1.80</b>									
Residential & Non Residential Access Charges	44,104,200	45,018,632	45,937,845	46,809,346	47,733,657	48,662,595	49,598,197	50,583,212	51,575,165	52,572,096
Residential & Non Residential Usage Charges	2,569,321	2,755,258	2,918,684	3,086,827	3,219,292	3,372,355	3,526,017	3,680,280	3,835,146	3,990,617
Trade Waste Charges	400,400	410,410	422,722	435,404	448,466	461,920	475,778	490,051	504,753	519,895
Extra Charges	1,483,415	1,486,273	1,527,814	1,559,995	1,592,827	1,626,323	1,660,495	1,695,356	1,730,918	1,767,196
Interest On Investments	370,000	273,000	114,000	127,000	152,000	181,000	252,000	384,000	460,000	535,000
Other Revenues	1,858,857	1,901,611	1,945,348	1,990,091	2,035,863	2,082,688	2,130,590	2,179,593	2,229,724	2,281,007
Grants for acquisition of assets	1,300,000	0	0	0	0	0	0	0	0	0
Grants for pensioner rebates	488,077	491,250	494,443	497,657	500,891	504,147	507,424	510,722	514,042	517,383
Developer Charges	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
<b>Total Operating Income</b>	<b>53,304,270</b>	<b>53,096,434</b>	<b>54,110,856</b>	<b>55,236,320</b>	<b>56,432,995</b>	<b>57,641,027</b>	<b>58,898,500</b>	<b>60,273,214</b>	<b>61,599,748</b>	<b>62,933,195</b>
<b>Operating Expenditure</b>										
Management Expenses (Incl Admin charge to General Fund)	9,085,534	9,294,501	9,508,275	9,726,965	9,950,685	10,179,551	10,413,681	10,653,195	10,898,219	11,148,878
O & M - Mains	2,871,629	2,937,676	3,005,243	3,074,364	3,145,074	3,217,411	3,291,411	3,367,114	3,444,557	3,523,782
O & M - Pumping Stations	4,588,841	4,694,384	4,802,355	4,912,809	5,025,804	5,141,397	5,259,650	5,380,622	5,504,376	5,630,976
O & M - Treatment	7,373,427	7,543,016	7,716,505	7,893,985	8,075,546	8,261,284	8,451,294	8,645,673	8,844,524	9,047,948
O & M - Other	979,299	1,001,823	1,024,865	1,048,437	1,072,551	1,097,219	1,122,455	1,148,272	1,174,682	1,201,700
Sanitary Services	1,026,923	1,050,542	1,074,705	1,099,423	1,124,710	1,150,578	1,177,041	1,204,113	1,231,808	1,260,140
Major Maintenance	0	0	0	0	0	0	0	0	0	0
Plant Operating	1,167,300	1,194,148	1,221,613	1,249,710	1,278,454	1,307,858	1,337,939	1,368,712	1,400,192	1,432,396
Depreciation Expense	12,480,800	12,730,416	12,985,024	13,244,725	13,509,619	13,779,812	14,055,408	14,336,516	14,623,246	14,915,711
Interest Expense	4,311,598	3,875,300	3,487,920	3,174,814	2,906,629	2,683,440	2,457,021	2,245,198	2,047,969	1,860,725
Other Expense	0	0	0	0	0	0	0	0	0	0
<b>Total Operating Expenditure</b>	<b>43,885,351</b>	<b>44,321,807</b>	<b>44,826,506</b>	<b>45,425,232</b>	<b>46,089,072</b>	<b>46,818,551</b>	<b>47,565,900</b>	<b>48,349,415</b>	<b>49,169,573</b>	<b>50,022,256</b>
<b>Operating Result</b>	<b>9,418,919</b>	<b>8,774,627</b>	<b>9,284,350</b>	<b>9,811,088</b>	<b>10,343,923</b>	<b>10,822,476</b>	<b>11,332,600</b>	<b>11,923,799</b>	<b>12,430,175</b>	<b>12,910,938</b>
<b>Non Operating Income</b>										
Assets Sold	140,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
<b>Total - Non Operating Income</b>	<b>140,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>
<b>Non Operating Expenditure (excl.WIP)</b>										
New Works Growth	9,300,000	7,786,459	9,352,845	12,197,957	7,395,718	7,929,435	7,459,245	2,767,216	6,397,189	2,931,825
New Works Asset Enhancement	6,630,000	1,871,455	3,353,858	540,900	3,596,001	4,805,191	3,755,294	6,327,701	6,517,532	6,713,058
Renewals/Replacement Works	2,860,000	2,955,258	4,094,721	2,125,354	4,721,509	3,703,881	3,814,997	3,929,447	4,047,330	8,083,070
Chargeable Private Works	150,000	154,500	159,135	163,909	168,826	173,891	179,108	184,481	190,016	195,716
Other Assets	950,000	1,133,000	1,186,990	1,202,000	1,238,060	1,275,201	1,313,458	1,352,861	1,393,447	1,435,251
<b>Total - Non Operating Expenditure</b>	<b>19,890,000</b>	<b>13,900,672</b>	<b>18,127,549</b>	<b>16,230,120</b>	<b>17,120,114</b>	<b>17,887,599</b>	<b>16,522,102</b>	<b>14,561,706</b>	<b>18,545,514</b>	<b>19,358,920</b>
<b>Other Expenses</b>										
Dividend Paid	1,483,963	1,479,210	1,482,269	1,485,334	1,488,406	1,491,484	1,494,568	1,497,660	1,500,757	1,503,861
<b>Total Other Expenses</b>	<b>1,483,963</b>	<b>1,479,210</b>	<b>1,482,269</b>	<b>1,485,334</b>	<b>1,488,406</b>	<b>1,491,484</b>	<b>1,494,568</b>	<b>1,497,660</b>	<b>1,500,757</b>	<b>1,503,861</b>
<b>Budget Result Before Adjustment</b>	<b>-11,815,044</b>	<b>-6,485,255</b>	<b>-10,205,468</b>	<b>-7,784,366</b>	<b>-8,144,597</b>	<b>-8,436,607</b>	<b>-6,564,071</b>	<b>-4,015,567</b>	<b>-7,496,096</b>	<b>-7,831,843</b>
<b>Cash Adjustments</b>										
Loan Repayments - Bank	8,164,120	7,562,268	6,534,522	6,023,230	5,044,692	5,267,881	5,159,927	4,967,806	4,761,201	4,948,445
Loan Funds Utilised	0	0	0	0	0	0	0	0	0	0
Revotes										
Depreciation	12,997,400	13,322,335	13,655,393	13,996,778	14,346,698	14,705,365	15,072,999	15,449,824	15,836,070	16,231,972
<b>Cash Flow</b>	<b>-6,981,764</b>	<b>-725,188</b>	<b>-3,084,596</b>	<b>189,182</b>	<b>1,157,409</b>	<b>1,000,877</b>	<b>3,349,002</b>	<b>6,466,452</b>	<b>3,578,773</b>	<b>3,451,684</b>
<b>Opening Cash Balance</b>	<b>19,575,699</b>	<b>12,593,935</b>	<b>11,868,746</b>	<b>8,784,150</b>	<b>8,973,332</b>	<b>10,130,741</b>	<b>11,131,619</b>	<b>14,480,620</b>	<b>20,947,072</b>	<b>24,525,844</b>
<b>Closing Cash Position</b>	<b>12,593,935</b>	<b>11,868,746</b>	<b>8,784,150</b>	<b>8,973,332</b>	<b>10,130,741</b>	<b>11,131,619</b>	<b>14,480,620</b>	<b>20,947,072</b>	<b>24,525,844</b>	<b>27,977,528</b>



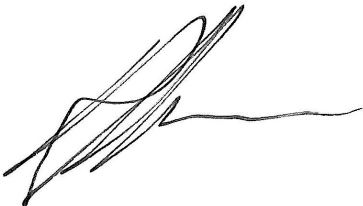
	Year 11 2030/31	Year 12 2031/32	Year 13 2032/33	Year 14 2033/34	Year 15 2034/35	Year 16 2035/36	Year 17 2036/37	Year 18 2037/38	Year 19 2038/39	Year 20 2039/40
<b>Wastewater 20 Yr</b>										
<b>Operating Income</b>										
Residential & Non Residential Access Charges	53,574,044	54,630,158	55,691,571	56,758,325	57,879,873	59,007,049	60,139,900	61,328,182	62,522,433	63,722,699
Residential & Non Residential Usage Charges	4,146,695	4,303,381	4,460,676	4,618,584	4,777,106	4,936,244	5,095,998	5,256,373	5,417,370	5,578,989
Trade Waste Charges	535,492	551,557	568,103	585,147	602,701	620,782	639,405	658,588	678,345	698,696
Extra Charges	1,804,202	1,841,951	1,880,455	1,919,728	1,959,786	2,000,642	2,042,312	2,084,809	2,128,149	2,172,348
Interest On Investments	453,000	385,000	428,000	307,000	190,000	164,000	175,000	295,000	474,000	658,000
Other Revenues	2,333,471	2,387,140	2,442,045	2,498,212	2,555,670	2,614,451	2,674,583	2,736,099	2,799,029	2,863,407
Grants for acquisition of assets	0	0	0	0	0	0	0	0	0	0
Grants for pensioner rebates	520,746	524,131	527,538	530,967	534,418	537,892	541,388	544,907	548,449	552,014
Developer Charges	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
<b>Total Operating Income</b>	<b>64,117,649</b>	<b>65,373,317</b>	<b>66,748,388</b>	<b>67,967,963</b>	<b>69,249,554</b>	<b>70,631,060</b>	<b>72,058,586</b>	<b>73,653,957</b>	<b>75,317,775</b>	<b>76,996,153</b>
<b>Operating Expenditure</b>										
Management Expenses (Incl Admin charge to General Fund)	11,405,302	11,667,624	11,935,979	12,210,507	12,491,349	12,778,650	13,072,559	13,373,227	13,680,812	13,995,470
O & M - Mains	3,604,829	3,687,740	3,772,558	3,859,327	3,948,091	4,038,898	4,131,792	4,226,823	4,324,040	4,423,493
O & M - Pumping Stations	5,760,489	5,892,980	6,028,519	6,167,175	6,309,020	6,454,127	6,602,572	6,754,431	6,909,783	7,068,708
O & M - Treatment	9,256,051	9,468,940	9,686,725	9,909,520	10,137,439	10,370,600	10,609,124	10,853,134	11,102,756	11,358,119
O & M - Other	1,229,339	1,257,614	1,286,539	1,316,129	1,346,400	1,377,367	1,409,047	1,441,455	1,474,608	1,508,524
Sanitary Services	1,289,123	1,318,773	1,349,104	1,380,134	1,411,877	1,444,350	1,477,570	1,511,554	1,546,320	1,581,885
Major Maintenance	0	0	0	0	0	0	0	0	0	0
Plant Operating	1,465,341	1,499,044	1,533,522	1,568,793	1,604,876	1,641,788	1,679,549	1,718,178	1,757,697	1,798,124
Depreciation Expense	15,214,026	15,518,306	15,828,672	16,145,246	16,468,151	16,797,514	17,133,464	17,476,133	17,825,656	18,182,169
Interest Expense	1,666,117	1,463,856	1,253,641	1,035,159	808,084	572,080	326,793	102,951	0	0
Other Expense	0	0	0	0	0	0	0	0	0	0
<b>Total Operating Expenditure</b>	<b>50,890,617</b>	<b>51,774,877</b>	<b>52,675,260</b>	<b>53,591,990</b>	<b>54,525,286</b>	<b>55,475,373</b>	<b>56,442,470</b>	<b>57,457,888</b>	<b>58,521,672</b>	<b>59,616,493</b>
<b>Operating Result</b>	<b>13,227,033</b>	<b>13,598,440</b>	<b>14,073,128</b>	<b>14,375,973</b>	<b>14,724,268</b>	<b>15,155,687</b>	<b>15,616,117</b>	<b>16,196,070</b>	<b>16,696,103</b>	<b>17,079,659</b>
<b>Non Operating Income</b>										
Assets Sold	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
<b>Total - Non Operating Income</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>	<b>120,000</b>
<b>Non Operating Expenditure (excl.WIP)</b>										
New Works Growth	12,243,078	9,015,515	6,490,064	15,052,471	10,663,758	12,541,638	9,315,321	7,520,457	5,192,421	5,348,193
New Works Asset Enhancement	6,981,646	9,890,351	7,335,540	7,555,606	7,782,274	6,457,775	8,256,215	8,503,901	12,163,884	12,528,801
Renewals/Replacement Works	6,981,646	7,191,095	7,406,828	7,629,033	7,857,904	8,093,641	8,336,450	8,586,543	8,844,140	9,109,464
Chargeable Private Works	201,587	207,635	213,864	220,280	226,888	233,695	240,706	247,927	255,365	263,026
Other Assets	1,478,308	1,522,657	1,568,337	1,615,387	1,663,849	1,713,764	1,765,177	1,818,132	1,872,676	1,928,857
<b>Total - Non Operating Expenditure</b>	<b>27,886,265</b>	<b>27,827,253</b>	<b>23,014,633</b>	<b>32,072,777</b>	<b>28,194,673</b>	<b>29,040,513</b>	<b>27,913,869</b>	<b>26,676,960</b>	<b>28,328,486</b>	<b>29,178,341</b>
<b>Other Expenses</b>										
Dividend Paid	1,506,972	1,510,089	1,513,213	1,516,344	1,519,481	1,522,624	1,525,775	1,528,931	1,532,095	1,535,265
<b>Total Other Expenses</b>	<b>1,506,972</b>	<b>1,510,089</b>	<b>1,513,213</b>	<b>1,516,344</b>	<b>1,519,481</b>	<b>1,522,624</b>	<b>1,525,775</b>	<b>1,528,931</b>	<b>1,532,095</b>	<b>1,535,265</b>
<b>Budget Result Before Adjustment</b>	<b>-16,046,204</b>	<b>-15,618,902</b>	<b>-10,334,718</b>	<b>-19,093,147</b>	<b>-14,869,885</b>	<b>-15,287,451</b>	<b>-13,703,527</b>	<b>-11,889,822</b>	<b>-13,044,478</b>	<b>-13,513,947</b>
<b>Cash Adjustments</b>										
Loan Repayments - Bank	5,143,053	5,345,314	5,555,529	5,774,011	6,001,086	6,237,091	6,482,377	3,517,455	0	0
Loan Funds Utilised	0	0	0	0	0	0	0	0	0	0
Revotes										
Depreciation	16,637,771	17,053,715	17,480,058	17,917,059	18,364,986	18,824,111	19,294,713	19,777,081	20,271,508	20,778,296
<b>Cash Flow</b>	<b>-4,551,486</b>	<b>-3,910,501</b>	<b>1,589,811</b>	<b>-6,950,099</b>	<b>-2,505,985</b>	<b>-2,700,431</b>	<b>-891,190</b>	<b>4,369,805</b>	<b>7,227,030</b>	<b>7,264,349</b>
<b>Opening Cash Balance</b>	<b>27,977,528</b>	<b>23,426,042</b>	<b>19,515,541</b>	<b>21,105,352</b>	<b>14,155,253</b>	<b>11,649,267</b>	<b>8,948,836</b>	<b>8,057,646</b>	<b>12,427,451</b>	<b>19,654,481</b>
<b>Closing Cash Position</b>	<b>23,426,042</b>	<b>19,515,541</b>	<b>21,105,352</b>	<b>14,155,253</b>	<b>11,649,267</b>	<b>8,948,836</b>	<b>8,057,646</b>	<b>12,427,451</b>	<b>19,654,481</b>	<b>26,918,830</b>

**Document Control**

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Reviewed by: **Shoalhaven Water Executive Team**  
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