NSW Public Works

Nambucca Valley Council

Strategic Plan

Water and sewerage

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Cover photo: Nambucca Heads

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Executive Summary

A Local Water Utility's (LWU) Strategic Plan is its 30-year strategy for the provision of appropriate, affordable, cost-effective, and sustainable urban water services that meet community needs and protect public health and the environment. The key outcomes of a LWU's Strategy are a 30year Total Asset Management Plan (TAMP), a 30year financial plan and a drought and emergency response contingency plan (DERCP).

Nambucca Local Government Area

Nambucca Shire is located on the Mid North Coast of NSW. The urban centres within Nambucca Shire are Nambucca Heads, Valla Beach, Hyland Park, Macksville, Scotts Head and Bowraville. Nambucca Valley Council (NVC) is the local government authority for the Nambucca Shire. The Nambucca Shire area covers approximately 1,491 km2, of which more than 40% is national parks or state forest. The coastal towns of Nambucca Shire, in particular Nambucca Heads, Scotts Head and Valla Beach, are popular tourist destinations due to their coastal attractions. The region also features significant agricultural industries including beef and dairy cattle, blueberry and macadamia nut growing.

The Nambucca District Water Supply scheme (NDWS) serves all the urban centres as well as many rural properties. There are four sewerage schemes in the Nambucca LGA, they are the Bowraville, Macksville, Scotts Head, and Nambucca Heads (which also services Valla Beach and Hyland Park).

Growth strategy

The Shire population has grown from 16,730 in 1991 to 20,770 in 2023, with annual growth varying between -0.9% and 2.5% per year and averaging 0.7% per year. The population is expected to continue to grow in response to the availability of relatively affordable housing and generally pleasant climate, with a higher initial (2023-2028) forecast growth rate of 1.05% per year, decreasing to 0.67% per year between 2043 and 2053. There are also plans for a small amount of non-residential growth, mostly concentrated in the Macksville area.

Major new development areas in the Nambucca LGA are planned for South Macksville, Scotts Head, Nambucca Heads and the proposed Valla Urban Growth Area (VUGA) to the north-west of Nambucca Heads. Table S1 provides a summary of the expected growth. A substantial amount of growth is anticipated by 2028. Commercial and Residential areas, with anticipated space for an ultimate 2,160 equivalent tenements (ET), will become available in accordance with the Development Control Plan (DCP) prepared by GHD and shown in Figure S1.

Table S1: Expected growth in Nambucca Shire

Township	ET per Year						
	2023	2028	2033	2038	2043	2048	2053
Macksville (RES)	20	106	156	211	276	340	407
Macksville (non-RES)	17	81	131	181	195	195	195
Nambucca (RES)	48	435	704	859	1,091	1,386	1,710
Nambucca (non-RES)	0	12	25	25	25	25	25
Bowraville (RES)	4	24	30	30	30	30	0
Bowraville (non-RES)	0	0	0	0	0	0	0

Township	ET per Year						
	2023	2028	2033	2038	2043	2048	2053
Scotts Head (RES)	0	40	130	260	343	376	393
Scotts Head (non-RES)	0	12	25	25	25	25	25
Total	89	710	1,201	1,591	1,985	2,378	2,755

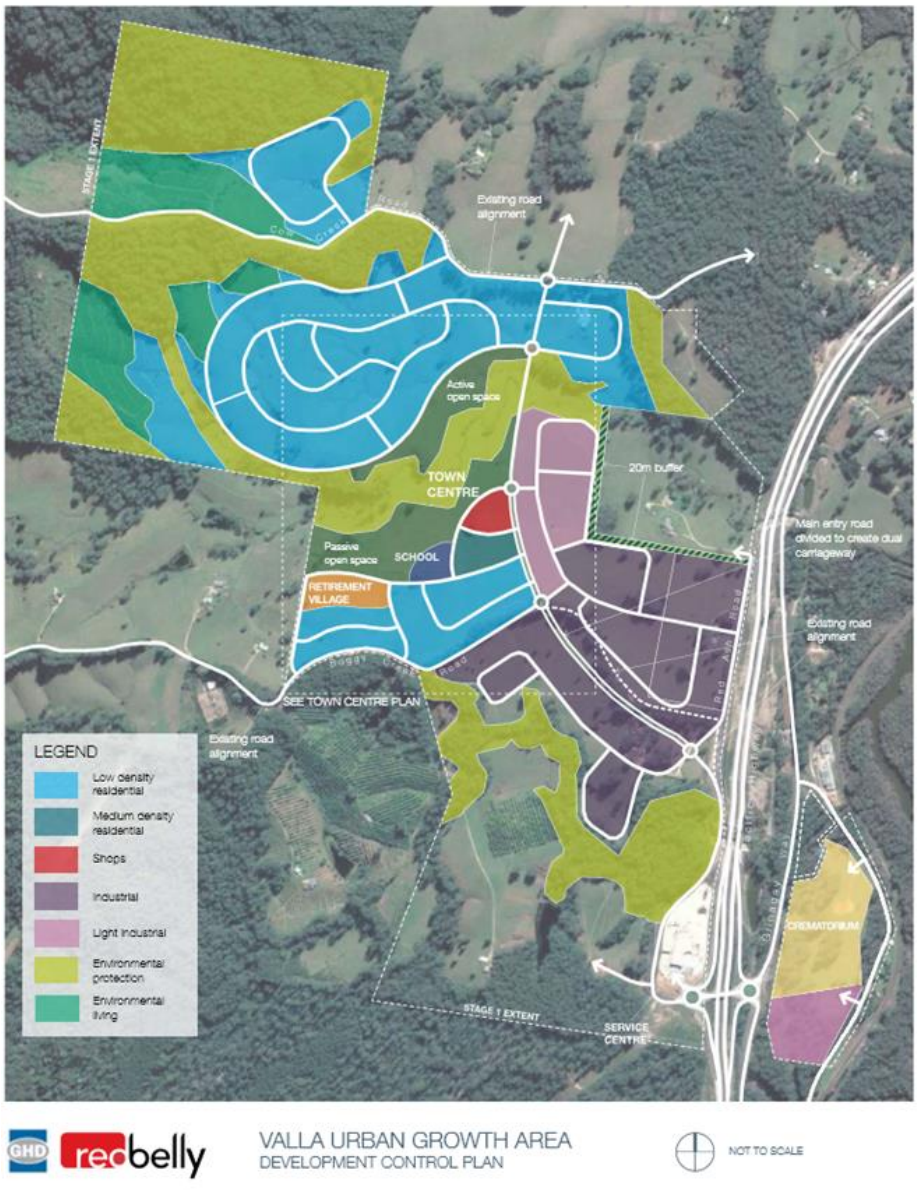

Figure S1: Development Control Plan for Valla Urban Growth Area

Council's water supply and sewerage infrastructure was reviewed to assess the capacity and performance to service the future growth, meet the nominated levels of service and meet the regulatory requirements for the operating environment.

Nambucca District Water Supply scheme

Water security

The 30-year forecast unrestricted annual demand is estimated to be 2,437ML/year which is less than Council's total entitlement of 5,000ML/year. Hence Council's entitlement is sufficient to meet the forecast 30-year water requirements. A secure yield analysis assessed the climate change secure yield of the headworks to be about 2,440 ML/year for the service level nominated by Council. This yield is sufficient to meet the 30-year water requirements of the scheme. The Water Sharing Plan (WSP) is currently under review. Council will propose a modified condition for consideration in the WSP review that would further increase the yield to 2,540 ML/year.

Water quality

A review of raw water quality from the Bowraville storage identified high levels of dissolved organic carbon (DOC) and also showed that the total iron concentration remains high at all depths in the storage, even though the corresponding concentrations in the bore water are not high. DOC complexed iron can be removed by conventional water treatment processes like coagulation, clarification and filtration. Funding for constructing water treatment plant in 2040-42 has been included in the asset management plan.

Distribution system

The NDWS scheme currently has an infrastructure leakage index (current annual real losses / unavoidable real losses) of around 1 which places it in the lowest category, which indicates a high performing network with low leakage. The historical average unit water loss is estimated to be around 81.3 L/connection/day, which is 12.5% lower than the state median of 92 L/connection/day.

Council's level of service indicator for supply pressure is met for all zones except the Scotts Head zone. Upgrades/improvements have been identified to overcome the issue in Scotts Head.

Macksville sewerage scheme

There are Oyster growers on the Nambucca River. Any sewage leak into the Nambucca River triggers a mandatory 21-day oyster harvest shut down. Multiple shutdowns were triggered in 2021 and 2022 during the heavy rainfall events. The performance of the Macksville sewerage scheme therefore has an impact on the local oyster industry.

Collection and transfer system

Council selected the 1 in 5 year (20% annual exceedance probability), 2-hour event as the containment standard for the collection and transfer system. Council's view is that this standard would be tolerable to the oyster industry. Also, during such a storm event, contamination of the river from other sources could also lead to the shutdown of oyster harvesting.

There are also some sewage catchments which have high infiltration. These catchments will be prioritised in Council's sewer relining program. Achieving the desired performance will require a combination of capacity upgrade and inflow/infiltration reduction.

Sewage treatment plant

A two-stage upgrade is proposed for the Macksville STP to address the capacity, performance issues and the renewals required. The works in each stage are summarised below:

<u>Stage 1:</u>

- Augment the capacity of the inlet works

- Maximise the capacity of the existing Reactor
- Address the algal growth in the catch pond
- Augment the sludge drying capacity
- Replace the mechanical and electrical equipment (at end of life)
- Address work health and safety issues

Stage 2:

- Augment the capacity of the plant to service growth

Scotts Head sewerage scheme

Collection and transfer system

Council selected the 1 in 5 year (20% annual exceedance probability), 2-hour event as the containment standard for the collection and transfer system. Future growth is predominantly expected in sewage pumping station catchment 8. The extent of development will depend on site constraints and planning approvals. Accordingly, system upgrades to service two growth scenarios have been considered; 150 Equivalent Tenements (ETs), and 300 ETs. Achieving the desired performance will require a combination of capacity upgrade and inflow/infiltration reduction.

Sewage treatment plant

The following works have been identified to augment the capacity of the Scotts Head STP to service future growth:

- A new inlet works upstream of the existing Pasveer channel.
- A new balance tank upstream of the existing Pasveer channel.
- Improve performance of aeration in the Pasveer channel, and other necessary modifications

Nambucca Heads sewerage scheme

Collection and transfer system

Council selected the 1 in 5 year (20% annual exceedance probability), 1-hour event as the containment standard for the collection and transfer system. Achieving the desired performance will require a combination of capacity upgrade and inflow/infiltration reduction.

Sewage treatment plant

A two-stage augmentation is proposed for the STP. Stage 1 would include a capacity augmentation for the sludge management system. Stage 2 would include a capacity augmentation of the reactor to service growth.

Bowraville sewerage scheme

Collection and transfer system

Council selected the 1 in 5 year (20% annual exceedance probability), 1-hour event as the containment standard for the collection and transfer system. The performance and capacity of the collection and transfer system was assessed for two options. One reflecting the infiltration with the current network condition and the other reflecting the design infiltration for a new network.

With reduced infiltration, no overflows or major surcharges are expected for the current and 2053 population. As such, no system upgrades will be required, allowing Council to focus on infiltration management rather than capacity upgrades.

Sewage treatment plant

The sewage treatment plant has sufficient capacity to service the 30-year forecast growth. The current Bowraville STP site is just 60 m to the nearest dwelling and takes up all of the useable land above the 1 in 100-year flood level. This makes it difficult to replace the plant at the same site while keeping it operational. Council has identified a site for a new Bowraville STP to replace the existing plant at the end of its design life.

Future actions and implementation plan

Table S2 and Table S3 show the bundled Scenarios segregated for convenience into water supply and sewerage schemes. The issues that are being addressed by each option are also listed.

Table S2: Shire wide water supply scenario – infrastructure needs

Target for compliance	Issue	Option	Scenario
Water supply system issues			
Water quality			
Water quality in Bowraville storage	High levels of TOC, DOC and iron exceeding the ADWG	Upgrade current water treatment system to provide capability to address the water quality issue	**2041**
	Treated water quality free chlorine	Primary disinfection is achieved by UV with chlorine providing residual disinfection. The DWMS should be revised accordingly and the water supply to the first customers can be classified as potable.	

Table S3: Shire wide sewerage scenario – infrastructure needs

Target for compliance	Issue	Option	Scenario
Macksville sewerage scheme			
Collection and transfer system			
Regulatory requirements and Levels of service	Upgrade/augment the network to eliminate WHS issues and to meet the LOS for the selected containment standard for current and future growth.	Outlined in the Hydraulic Modelling report for the Macksville sewer network	**2026-2031**
Sewage treatment plant			
Regulatory and System Capacity	Upgrade/augment the Macksville STP to meet license and capacity	Outlined in the STP capacity and performance assessment report	**2027**

Target for compliance	Issue	Option	Scenario
	requirements to service future growth	Off-site effluent reuse	**2035**
Nambucca Heads sewerage scheme			
Collection and transfer system			
Regulatory requirements and Levels of service	Upgrade/augment the network to eliminate WHS issues and to meet the LOS for the selected containment standard for current and future growth.	Outlined in the Hydraulic Modelling report for the Nambucca Heads sewer network	**2033-2038**
Sewage treatment plant			
Regulatory and System Capacity	Upgrade/augment the Macksville STP to meet license and capacity requirements to service future growth	Upgrade STP to address sludge management issues	**2029**
		Augment STP capacity to service future growth	**2046**
Scotts Heads sewerage scheme			
Collection and transfer system			
Regulatory requirements and Levels of service	Upgrade/augment the network to eliminate WHS issues and to meet the LOS for the selected containment standard for current and future growth.	Outlined in the Hydraulic Modelling report for the Scotts Head sewer network	**2030-2033**
Sewage treatment plant			
Regulatory and System Capacity	Upgrade/augment the Macksville STP to meet license and capacity requirements to service future growth	Stage 1 Capacity augmentation – Inlet balance tank and performance optimisation of the Pasveer channel.	**2028**
		Stage 2 – Capacity augmentation	**2053**
Bowraville sewerage scheme			
Collection and transfer system			
Levels of Service	Network overflows and surcharges for the selected containment standard	Address inflow and infiltration into the network	**2028**

Asset Management

Council's Water supply and Sewerage Asset Management Plans 2023-2042, provide a detailed overview of the asset management systems, procedures and strategies in place to ensure delivery of services in a financially sustainable manner.

The preferred IWCM strategy to address the Council's asset system and performance issues has enabled Council to develop the total asset management plan (TAMP) over a 30-year planning horizon that provides a schedule of capital works into the future with a view to satisfy the forecast service demands in terms of growth, improved levels of service and renewal of existing assets.

The TAMP also provides the details of recurrent operations, and management (O&M) expenditure over a 30-year period. Detailed discussions of TAMP are provided in Section 12.

Long-term Financial Plans

Long-term financial plans (LTFP) for water supply and sewerage funds have been prepared using the TAMPs to set up the financial models. Financial models set up using the Finmod 4.0 financial modelling software enable Council to forecast the lowest stable sustainable price path for water supply and sewerage services on which to base Council's tariff structure. Note, all the forecast values are in 2024-25 dollars unless specified otherwise.

'First-cut' developer charges

For the purpose of the IWCM strategy assessment, 'first-cut' water supply and sewerage developer charges (DCs) in consideration of the estimated costs and timings of major capital work initiatives have been calculated in accordance with the 2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater. 'First-cut' DCs are the preliminary developer charge estimates that need to be reviewed and refined in consideration of additional service areas and agglomerations, cross-subsidy requirements etc., before adoption by the Council, and are presented in Table S4 and Table S5.

Table S4: First-cut developer charges – water supply

Service Area	Capital Charge ($/ET)	Reduction Amount ($/ET)	First-cut Developer Charge ($/ET)	Current Developer Charge ($/ET)
Nambucca District Water Supply Scheme	11,729	4,192	7,538	10,021

Table S5: First-cut developer charges – sewerage

Service Area	Capital Charge ($/ET)	Agglomerated Capital Charge ($/ET)	Reduction Amount ($/ET)	First-cut Developer Charge ($/ET)	Current Developer Charge ($/ET)
Macksville	19,071	15273	3,953	11,320	12,760
Bowraville	18,703				8,362
Nambucca Heads	14,079				12,760
Scotts Head	13,131	13,131		9,178	8,362

The water and sewer fund financial model forecasts are based on the assumption that Council will be adopting and levy the developer charges at the level of first-cut estimates.

Water fund LTFP

The water fund financial model considers no government grants/ subsidies for any of the planned capital works during the 30-year planning period, and demonstrates that the 2025-26 typical residential water bill (TRB) of $825 p.a. ($850 p.a. in 2025-26 dollars) can be maintained at that level for all the remaining forecast years.

Council's water fund had an outstanding borrowing of $20.09 Million as of 30 June 2024. The model forecasts demonstrate that with the recommended price path, all the planned capital works can be fully funded internally by Council. New loans will be required only in 2040-41 to partly fund the proposed upgrade of WTP.

The projected levels of TRBs is sufficient to maintain liquidity with a minimum level of cash and investment of $3M in the water fund throughout the forecast period. The TRB forecasts, levels of cash and borrowing outstandings for the water fund over the 30-year forecast period are presented in Figure S2. For more details of water fund financial model outcomes, refer to Section 13.4.

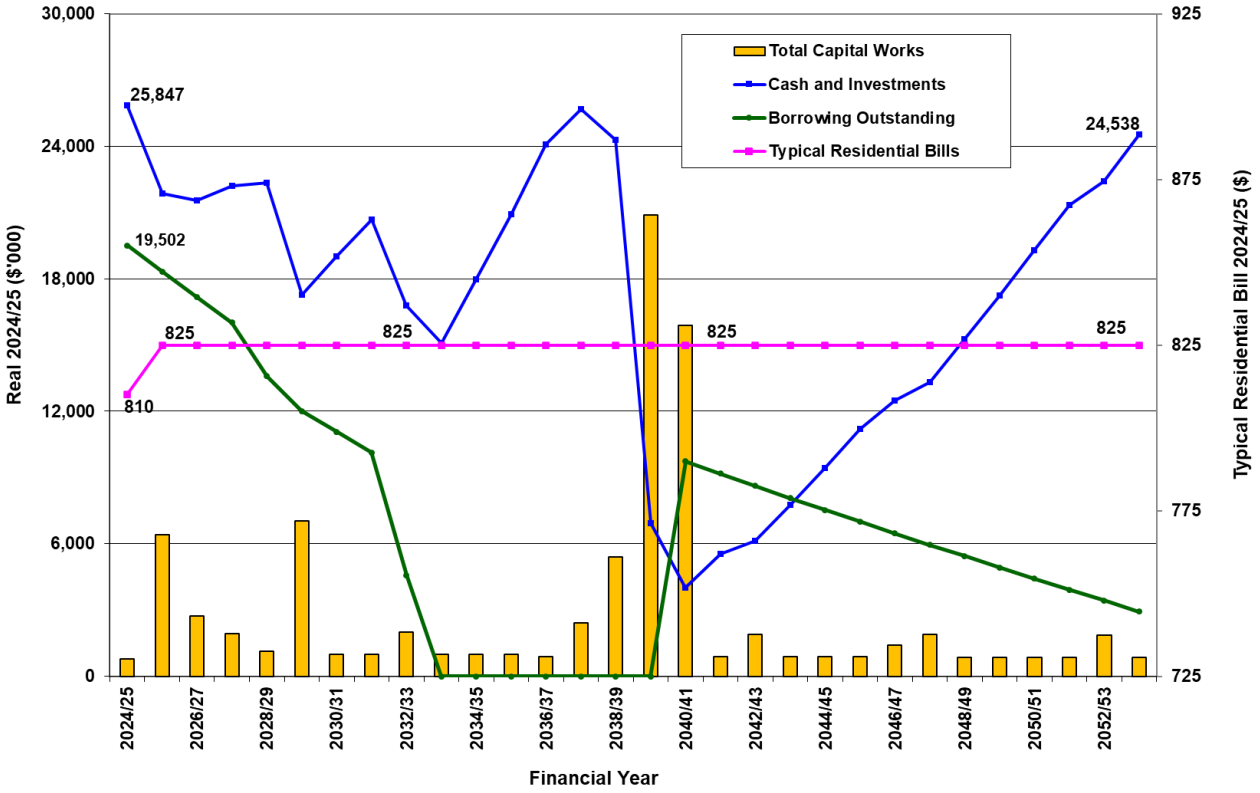

Figure S2: Water fund financial model forecasts summary

Sewer fund LTFP

Council's sewer fund financial model considers no government grants or subsidy for any of the planned capital works planned for the next 15 years. Thereafter, availability of 25% grants for the future Bowraville and Nambucca Heads STP augmentation works planned during 2042 – 2047 have been considered.

The sewer fund financial models demonstrate that the 2025-26 annual residential sewerage charge of $838 p.a. ($867 p.a. in 2025-26 dollars) needs to be increased at the rate of 2% per year (5% p.a. after annual CPI adjustments) to achieve $928 p.a. in the year 2030-31. Thereafter, it can be maintained at that level for all the remaining years of the 30-year forecast period.

Council's sewer fund has an outstanding borrowing of $5.81 Million as of 30 June 2024. The financial model demonstrates that most of the planned capital works can be funded internally by the Council. New loans will be required to part-fund some of the major capital upgrade works planned after 25 years from now.

The forecast levels of TRBs is sufficient to maintain liquidity with a minimum level of cash and investment of $2M in the sewer fund throughout the forecast period. The levels of cash and borrowing outstandings during the forecast period are presented in Figure S3. For more information on sewer fund financial model forecasts, refer to Section 13.5.

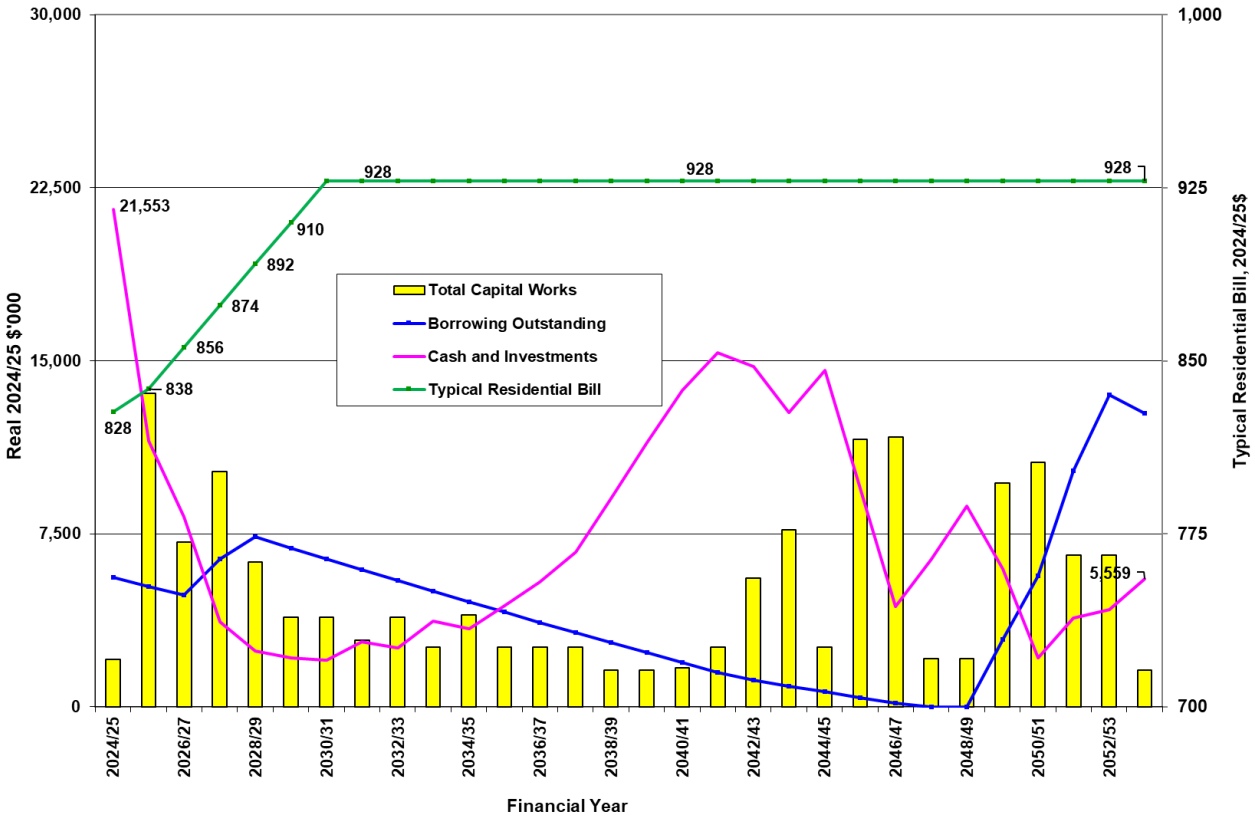

Figure S3: Sewer fund financial model forecasts summary

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Abbreviations and Acronyms

Item	Description
≈ or ~	approximately equal to
ΔH	differential head (refer to Glossary)
Δh	Head loss or component differential head (refer to Glossary)
AEP	annual exceedance probability - expressed as a percentage ('% AEP') for events with a frequency ≥ 1%, and as '1 in X AEP' for events with a frequency < 1%
AHD or mAHD	Australian Height Datum (in metres)
BWL	bottom water level
CH or Ch	chainage
D/S or d/s	downstream
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEM and DTM	digital elevation model; and digital terrain model
dia, ∅	diameter
Dwg	drawing
f'c	concrete design characteristic compressive strength after 28 days
FSL	full supply level, and full storage level
GL	gigalitres (1 x 10^9 L, 1000 ML)
L/s or l/s	litres per second
LTFP	Long Term Financial Plan
m^3/s or cumecs	cubic metres per second (1 m^3/s is equivalent to 1000 L/s)
ML and ML/d or ML/day	megalitres (1 x 10^6 L); and megalitres per day (1 m^3/s = 86.4 ML/d)
No.	number
nom	nominal
NS and NSL	natural surface, and natural surface level
NSWPW	NSW Public Works
PIRMP	Pollution Incident Response Management Plan
O&M and O&MM	operation and maintenance, and operation and maintenance manual
Q	flowrate or discharge
ref	refer, or reference
RFS and RFT	Request For Services, and Request For Tender
RL	reduced level relative to an established datum (typically AHD)
SWI and SWMS	Safe Work Instruction, and Safe Work Method Statement

Item	Description
TAMP	Total Asset Management Plan
tba, tbc, and tbd	to be advised, to be confirmed, and to be determined
T.O.	top of
TRB	Typical Residential Bill
TW and TWL	Tailwater, and tailwater level (refer to Glossary)
typ	typical
u.n.o. or uno	unless noted otherwise
U/S or u/s	upstream
WAE	work as executed (as constructed/built)
WNSW	WaterNSW
WL and WSL	water level; and water surface level
WLL	working load limit (typically in tonnes or kilograms)
w.r.t.	with respect to

1. Introduction

Nambucca Shire is located on the Mid North Coast of NSW. The urban centres within Nambucca Shire are Nambucca Heads, Valla Beach, Hyland Park, Macksville, Scotts Head and Bowraville as shown Figure 1-1.

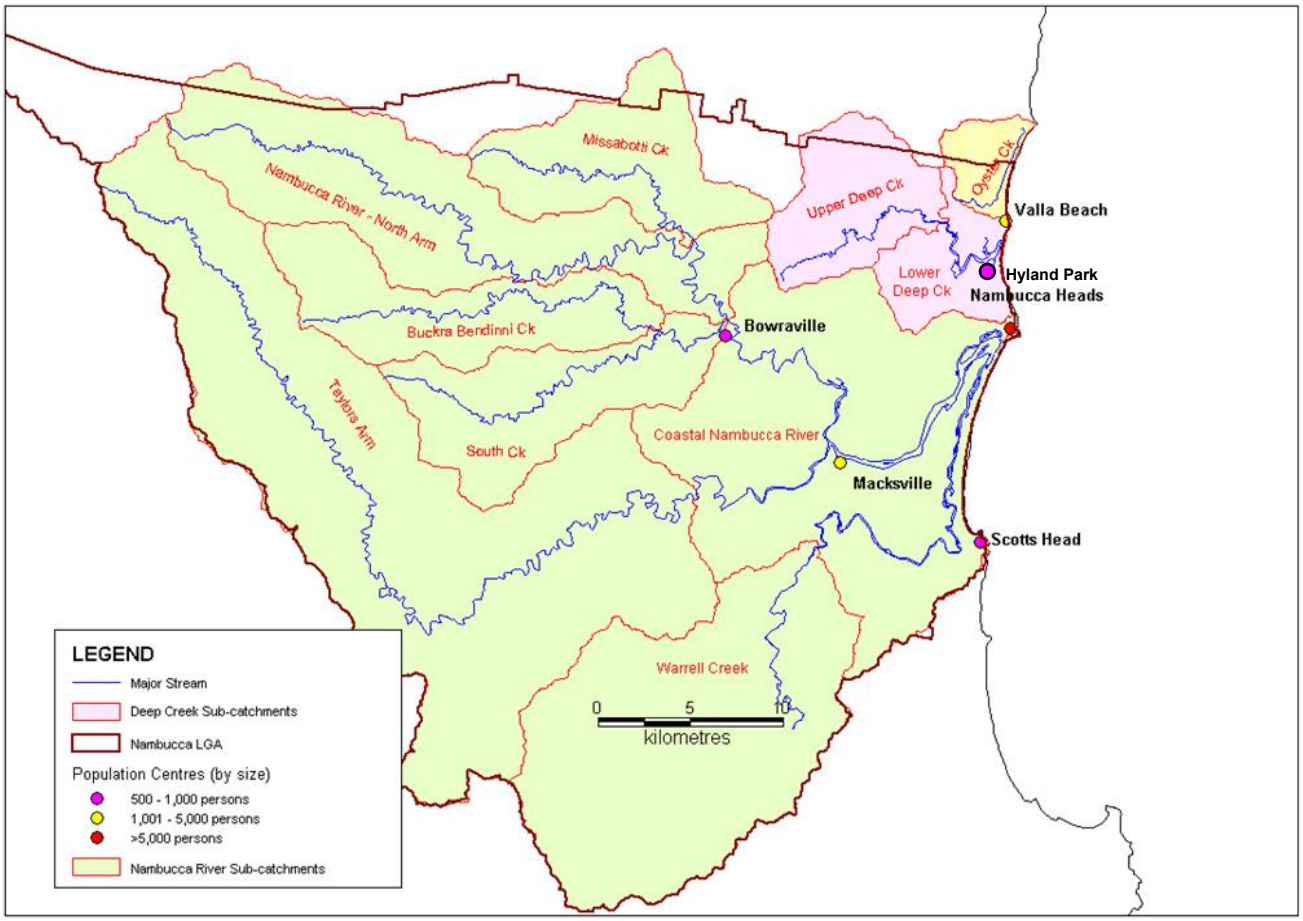

Figure 1-1: Nambucca Shire Local Government Area map

Nambucca Valley Council (NVC) is the local government authority for the Nambucca Shire. The Nambucca Shire area covers approximately 1,491 km2, of which more than 40% is national parks or state forest. The Nambucca Shire borders the local government areas of Bellingen to the north, Kempsey to the South, and Armidale Regional Council to the west.

The coastal towns of Nambucca Shire, in particular Nambucca Heads, Scotts Head and Valla Beach, are popular tourist destinations due to their coastal attractions. The region also features significant agricultural industries including beef and dairy cattle, blueberry and macadamia nut growing.

Water supply service

NVC provides water supply services to the majority of the residential as well as the commercial and industrial premises in the urban centres throughout the Nambucca District Water Supply (NDWS) scheme. The NDWS serves all the urban centres including Nambucca Heads, Bowraville, Macksville, Scotts Head, Hyland Park and Valla Beach, as well as many rural properties.

Sewerage service

There are four sewerage schemes in the Nambucca LGA, they are the Bowraville, Macksville, Scotts Head, and Nambucca Heads (which also services Valla Beach and Hyland Park) Sewerage Schemes. Several rural residential areas are not connected to the sewerage schemes due to remoteness with septic tank systems mostly used in those areas.

2. Strategic Objectives

A local water utility's (LWU's) Water and Sewerage (W&S) Strategic Plan is a 30-year strategy for the provision of appropriate, affordable, cost-effective, and sustainable urban water services that meet community needs and protect public health and the environment. The Strategy:

- Identifies the water supply and sewerage needs of an LWU;
- 'Right sizes' any infrastructure projects and determines their priority;
- Identifies the lowest level of stable Typical Residential Bill (TRB) to meet the agreed levels of service;
- Includes a 30-year Total Asset Management Plan (TAMP) and Financial Plan; and
- Identifies strategies to mitigate identified organisation risks such as drought, water quality health-based targets, climate change and community expectations on levels of service.

The nominated growth and levels of service (LOS) targets are the key drivers that impact the development of the TAMP. The 30-year financial plan determines the revenue requirements to support the TAMP and forecasts the Typical Residential Bill (TRB) and the Developer Charge (DC) for the preferred strategy. The process is iterative, and an affordable level of service and TRB is determined through community and stakeholder consultation.

3. Levels of Service

The Levels of Service framework developed from objectives and targets relevant to the water supply, sewerage management and general services, has been provided in Table 3-1, Table 3-2 and Table 3-3. The performance indicators and targets have been nominated by Council. Each objective has one or more Service Standard (or Design Basis) drawn from legislation, best practice guidelines, and industry practice.

Table 3-1: Levels of Service – Water supply schemes

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target	Performance
Water supply security				
Adequate potable water for current and future generations with reasonable level of restrictions	Example: 5/10/10 rule based on 95th percentile dry year demand: Duration of water restrictions does not exceed 5% of the time. Frequency of water restrictions does not exceed 10% of years (i.e. on average once every 10 years). Severity of water restrictions does not exceed 10%. System must be able to meet 90% of unrestricted demand (i.e. 10% average reduction in consumption due to water restrictions).	Frequency (average number) of drought-related Level 3 restrictions	Average frequency of restrictions: 1 per 10 years	No drought related restrictions were imposed since the end of the Millennium Drought in 2010/11. According to Council, minimal (level 1) restriction was imposed in 2018/19, however, this was to be consistent with nearby Councils rather than due to water supply concerns.
		Total percentage duration of drought-related restrictions	Average duration of restrictions: 6 months per 10 years	
		Level of restriction applied through a repeat of the worst drought on record	Level of restriction applied through a repeat of the worst drought on record: 10% reduction of normal usage	
Projected town water supply extraction is within the upper limit of the water extraction licence and meets any licence conditions	Not exceeding the licensed entitlement and any other conditions	Annual volume of water extracted	Nil exceedance of annual licensed entitlement)	Council has LWU category WAL of 5,000 ML/year, and currently only use under 1,500 ML/year. No exceedance of entitlement in the previous seven years.

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target	Performance
Drinking water quality				
Protects public health	100% compliance with the Australian Drinking Water Guidelines (ADWG) for health-based parameter	Number of boil water alerts	Nil	There have been no boil water alerts for the past 5 years.
	Compliance with the DWMS	Non-compliances reported in annual DWMS audit	Nil	Nil
Aesthetically fit for purpose	Compliance with the ADWG for aesthetic parameters	Number of customer complaints: Discoloured water complaints Complaints of taste Complaints of odour	<1 water quality complaints per 1,000 connections	Number of water quality complaints per 1000 connections in the most recent year is 5.7 per 1000 connections (NSW median 2.5-3.6).
Reliability of supply infrastructure				
Limit supply interruptions	Asset condition	Number of unplanned service interruptions due to asset failure:		
		Mains breaks	6 mains break per 100km annually	Number of main breaks per 100 km main from the most recent data set is 15.
		Unplanned interruptions	2 interruptions per 1,000 connections per year	Not recorded.

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target	Performance
		Duration of planned interruptions	Planned: Max 6 hours/event	Council does not monitor duration of planned interruptions. Council to include in the CRM system.
		Duration of unplanned interruptions	Unplanned: Average 4 hours per event	Not recorded.
Maintain Continuous Service Availability	Workforce resourcing	Response time to incidents for water service failures:		
		Priority 1 (failure affects many customers or a critical user at a critical time)	60 minutes	Not recorded.
		Priority 2 (failure affects a small number of customers or to non-critical user at a non-critical time	120 minutes	
		Priority 3 (failure affects one single customer)	180 minutes	

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target	Performance
Maintain adequate pressure	Treatment and distribution system capacity designed to supply 95th percentile peak day demand.	Number of incidents causing complaints about pressure	Minimum pressure at connection boundary of 20 m when delivering 0.1 L/s. Max static pressure of 80 m in urban areas. No target for number of pressure complaints	The performance indicator is met for all zones, except the Scotts Head zone. Upgrades/improvements have been identified to overcome this issue. From Council's complaints register, the number of water pressure complaints was 14 in 2022/23.
Provide adequate firefighting capability	System can supply 15 L/s for 4 hours when supplying peak day demands while maintaining adequate pressure.	Percentage of urban area with firefighting facilities. Percentage of system capable of meeting fire engine requirements.	100% area served	No issues have been identified with meeting this performance target.

Table 3-2: Levels of Service for Sewerage schemes

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target (from Council SBP)	Performance
Reliability of collection and treatment infrastructure				
Maintain Continuous Service Availability	Asset condition	Number of unplanned service interruptions due to asset failure:		

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target (from Council SBP)	Performance
		Category One: Failure due to rainfall and deficient capacity (overflows to the environment)	Zero sewer overflows per year for rainfall events less than 20% AEP (1-in-5 year) daily rainfall event.	The number of overflows to the environment from data was 41 in 2022/23 (7 per 1,000 properties)
		Category Two system failure: failure due to pump or other breakdown including power failure:	Nil	Nil
		Category Three system failure: Mains blockage/collapse	Nil	Nil
	Workforce resourcing	Response time to incidents		
		Priority 1 – Major spill, significant environmental or health impact, or affecting large number of consumers i.e. a major main	Response times during Working hours: 30minutes Afterhours: 60minutes	Not recorded.

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target (from Council SBP)	Performance
		Priority 2 – Moderate Spill, some environmental or health impact, or affecting small number of consumers i.e. other mains	Response times during Working hours: 60 minutes Afterhours: 120 minutes	Not recorded.
		Priority 3 – Minor spill, little environmental or health impact, or affecting small number of consumers i.e. other mains)	Response times during: Working hours: 120 minutes Afterhours: 180 minutes	Not recorded.
Protect the environment and receiving waters				
System Performance	Compliance with the EPL	Effluent discharge compliance with license limits	100% of sewage treated to tertiary or advanced level	No non-compliance
	Overflows during dry weather	Category Two system failure: failure due to pump or other breakdown including power failure:	Zero overflows per 100km mains to the environment due to pump failures	Inadequate record to distinguish between wet/dry weather overflow

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target (from Council SBP)	Performance
	Overflows during wet weather	Category One system failure: failure due to rainfall and deficient capacity	zero sewer overflows per year for rainfall events less than 20% AEP (1-in-5 year) daily rainfall event.	Inadequate records to distinguish between wet/dry weather.
	Compliance with biosolids guidelines	Non-compliances	Nil	NVC contracts out biosolids disposal. The Contractor is required to comply with the biosolids guidelines before beneficial reuse
	Minimise odours	Number of odour complaints	Odour complaints Treatment works: <1 per 1000 connections Pumping stations: <1 per 1000 connections Reticulation system: <1 per 1000 connections	Council's complaints register has sewer odour complaints during the most recent record is • Nil for treatment works • 0.48 complaints per 1000 connections for pumping stations • 4.12 complaints per 1000 connections for the reticulation system.
Sound regulation of sewerage and trade waste	Liquid trade waste (LTW) policy complies with best-practice guidelines	Compliance against guideline	Zero non-compliances recorded in DCCEEW audit	Data Gap

Objective	Service Standard (Design Basis)	Performance Indicator	Council's Target (from Council SBP)	Performance
	Compliant LTW classification, acceptance and approval processes	Percentage of compliant systems/premises	90% of dischargers compliant with LTW policy	Data Gap Note – Council has indicated that a trade waste compliance officer was recently engaged. Auditing trade waste users is expected to take 12 months with completion expected by mid-2026. Outcomes will be captured with non-compliant dischargers identified and aided in bringing up to standard.
	Full cost recovery pricing model or pricing model based on Appendix D of the LTW Guidelines	Pricing model based on Appendix D of the LTW Guidelines	Full cost recovery from pricing model	Council's pricing model is consistent with the Liquid Trade Waste Regulation guidelines.

Table 3-3: General Levels of Service

Objective	Service Standard (Design Basis)	Performance Indicator	Target (examples in RED)	Performance
Environmental sustainability				
Minimise dependence on grid power	On-site generation of renewable sources of electricity where economical	Number of facilities with on-site renewable energy generation system	E.g. 50% Council's target: install solar panels at all sewage treatment plants.	No defined target or action plan to meet SBP. Council plans to review feasibility during augmentation concept design. Council indicated that provision for solar power will be included in the STP augmentations.

Objective	Service Standard (Design Basis)	Performance Indicator	Target (examples in RED)	Performance
		% per capita reduction in greenhouse gas	According to 2012 SBP for Water Supply and Sewerage Services, Council has target greenhouse gas emissions back to the year 2000 levels by 2025. Note – Council does have a climate change adaption strategy (2010), however this document does not provide specific GHG emission reduction targets.	Nil
Financial sustainability				
Revenue meets on-going commitments	Full cost recovery	Economic rate of return	e.g. >= 0%	> 0%.
Efficient operation delivering stable price paths	Evidence based robust total asset management plan (TAMP), financial plan (FP) & business continuity plan (e.g. DCERP)	TAMP, FP & DCERP – annually reviewed & regularly audited	Compliant current TAMP, FP & DCERP	FP adopted by Council.

Objective	Service Standard (Design Basis)	Performance Indicator	Target (examples in RED)	Performance
Pricing signal for sewerage services is fair and strong to encourage efficient use of services	All users/customer properties with a sewer connection are charged	Percentage of users/customer properties with a sewer connection charged	100%	100%
Developer charges that are competitive to attract economic growth	Common LGA wide **OR** individual town/system specific sewer developer charges that is compliant with guideline	Extent of community acceptance	DSP adopted by Council	Revised DSP to be considered by Council and publicly exhibited during 2025-26.
		Percentage compliance with developer charges guidelines	100%	100%
	Full cost or cross-subsidised as per guideline	Extent of community support of cross subsidy OR full cost	Full transparency of any cross-subsidy in DSP adopted by Council	Revised DSP to be considered by Council and publicly exhibited during 2025-26.
Asset management				
Maintain up-to-date asset register	Asset register compliant with TAM04-7.	Extent of assets captured in the asset register	100% of Council's assets in asset register	100%
		Accuracy of assets in the management system and what is in-ground	90% of in-ground assets accurately captured in asset register – measured in audit	Not recorded
	Asset management system drives service delivery	Percentage usage in work scheduling	100% of works scheduled based on asset management system	Council uses an asset management system to drive capital projects.

Objective	Service Standard (Design Basis)	Performance Indicator	Target (examples in RED)	Performance
Safety of staff and members of the public				
Work Health and Safety	WHS issues at Council's water supply and sewerage sites	Number of WHS issues recorded in WHS inspections	Encourage reporting near misses Zero lost time injuries reported at all sites	Council has safe work method statements, standard operating procedures, and general WHS policies.
Public Health	Prevent public from encountering septic tank effluent	Sightings of pools of OSSMS effluent	Zero complaints about OSSMS per year (odour, pooling etc)	No septic tank complaints register.

4. Operating Environment Compliance

Nambucca Valley Council operates one water supply and four sewerage schemes under the Local Government Act (1993). The Local Government Act and a number of other legislations influence the way in which Council can provide the urban water and wastewater services and have specific implications for the operation of the schemes. Table 4-1 provides the details of the status of compliance with the legislative and regulatory requirements by the Council.

Table 4-1: Operating Environment Compliance

Key Legislative Framework and their main purposes	Council current performance and future targets
Local Government Act (1993)	
This Act aims to provide the legal framework for an effective, efficient, environmentally responsible, and open system of Local Government including the provision, management and operation of water supply and sewerage works and facilities. It covers: • Section 60 - approvals for water or sewage treatment works construction and for effluent and biosolids reuse • Section 61 - inspections of water and sewage treatment works • Section 64 - developer charges • Section 68 - provide an approval to applications to discharge trade waste to Council's sewerage system • Section 90 (2) - concurrence on liquid trade waste approvals • Section 428 - annual reporting	These Legislative and regulatory targets are generally met by Council. Council is currently in the process of obtaining Section 60 approval for its effluent reuse scheme at Bowraville, Council implements Developer Charges Council has a trade waste policy and charges.
Environmental Planning and Assessment Act (1979) (incl. the EPA Regulation 2000)	
This Act aims to encourage proper management of resources, the orderly use of land, the provision of services, and the protection of the environment. It covers: Local Environmental Plans (LEP), Environmental Impact Statement (EIS), Reviews of Environmental Factors (REF).	These Legislative and regulatory requirements are generally met by Council.
Public Health Act (2010)	
This Act aims to promote, protect and improve public health; by providing safe drinking water to the community. It requires a Local Water Utility to have a Drinking Water Management Plan (DWMP) in place. Councils' performance against the DWMP was checked by: • Reviewing the raw water quality received at the plant • The performance of the plant against the critical control points • Review of the reticulated water quality	Council maintains the treated water quality to the operational target with no exceedance of the critical limits.

Key Legislative Framework and their main purposes	Council current performance and future targets
Fluoridation of Public Water Supplies Act (1957)	
This Act covers the addition of fluoride to public water supply under the NSW Fluoridation Code of Practice.	The fluoridation system at Bowraville Water Treatment Plant complies with the Code of Practice.
Water Management Act (2000)	
This Act promotes the sharing of responsibility for the sustainable and efficient use of water between the NSW Government and water users and provides a legal basis to manage NSW water planning, allocation of water resources and water access entitlements.	Council has obtained required water licenses to extract water from the Regulated Nambucca River.
Protection of the Environment Operations Act (1997)	
This Act introduces an approach to protect the environment. It is a powerful tool for regulating 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.	Council has an EPA license for each of the four STPs at Bowraville, Macksville, Nambucca Heads and Scotts Head; license numbers 587, 579, 803, and 2564, respectively. Council also has a PIRMP for each STP.
Work Health and Safety Act 2011 and WHS Regulation 2017	
This Act has an objective to provide a consistent framework to secure the health and safety of workers and workplaces.	Council undertakes periodic WHS reviews at its plants. A comprehensive WHS review was undertaken by NSWPW during the Macksville STP Augmentation concept design development. WHS reviews will also be carried out during the concept design development of the Scotts Head and Nambucca Heads Sewage Treatment Plant Augmentations scheduled for 2025. A WHS review of the Bowraville STP will be carried out concurrently with the Scotts Head STP WHS review.
Protection of the Environment Legislation Amendment Act 2011	
Requires all LGs to publish groundwater, surface water, leachate and landfill gas monitoring data from each of their landfill sites from 1st July 2012.	Council publishes the required data on its website.

5. Population assessment and projections

The Shire population has grown from 16,730 in 1991 to 20,770 in 2023, with annual growth varying between -0.9% and 2.5% per year and averaging 0.7% per year. The population is expected to continue to grow in response to the availability of relatively affordable housing and generally pleasant climate, with a higher initial (2023-2028) forecast growth rate of 1.05% per year, decreasing to 0.67% per year between 2043 and 2053.

There are also plans for a small amount of non-residential growth, mostly concentrated in the Macksville area (195 Equivalent Tenements), with a small amount of non-residential growth in the Valla Urban Growth Area (25 ET), and Scotts Head (also 25 ET).

5.1 Visitor contribution

Nambucca LGA receives large numbers of visitors in the spring and summer school holidays due to its coastal location. Council had adopted peak tourist population increases listed in Table 5-1 in the 2018 IWCM Strategy. Sewage Treatment Plant (STP) loadings assist in estimating the increase during peak seasons and inflow variations were analysed for each STP. There were significant population increases observed at Scotts Head and Nambucca Heads during the summer holiday period.

Table 5-1: Tourist peak increase

Service Area	2018 IWCM Strategy – Percent Tourist Increase (%)	2024 IWCM Strategy – inflows (%)
Nambucca Heads STP	53%	30%
Macksville STP	0%	15%
Valla Beach (VB PS5*)	14%	47%
Hyland Park (HP PS6*)	0%	23%
Scotts Head STP	109%	80%
Bowraville STP	0%	0%

* Assumed, no flow data provided

5.2 Major Developments and nominated growth strategy

Major new development areas in the Nambucca LGA are planned for South Macksville, Scotts Head, Nambucca Heads and the proposed Valla Urban Growth Area (VUGA) to the north-west of Nambucca Heads. Development in South Macksville and Nambucca has already begun with the construction of water and sewerage services associated with multiple residential developments. The VUGA has had two servicing strategies completed along with an options assessment of the water supply and sewerage lead-in infrastructure for ultimate development. Commercial and Residential areas, with anticipated space for an ultimate 2,160 equivalent tenements (ET), will become available in accordance with the Development Control Plan (DCP) prepared by GHD and shown in Figure 5-1 (GHD, 2018). Table 5-2 provides a summary of the expected growth. A substantial amount of growth is anticipated by 2028.

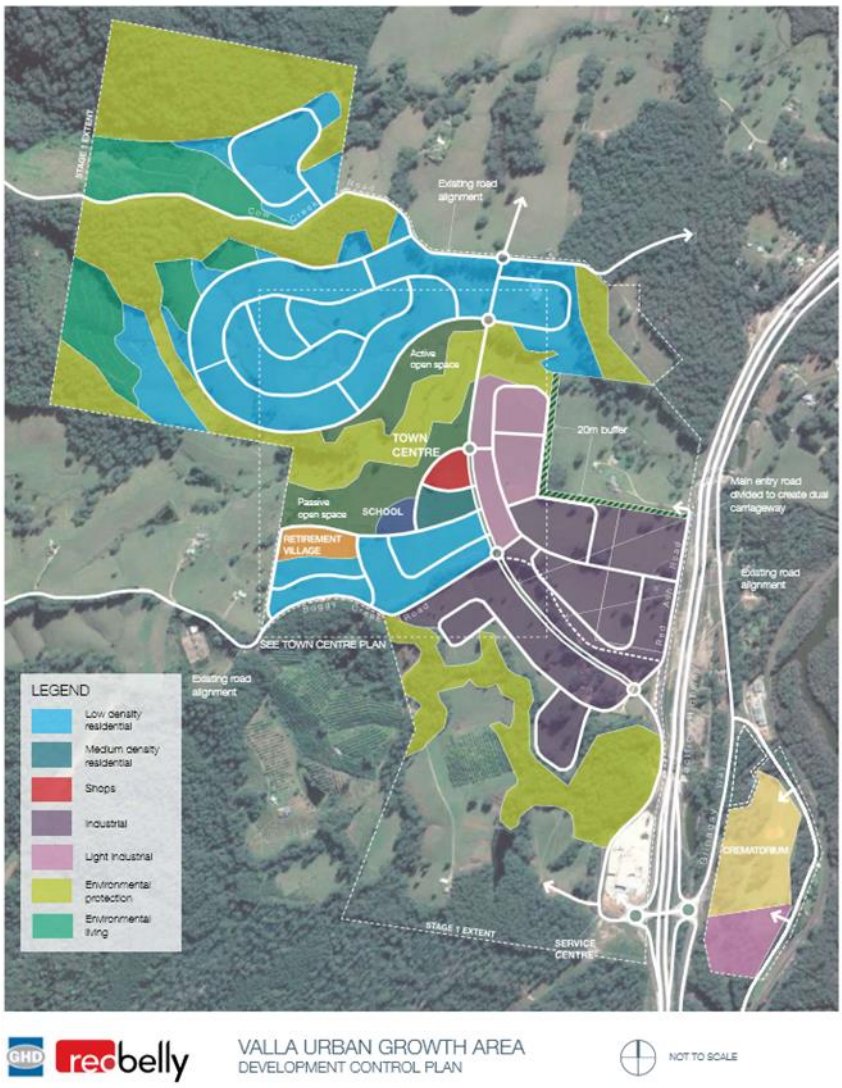

Figure 5-1: Development Control Plan for Valla Urban Growth Area

Table 5-2: Expected growth in Nambucca Shire

Township	ET per Year						
	2023	2028	2033	2038	2043	2048	2053
Macksville (RES)	20	106	156	211	276	340	407
Macksville (non-RES)	17	81	131	181	195	195	195
Nambucca (RES)	48	435	704	859	1,091	1,386	1,710
Nambucca (non-RES)	0	12	25	25	25	25	25
Bowraville (RES)	4	24	30	30	30	30	0
Bowraville (non-RES)	0	0	0	0	0	0	0
Scotts Head (RES)	0	40	130	260	343	376	393
Scotts Head (non-RES)	0	12	25	25	25	25	25

Township	ET per Year						
	2023	2028	2033	2038	2043	2048	2053
Total	89	710	1,201	1,591	1,985	2,378	2,755

The residential growth is mostly in new development areas with 2,191 new dwellings to be built in new subdivisions, 123 lots to be redeveloped into medium density residential developments, and 149 new dwellings to be built on already subdivided lots (infill). The infill lots are mostly concentrated in Nambucca Heads in the Northwest, near Nambucca High School, near the town centre, and northern Nambucca Heads, with some additional lots distributed through Scotts Head and Valla Beach.

The Fairway Gardens retirement village (an aged care facility located to the south of Macksville Country Club) is currently being developed. For the purpose of the forecasts, it is assumed that it will be developed in stages between 2023 and 2027.

Growth appears compliant with the current LEP. The major towns are likely to be difficult to expand due to neighbouring land uses, such as National Parks, Nature Reserves, already developed rural residential land, waterways, and flood prone land.

Council has nominated two sets of household sizes (HHS) to be used for the following purposes, namely:

- Growth modelling off-peak, this is based on historic HHS
- Network modelling – to be based on an HHS of 3.5 for Nambucca Heads, Scotts Head, Valla Beach and VUGA only, while all other areas are to retain their historic HHS.

The peak population in private dwellings, presented in Table 5-3, was estimated using percentage increases in the household size for sewered dwellings.

Table 5-3: Population in private dwellings

	Detached dwellings	Attached dwellings	Small dwellings*	Population increase during peak periods
Nambucca Heads	15%	23%	8%	27%
Valla Beach	15%	23%	8%	35%
Hyland Park	10%	15%	5%	10%
VUGA	10%	15%	5%	10%
Bowraville	0%	0%	0%	4%
Macksville	10%	15%	5%	15%
Scotts Head	50%	75%	25%	83%

5.3 Population and dwelling projections

Council's population and dwelling forecasts were developed using the serviced population derived from the billing data, ABS data including household sizes, occupancy rates and visitor contributions, and finally the nominated subdivision development strategy that Council had provided. The subdivision development strategy provides sufficient dwelling growth to maintain an appropriate level of population

growth until 2036 and then declines. In order to maintain the population growth, the following additional dwelling growth was added:

- infill development of undeveloped lots in Scotts Head, Nambucca Heads and Valla Beach (note that there are some vacant lots that are not expected to be developed within the next 30 years due to construction difficulties related to steep sites and/or drainage paths)
- densification of lots in Scotts Head, Nambucca Heads and Macksville, where there are large lots (over 1,000 m2) with small houses, as over the next 30 years it is expected that these lots will be redeveloped into blocks of flats, townhouses or villa homes at a rate of four new small dwellings per existing lot
- additional 615 lots to be developed in the Valla Urban Growth Area as the current subdivision plan has room for about 915 lots and the initial plan provided by Council was to only develop 150 lots (the remaining 150 lots are expected to be developed soon after 2053).

Council's population forecast is also compared against the 2020 NSW Planning forecasts and previous forecasts within the 2010 and 2018 IWCM Strategies in Figure 5-2. The nominated growth is similar to the forecast derived in the 2010 IWCM strategy and is far greater than those proposed by the Department of Planning, Housing and Infrastructure (DPHI). The 2021 ERP is slightly lower than would be expected from the trend over the previous few years, this may have been due to a reduction in seasonal residents due to the COVID-19 travel restrictions, it has been assumed that the removal of the restrictions contributed to what appears to be sudden increase in 2023, which is instead a return to the previous trend.

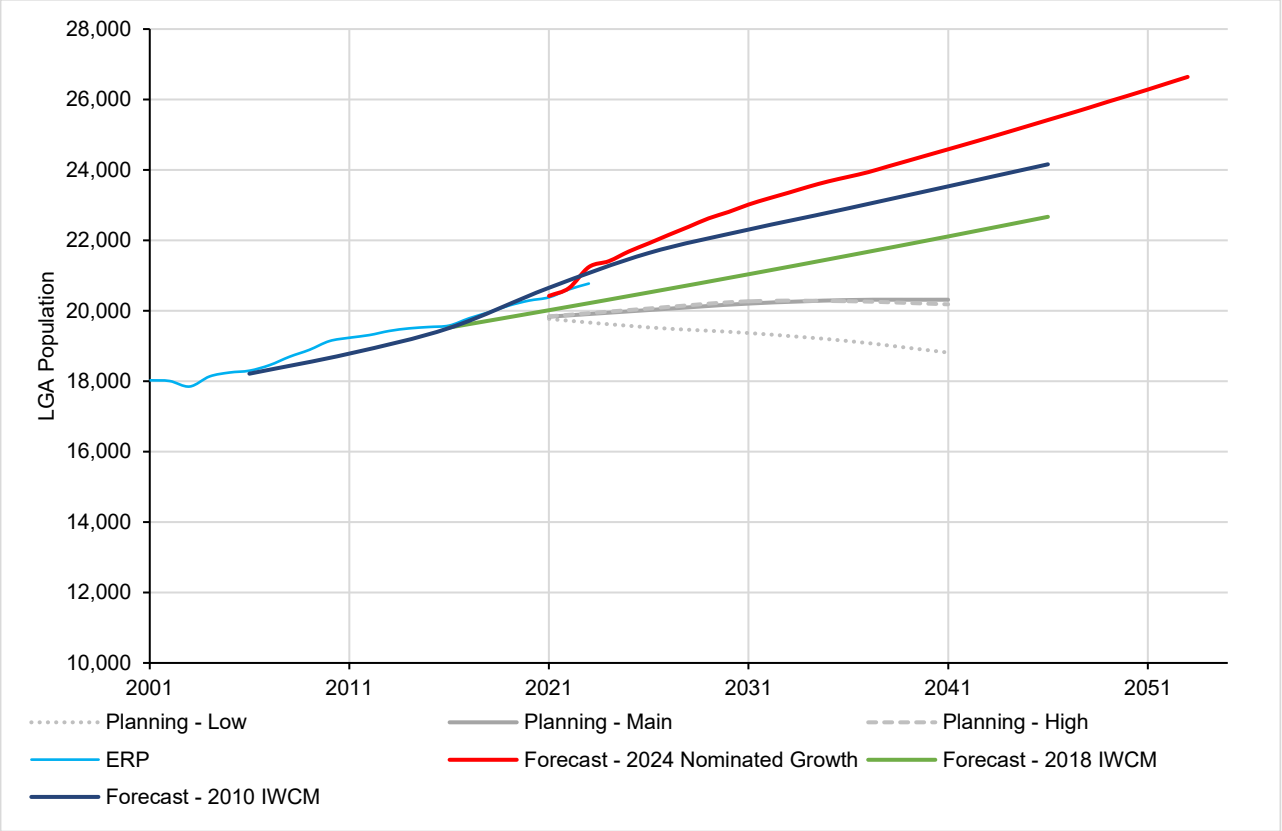

Figure 5-2: Comparison of population forecasts

6. Nambucca District Water Supply Scheme

The Nambucca District Water Supply (NDWS) scheme, shown in Figure 6-1 serves all the major urban centres including Nambucca Heads, Bowraville, Macksville, Scotts Head, Hyland Park and Valla Beach, as well as many rural properties along the pipeline routes.

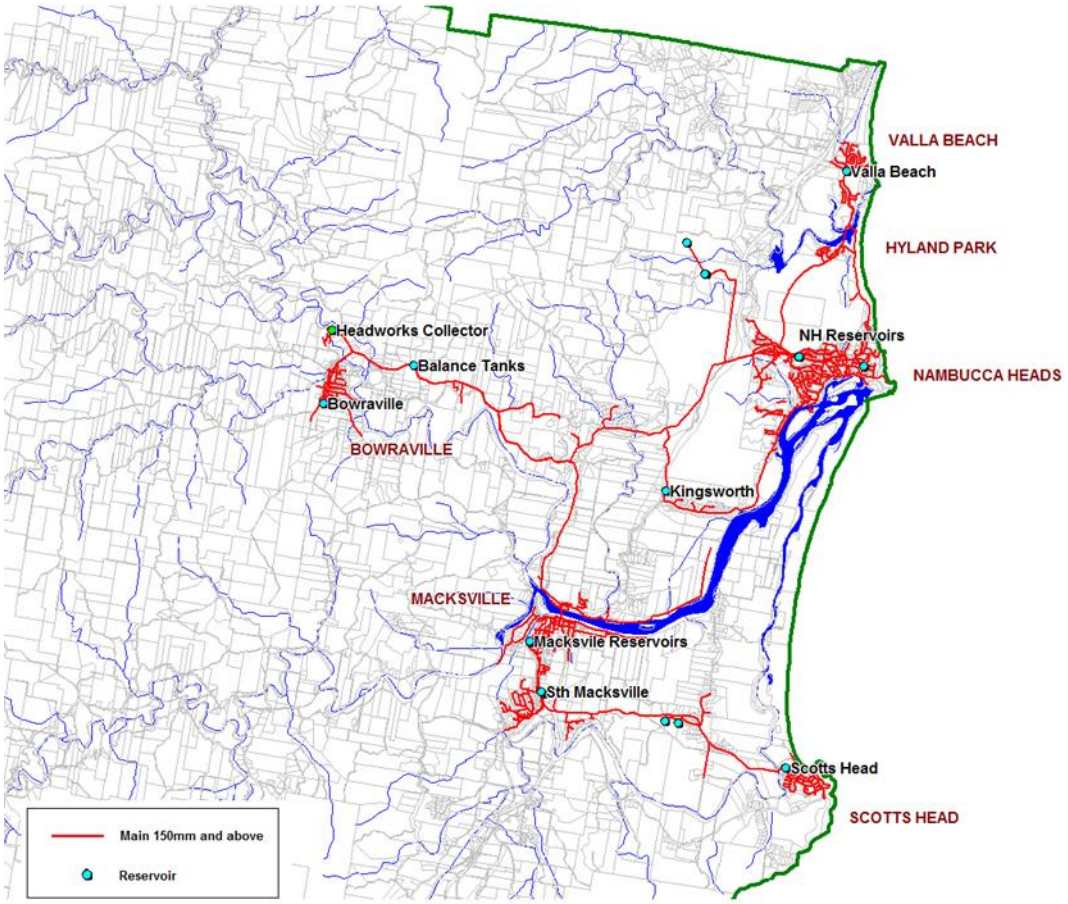

Figure 6-1: Nambucca District Water Supply Scheme

6.1 Water source

The NDWS sources water from the Bowraville bore field, located in the alluvial deposits adjacent to the Nambucca River 1 km upstream from Bowraville.

There are currently ten bores within the borefield, each approximately 12 metres deep and currently set up in 3 banks which are operated as the demand requires. Seven of the bores have a capacity of 30 litres per second while three bores have a capacity of approximately 50 litres per second.

6.2 Headworks and treatment

Council's headworks facility consists of a 4,500 ML capacity off-river storage at Bowraville, two collection tanks, two pump stations, a valve cluster and a water conditioning plant. The off river storage was built to secure the water supply during times of drought. During periods of other than low flow in the Nambucca River water can be extracted from the bores and transferred to the storage utilising the raw water collection tank and pump station via a 500 mm diameter transfer pipeline. Raw water is pumped from the bores into either or both collection tanks. One tank holds water that is pumped to the

off-river storage. The other tank holds water that is treated and distributed to the customer. A schematic of the water supply scheme is shown in Figure 6-2.

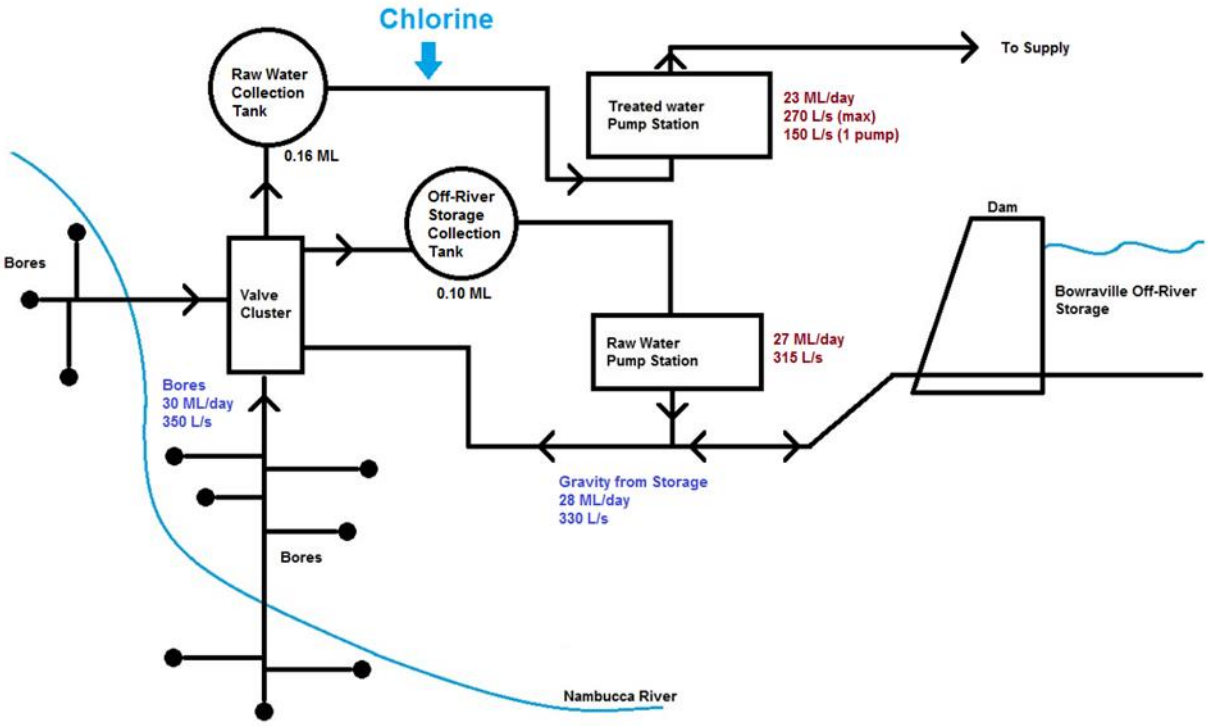

Figure 6-2: Water supply schematic

6.2.1 Raw water quality

A review of raw water quality from the Bowraville storage identified high levels of dissolved organic carbon (DOC) and also showed that the total iron concentration remains high at all depths in the storage, even though the corresponding concentrations in the bore water are not high. Whilst there are some theories on the potential sources of the DOC and iron, these cannot be supported by evidence. DOC complexed iron can be removed by conventional water treatment processes like coagulation, clarification and filtration.

6.2.2 Water treatment

The bore water treatment comprises ultraviolet light and chlorine dosing for disinfection, lime to increase calcium hardness, carbon dioxide gas to adjust pH, and fluoride. High lift pumps transfer water to the Balance Tanks with a capacity of 23.3 ML/day.

Lime deposit accumulation has been noticed in the reservoirs. This is caused by lime dosing at the treatment plant to increase alkalinity to control corrosion. Lime contains insoluble impurities that cause turbidity and settle in reservoirs, this is expected. Lime turbidity/sludge issues can only be effectively resolved by introducing filtration.

6.2.3 Treated water quality

As the water from the off-river storage has high DOC and iron the demand for chlorine is high and this results in taste and odour complaints. With the installation of the UV unit the chlorine dosage to provide the required disinfection can be reduced. A review of the disinfection requirements (Log Reduction

Values) and that achieved by UV disinfection and chlorination, should be assessed as part of the Drinking Water Management System (DWMS) review.

6.2.4 Distribution system

Treated water is pumped to a pair of balance tanks, which are located on high ground 2.8 km to the east of Bowraville. From this location and elevation, the water gravitates to all reservoirs. There is a 1.3 ML/d capacity booster pumping station downstream of the Macksville South Reservoir that can be used to service Scotts Head reservoir during periods of high demand. Figure 6-3 shows the treated water distribution network of NDWS scheme.

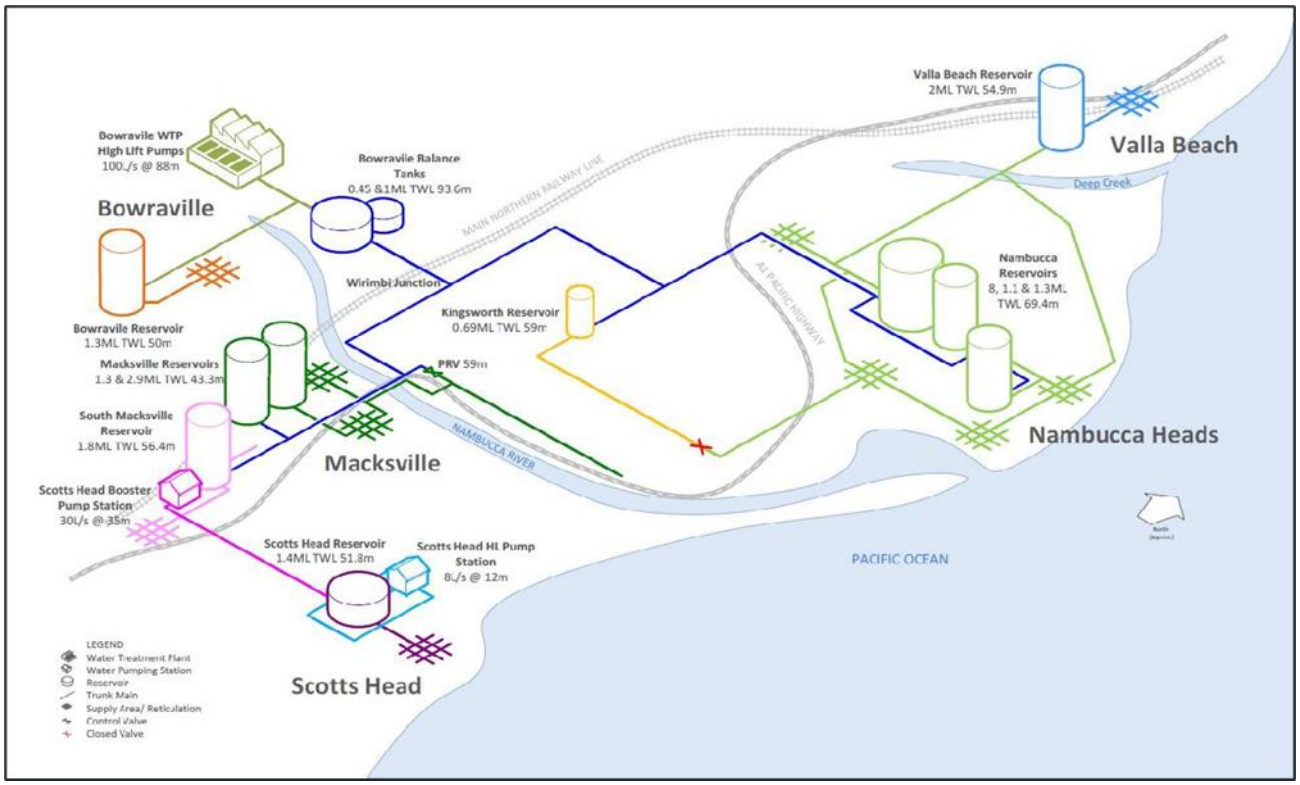

Figure 6-3: Treated water distribution network

The capacity and capability of the treated water distribution network to meet the Levels of Service has been assessed using a hydraulic model. Some minor upgrades/improvements have been identified and included in the Total Asset Management Plan (TAMP).

6.3 Non-revenue and unaccounted for water

The historical raw water volume extracted from the borefield, treated water volume and metered customer usage data were used to carry out a water balance over the NDWS Scheme. The water balance broadly highlights the amount of authorised consumption from which revenue is generated and quantifies the non-revenue water (NRW), that is the amount of water lost. The water balance is presented in Figure 6-4.

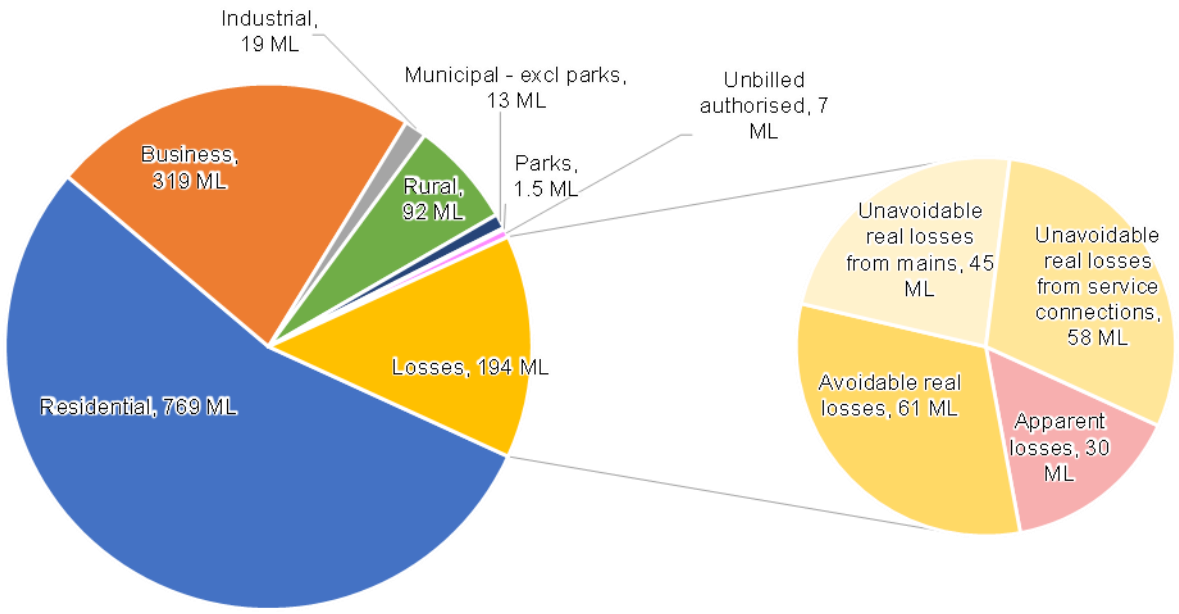

Figure 6-4: Nambucca District water supply scheme – water balance

The infrastructure leakage index (ILI) is an indicator of how effectively real losses in the distribution system are being managed at the current operating pressures. It is the preferred indicator for state and national comparisons and has been adopted by the International Water Association as the preferred indicator for international comparisons (National Water Commission, 2014) (LIBRARY, n.d.). The best performing LWUs in Australia have an ILI less than 1.5 (LIBRARY, n.d.).

Based on the above water balance, NDWS Scheme currently has an ILI (current annual real losses / unavoidable real losses) of around 1 which places it in the lowest category, which indicates a high performing network with low leakage.

The historical average unit water loss (both apparent and real) is estimated to be around 81.3 L/connection/day, which is 12.5% lower than the state median of 92 L/connection/day.

6.4 Water projections

Projections of the average year demand are used for revenue planning, dry year demand for sizing of headworks, and peak day production for sizing of water treatment works, reservoirs and pumping facilities. These projections are provided in Table 6-1, Table 6-2 and Table 6-3.

Table 6-1: NDWSS – Average year demand projections

ML/year	2021	2026	2031	2036	2041	2046	2053
Nambucca Heads							
Residential	299	331	376	401	431	471	537
Non-Res	250	251	254	254	254	254	254
NRW	67	73	82	86	91	98	110
Subtotal	616	655	712	741	777	823	901

ML/year	2021	2026	2031	2036	2041	2046	2053
Macksville							
Residential	163	175	184	191	200	209	222
Non-Res	144	154	163	171	176	176	176
NRW	42	47	53	58	61	63	65
Subtotal	349	376	399	420	437	448	463
Scotts Head							
Residential	62	67	78	95	112	121	127
Non-Res	21	21	25	25	25	25	25
NRW	15	16	18	21	24	25	26
Subtotal	99	104	122	142	161	171	178
Bowraville							
Residential	54	56	58	58	58	58	58
Non-Res	21	21	21	21	21	21	21
NRW	13	13	13	13	13	13	13
Subtotal	87	90	93	93	93	93	93
Valla Beach							
Residential	70	76	79	79	80	80	81
Non-Res	37	37	37	37	37	37	37
NRW	15	17	17	17	17	17	18
Subtotal	122	129	133	133	134	134	135
Non-growth area							
Residential	44	44	44	44	44	44	44
Non-Res	123	123	123	123	123	123	123
NRW	16	16	17	17	17	17	17
Subtotal	184	184	184	184	184	184	184
Total							
Residential	693	749	819	869	925	983	1,069
Non-Res	597	607	623	631	636	636	636
NRW	168	181	200	213	224	234	248
Total	1,458	1,537	1,642	1,712	1,786	1,853	1,954

Table 6-2: NDWSS – Unrestricted annual demand projections

ML/year	2021	2026	2031	2036	2041	2046	2053
Nambucca Heads							
Residential	322	358	409	437	472	516	592
Non-Res	286	287	290	290	290	290	290
NRW	67	73	82	86	91	98	110
Subtotal	675	718	780	813	853	905	991
Macksville							
Residential	175	189	198	207	217	227	241
Non-Res	434	444	454	463	469	469	469
NRW	42	47	53	58	61	63	65
Subtotal	651	680	705	728	747	759	775
Scotts Head							
Residential	69	72	82	99	115	123	127
Non-Res	27	27	32	32	32	32	32
NRW	15	16	18	21	24	25	26
Subtotal	112	115	132	153	171	180	185
Bowraville							
Residential	65	67	70	70	70	70	70
Non-Res	23	23	23	23	23	23	23
NRW	13	13	13	13	13	13	13
Subtotal	100	103	106	106	106	106	106
Valla Beach							
Residential	73	80	83	83	84	84	85
Non-Res	50	50	50	50	50	50	50
NRW	15	17	17	17	17	17	18
Subtotal	139	146	150	150	151	152	153
Non-growth areas							
Residential	46	46	46	46	46	46	46
Non-Res	163	163	163	163	163	163	163
NRW	16	16	17	17	17	17	17
Subtotal	225	225	226	226	226	226	226

ML/year	2021	2026	2031	2036	2041	2046	2053
Tota							
Residential	750	812	888	942	1,003	1,067	1,161
Non-Res	984	994	1,012	1,021	1,028	1,028	1,028
NRW	168	181	200	213	224	234	248
Total	1,901	1,987	2,101	2,176	2,255	2,328	2,437

Table 6-3: NDWSS – Peak day demand projections

kL/day	2021	2026	2031	2036	2041	2046	2053
Nambucca Zone							
Residential	1,781	1,954	2,194	2,328	2,464	2,638	2,942
Non-Res	1,422	1,425	1,442	1,442	1,442	1,442	1,442
NRW	386	418	463	487	515	552	613
Subtotal	3,589	3,797	4,099	4,258	4,422	4,632	4,997
Macksville Zone							
Residential	490	490	490	490	495	501	510
Non-Res	450	450	450	450	450	450	450
NRW	114	114	114	114	115	116	117
Subtotal	1,053	1,053	1,053	1,053	1,059	1,066	1,077
Valla Beach Zone							
Residential	356	386	401	401	403	405	407
Non-Res	29	29	29	29	29	29	29
NRW	79	85	88	88	89	89	89
Subtotal	464	500	518	518	521	522	525
Bowraville Zone							
Residential	321	331	346	346	346	346	346
Non-Res	68	68	68	68	68	68	68
NRW	65	67	69	69	69	69	69
Subtotal	455	466	483	483	483	483	483
Scotts Head Zone							
Residential	314	334	388	473	551	592	616
Non-Res	121	121	141	141	141	141	141
NRW	78	81	94	110	125	131	134
Subtotal	513	536	623	724	816	864	891
Bowraville BT Zone							
Residential	1	1	1	1	1	1	1
Non-Res	471	471	471	471	471	471	471
NRW	17	17	17	17	17	17	17
Subtotal	490	490	490	490	490	490	490

kL/day	2021	2026	2031	2036	2041	2046	2053
Bowraville WTP Zone							
Residential	0	0	0	0	0	0	0
Non-Res	60	60	60	60	60	60	60
NRW	6	6	6	6	6	6	6
Subtotal	66	66	66	66	66	66	66
Scotts Head Booster Zone							
Residential	5	5	5	5	5	5	5
Non-Res	140	140	140	140	140	140	140
NRW	20	20	20	20	20	20	20
Subtotal	164	164	164	164	164	164	164
South Macksville Zone							
Residential	232	296	341	381	423	466	523
Non-Res	151	158	162	162	162	162	162
NRW	71	82	91	97	104	111	120
Subtotal	453	537	594	641	689	739	806
Kingsworth Zone							
Residential	4	4	4	4	4	4	4
Non-Res	124	124	124	124	124	124	124
NRW	18	18	18	18	18	18	18
Subtotal	146	146	146	146	146	146	146
Scotts Head HL Zone							
Residential	22	22	22	22	22	22	23
Non-Res	0	0	0	0	0	0	0
NRW	4	4	4	4	4	4	5
Subtotal	26	26	26	26	27	27	28
Macksville PRV Zone							
Residential	135	135	135	135	135	135	135
Non-Res	29	69	111	153	182	182	182
NRW	31	38	45	52	56	56	56
Subtotal	194	241	290	340	373	373	373

kL/day	2021	2026	2031	2036	2041	2046	2053
Unknown*							
Residential	0	0	0	0	0	0	0
Non-Res	48	48	48	48	48	48	48
NRW	0	0	0	0	0	0	0
Subtotal	48	48	48	48	48	48	48
Total							
Residential	3,661	3,958	4,326	4,586	4,849	5,114	5,511
Non-Res	3,112	3,162	3,246	3,288	3,317	3,317	3,317
NRW	889	950	1,029	1,083	1,138	1,190	1,266
Total	7,662	8,071	8,600	8,957	9,304	9,621	10,094

*Unknown are water billed assessments which have no associated parcel number or address.

6.5 Water security assessment

The water security assessment for a water supply scheme considers the following:

- That Council's Water Access Licence (WAL) entitlement is sufficient to supply the 30-year forecast unrestricted annual demand
- The secure yield of the headworks is sufficient to supply the 30-year forecast unrestricted annual demand and provide drought resilience

6.5.1 Entitlement

Nambucca Valley Council holds one Water Access Licence (WAL) issued under the Water Management Act 2000, which relates to the Nambucca WSS. The details of this licence are shown in Table 6-4.

Table 6-4: Details of Water Access License

WAL	License owner	Category	Water Sharing Plan (WSP)	Water source	Entitlement (ML/year)
Primary water source – Bowraville Bores					
40034	Nambucca Valley Council	Local Water Utility	Nambucca Unregulated and Alluvial Water Sources 2016	North Arm – Nambucca River Water Source	5,000

The 30-year forecast unrestricted annual demand is estimated to be 2,437ML/year which is less than Council's total entitlement. Hence Council's entitlement is sufficient to meet the forecast 30-year water requirements.

6.5.2 Yield

A secure yield analysis was undertaken for the headworks in 2016. The analysis assessed the climate change secure yield to be about 2,440 ML/year for the service level nominated by Council. Further modelling done with streamflows up to March 2023 showed that the 2019/20 drought was not the critical drought and there was no change to the previously estimated secure yield.

The following license conditions apply for extraction from the Nambucca bore field:

- The volume extracted from the bore field shall not exceed more than 5,000 ML in any 12-month period commencing 1st July.
- The volume extracted from the bore field shall not exceed more than 11.44 ML per day when the flow in the Nambucca River at the upstream Nambucca River gauge (205015) is equal to or less than the ninetieth percentile flow for the corresponding month.
- No water shall be extracted when the flow in the Nambucca River at the upstream Nambucca River gauge (205015) falls below the ninety fifth percentile flow for the corresponding month.
- Water must not be extracted from the bore field between dusk (7 pm) and dawn (5 am) when the flow in the Nambucca River at the upstream Nambucca River gauge (205015) is:
  - For the months January to September flow was between 80 and 120 ML/d
  - For the months October to December flow was between 40 and 120 ML/d

The secure yield is dependent on the operating rules in the water sharing plan. The current water sharing plan rules provide different access for different months of the year and different times of the day, are complicated and therefore are difficult to comply with. Action 2.3 of The North Coast Regional Water Strategy is to Establish sustainable extraction limits for surface water and groundwater sources. The document states that 'This action will transition water sharing to a regime that is based on science and evidence. It will establish the extraction capacity of the region's surface water and groundwater systems and use this new knowledge as the starting point for water sharing'.

The water sharing plan is currently under review. To contribute to this review Council undertook simulations to test the sensitivity of the license conditions to the yield. The results of the sensitivity analysis are provided in Table 6-5.

Table 6-5: Sensitivity analysis of license conditions to the secure yield

Pumping condition	Leakage	Storage release	Storage in-flow	Explicit Irrigation allowance	Yield (ML/a) – 1^{0}C warming
As per WAL – 2016 study	0.6ML/d	Transparent	Transparent	With	2,440
As per Wal – streamflows extended to 2023	0.6ML/d	Transparent	Transparent	With	2,440
F<=5 ML/d, TDEL=0 ML/d F>5 ML/d TDEL=0.3 x (F-5) ML/d	None	Transparent	Transparent	With	2,370
F<=5 ML/d, TDEL=0 ML/d F>5 ML/d TDEL=0.6 x (F-5) ML/d	None	Transparent	Transparent	With	2,890

Pumping condition	Leakage	Storage release	Storage in-flow	Explicit Irrigation allowance	Yield (ML/a) – 1°C warming
F<=5 ML/d, TDEL=0 ML/d F>5 ML/d TDEL=0.3 x (F-5)ML/d (to be proposed)	0.6ML/d	Leakage/ Spill	Captured	With	2,540
F<=5 ML/d, TDEL=0 ML/d F>5 ML/d TDEL=0.6 x (F-5) ML/d	0.6ML/d	Leakage/ Spill	Captured	With	2,820

The highlighted condition will be proposed by Council for consideration in the Water Sharing Plan review. The secure yield will have to be re-modelled to comply with the revised license conditions once the Water Sharing Plan review has been completed.

7. Macksville sewerage scheme

7.1 Scheme description

Most of Macksville's residents are served by the Macksville Sewerage Scheme (MSS) consisting of a network of gravity sewers and pump stations and a centralised sewage treatment plant (STP). There are several properties within the Macksville urban area that are connected to the Nambucca Water Supply Scheme but not connected to the Macksville Sewerage Scheme. The Nambucca River Tourist Park (North Macksville) pumps effluent from a private pump station into the catchment of SPS 1 while the Macksville Showground and two adjacent rural properties (Northwest of Macksville) also pump through a private line and discharge into SPS2.

Properties connected to the Macksville Sewerage Scheme drain into one of 17 sewage pumping stations (SPS) catchments. The Macksville Sewerage Scheme is shown in Figure 7-1.

There are Oyster growers on the Nambucca River. Oyster growers on the Nambucca River have faced multiple closures due to various factors, including sewage leaks and algal blooms. Any sewage leak into the Nambucca River triggers a mandatory 21 day oyster harvest shut down. Multiple shutdowns were triggered in 2021 and 2022 during heavy rainfall events. The performance of the Macksville sewerage scheme therefore has an impact on the local oyster Industry.

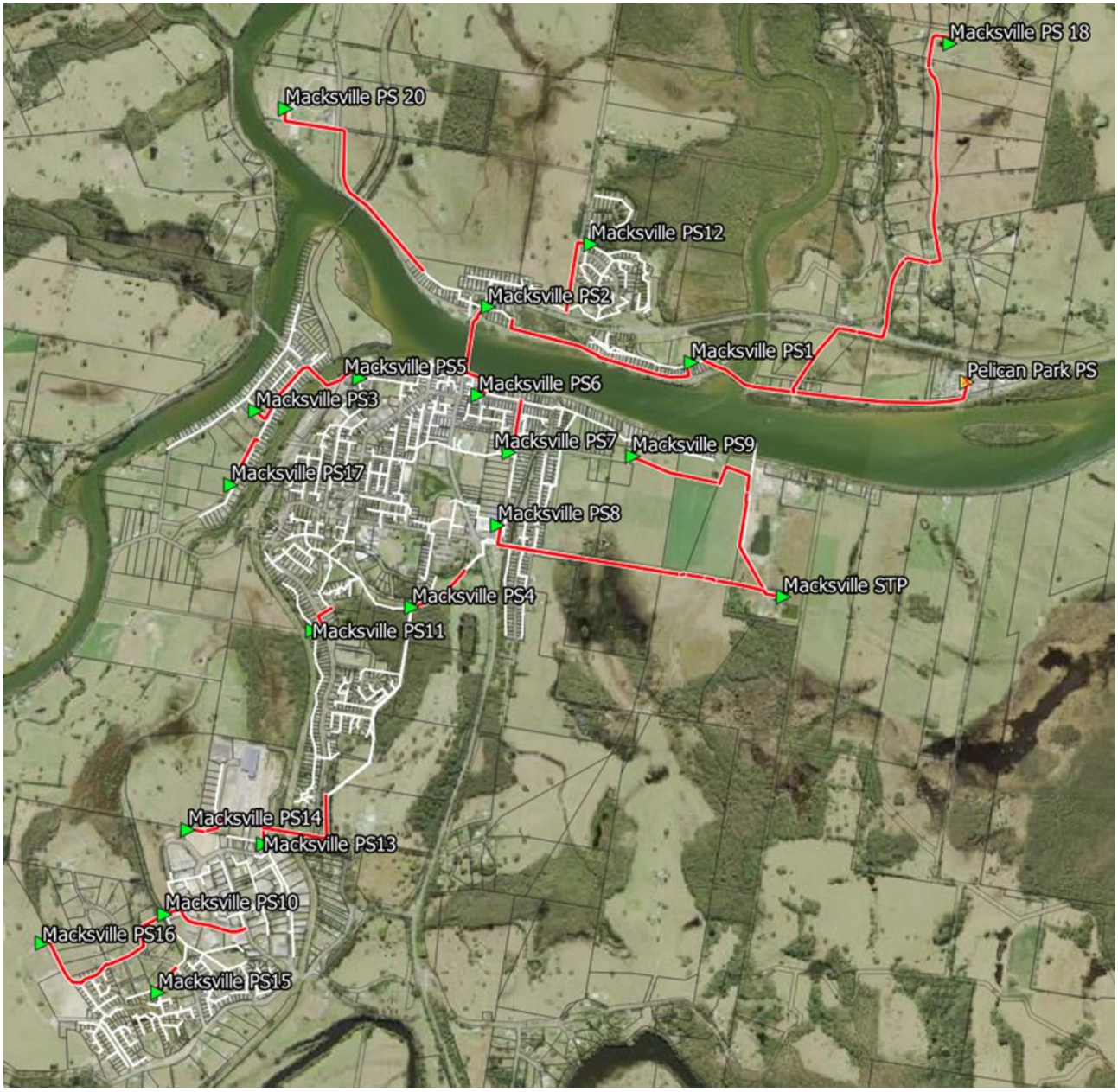

Figure 7-1: Macksville sewerage scheme

STP inflow volume for Macksville STP was provided from 2019 to 2023. The historical daily inflows in conjunction with rainfall records are shown in Figure 7-3. There are increases in STP inflow in months where there is higher rainfall compared to drier months. A correlation between the river levels and the STP inflows has also been noticed. This suggests that there could be infiltration into the sewer system. The sewage pumping station (SPS) hierarchy is shown in Figure 7-2. Two SPS's pump into the Macksville STP; SPS8 and SPS9.

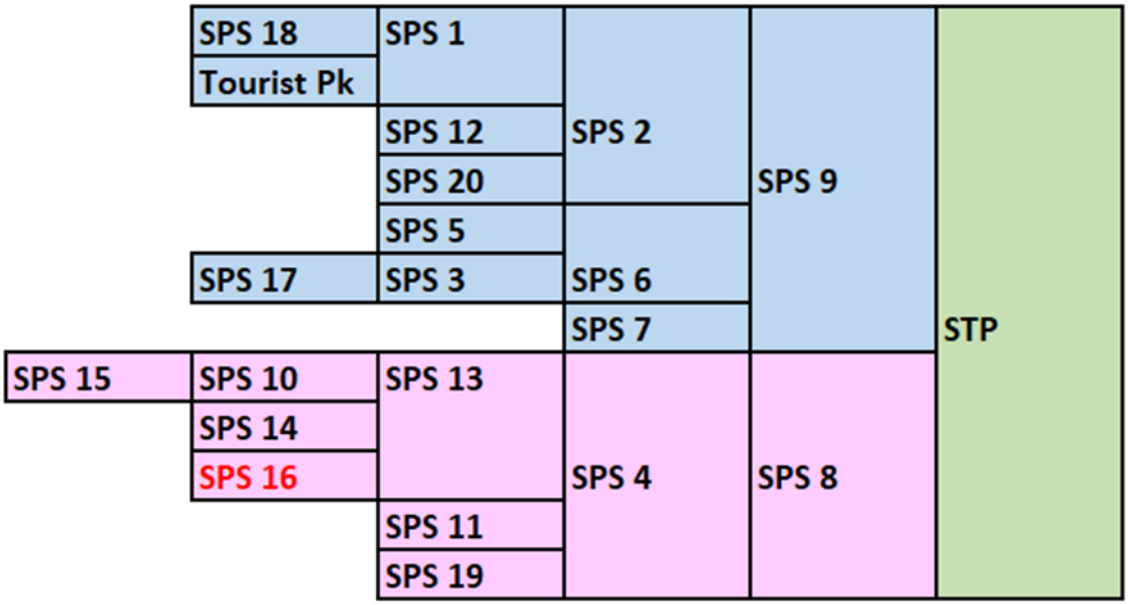

Figure 7-2: Macksville sewerage scheme SPS hierarchy diagram

7.2 Hydraulic loadings

The STP inflow data from 2019 to 2021 was provide. This is shown in Figure 7-3.

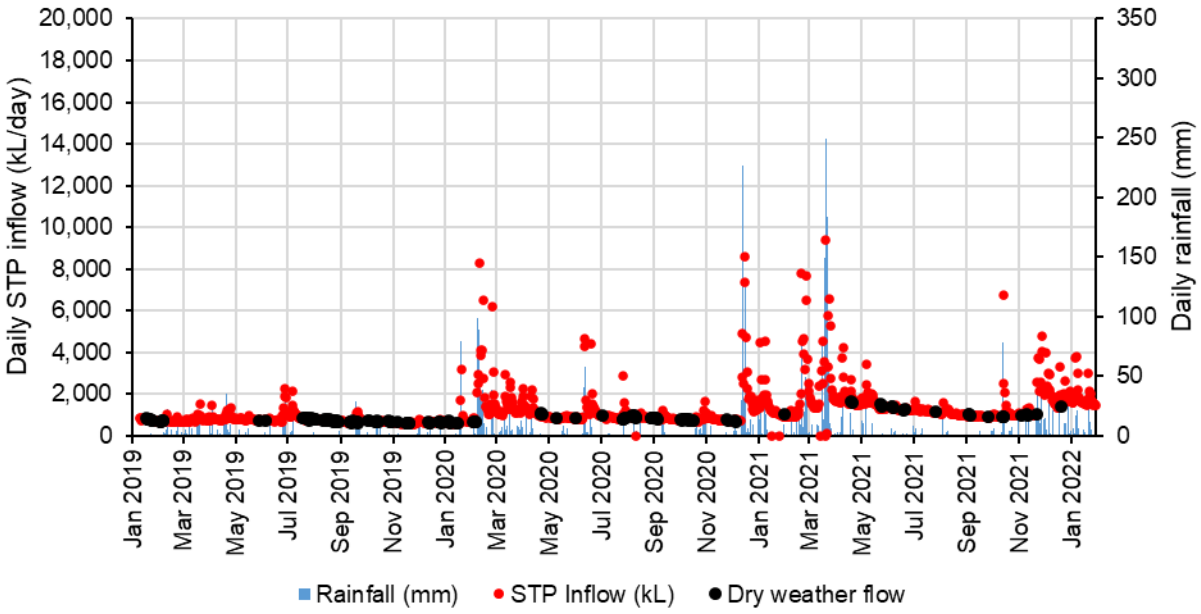

Figure 7-3: Historical daily inflows at Macksville STP

The average dry weather flow (ADWF) was assessed from STP inflows and from the water consumption data. The ADWF was assessed as being 1,098 kL/day with a hydraulic loading of about 230 L/EP/day. On the understanding that Council will progressively address the infiltration issues within the network the ADWF projections are estimated starting with a current hydraulic load of 240 L/EP/day but progressively reducing to 200 L/EP/day (similar to the hydraulic loading of the other sewerage schemes). The reduction is assumed to be linear over the 30-year planning horizon.

7.3 Projections

Council nominated growth rates and total new connections within specific SPS catchments of Macksville SS. The projected ETs, peak & off-peak EPs and ADWFs are summarised in Table 7-1, Table 7-2, Table 7-3 and Table 7-4.

Table 7-1: Projected Equivalent Tenements (ETs) – Macksville sewerage scheme

Projected ETs	2023	2028	2033	2038	2043	2048	2053
Macksville STP							
Residential	1,449	1,561	1,611	1,663	1,726	1,792	1,859
Non-residential	808	872	922	972	986	986	986
Total	**2,256**	**2,433**	**2,533**	**2,635**	**2,712**	**2,778**	**2,844**

Table 7-2: Projected Off-peak Equivalent Persons (EPs) – Macksville sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Macksville STP							
Residential	3,110	3,366	3,481	3,597	3,737	3,881	4,023
Non-residential	1,802	1,951	2,066	2,181	2,214	2,214	2,214
Total	**4,911**	**5,317**	**5,547**	**5,778**	**5,951**	**6,094**	**6,236**

Table 7-3: Projected Peak Equivalent Persons (EPs) – Macksville sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Macksville STP							
Residential	3,626	3,920	4,054	4,194	4,372	4,560	4,749
Non-residential	2,045	2,207	2,335	2,463	2,499	2,499	2,499
Total	**5,671**	**6,128**	**6,390**	**6,657**	**6,871**	**7,059**	**7,248**

Table 7-4: Projected ADWF – Macksville sewerage scheme

Projected ADWF[a]	2023	2028	2033	2038	2043	2048	2053
Macksville STP							
ADWF (Off-peak) (kL/day)	1,115	1,207	1,259	1,311	1,350	1,383	1,415
ADWF (peak) (kL/day)	1,287	1,391	1,450	1,511	1,559	1,602	1,645

7.4 Assessment of collection and transfer system

The performance of the collection and transfer system was assessed using a hydraulic model. One of the objectives of the modelling was to select an ARI rainfall event as a containment standard for the network. The performance of the network was assessed for different ARI events. The modelling also identified catchments with high infiltration. These catchments will be prioritised in Council's sewer relining program. The infiltration parameters for these catchments were adjusted to reflect this relining, and the assessment was updated accordingly.

Council selected the 1 in 5 year (20% annual exceedance probability), 2-hour event as the containment standard for the Macksville collection and transfer system. Council's view is that this standard would be tolerable to the oyster industry. Also, during such a storm event, contamination of the river from other sources could also lead to the shut down of oyster harvesting.

Achieving the desired performance will require a combination of capacity upgrade and inflow/infiltration reduction. The sewer re-lining program and the upgrades/augmentations identified to service growth and meet the levels of service have been included in the Total Asset Management Plan (TAMP).

7.5 Sewage treatment pant

The Macksville sewage treatment plant (STP) is a 5,500 EP capacity Intermittently Decanted Extended Aeration (IDEA) activated sludge secondary treatment system. As shown in Figure 7-4, the plant originally consisted of the following process units:

- An inlet works, including venturi flume, screening system and grit arrester,
- An IDEA reactor,
- An effluent catch pond,
- An effluent pumping station,
- A UV disinfection system,
- 2 x sludge lagoons*.

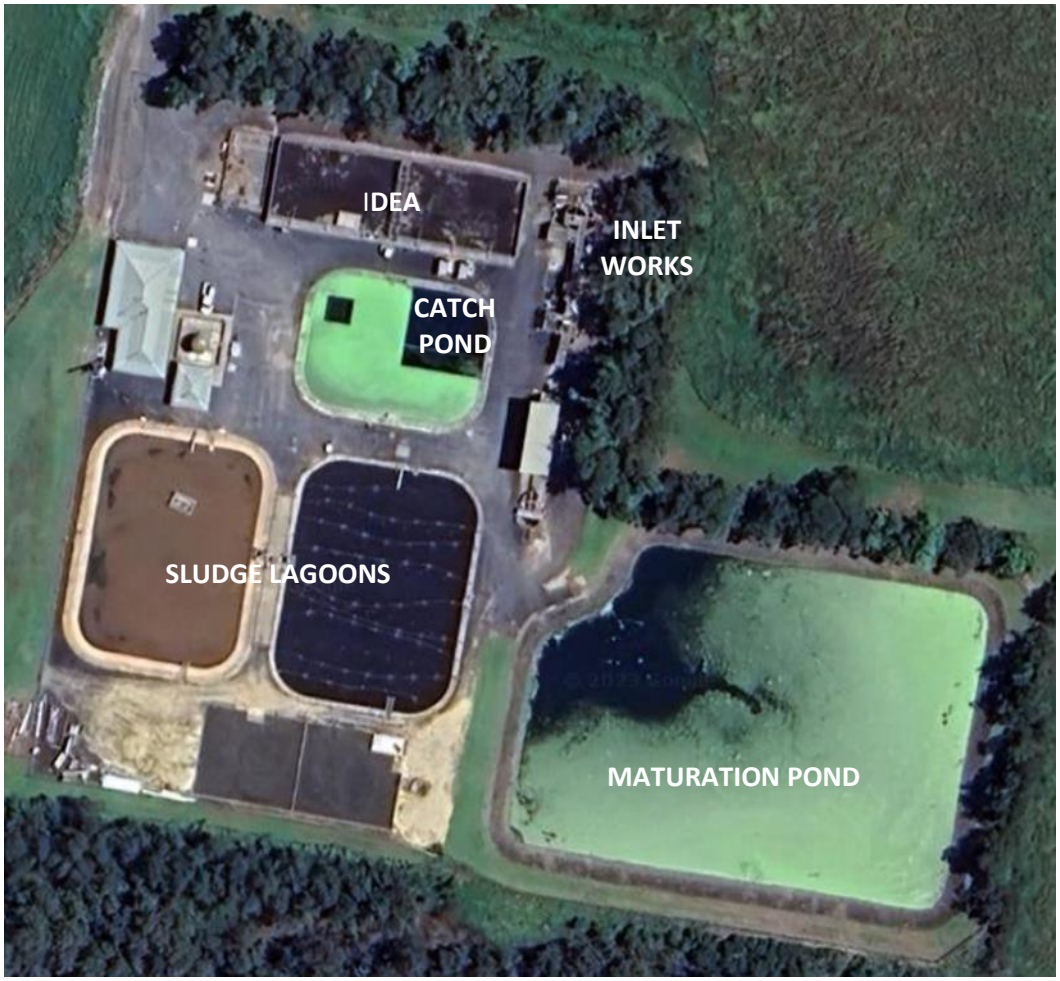

Figure 7-4: Aerial view of Macksville STP

Raw sewage flows to the inlet works where it is screened by a mechanical screen followed by grit removal in a grit removal tank. Screened and de-gritted wastewater flows into the IDEA tank to undergo biological treatment for the removal of organics and ammonia, which is further assisted by alum dosing. The sludge generated in the IDEA tank and in the catch pond is discharged to one-of-two aerobic digesters for further nitrification and stabilisation. The decanted effluent from the IDEA tanks is discharged to the catch pond and then overflows to the maturation (storage) pond from where it is pumped through the UV unit for disinfection prior to being discharged to the Nambucca river.

The design criteria for the Macksville STP are summarised in Table 7-5.

Table 7-5: Design criteria for Macksville STP

Parameter	Units	Value
Design Capacity (Process)	EP	5,500
Hydraulic loading	L/EP/day	240
Hydraulic Allowance		
Average Dry Weather Flow (ADWF)	kL/d	1,320
Peak Wet Weather Flow (PWWF)	L/s	107
Biochemical Oxygen Demand (BOD_5)	g/EP/d	55
Chemical Oxygen Demand (COD)	g/EP/d	2.3 x BOD
Total Kjeldahl Nitrogen (TKN)	g/EP/d	12
Total Phosphorus (TP)	mg/L	8
Alkalinity (as $CaCO_3$)	mg/L	160
Suspended Solids (SS)	g/EP/d	55

7.5.1 Performance assessment

7.5.1.1 License requirements

The Environment Protection Licence (EPL 579) specifies the concentration and load limits for discharge to waters and are summarised below in Table 7-6.

Table 7-6: Macksville STP EPL requirements

Pollutant	Units	90%-ile	100%-ile	Load limit (kg)
Biological Oxygen Demand (BOD)	mg/L	10	20	5,009
Faecal Coliforms	CFU/100mL	200	600	-

Pollutant	Units	90%-ile	100%-ile	Load limit (kg)
Nitrogen (ammonia)	mg/L	2	5	-
Nitrogen (total)	mg/L	10	20	6,679
Oil & Grease	mg/L	5	10	3,340
pH		-	6.5 – 8.5	-
Phosphorus (total)	mg/L	0.5	1.0	334
Total Suspended Solids (TSS)	mg/L	20	30	6,885

7.5.1.2 Assessment

A 72-hour composite sampling of the influent sewage was undertaken in 2023. Table 7-7 below summarises the STP performance assessed from grab samples taken during the sampling.

Table 7-7: Macksville STP process unit performance assessment

Treatment Unit	Reduction Rate		Final Effluent Concentration (mg/L)	EPL
	IDEA Tank	Catch/Balance Pond		90%-ile (mg/L)
BOD_5	95%	95%	5	10
SS	98%	99%	1	20
TN	84%	88%	10	10

The assessment shows that the plant is meeting the EPL conditions. However, there have been some issues with algal growth in the catch ponds which results in increased turbidity, pH and affects the performance of the UV unit.

7.5.2 Capacity assessment

A capacity assessment was undertaken for the Macksville STP to identify the headroom available within each process unit and determine the timing for augmentation based on the forecast growth. The results are summarised in Table 7-8.

Table 7-8: Capacity assessment of Macksville STP

Treatment Unit/System	Unit Capacity	Original Design Criteria	Current Load (72 hr Monitoring)	Future Load (2053)	Outcome
Inlet Works	5,500 EP Max. inflow 190 L/s Bypass flow 44 L/s	 Max. pumped inflow up to 190 L/s. Max. wet weather inflow up to 1,680 L/EP/d Excess inflow up to 44 L/s by-passed to effluent storage pond	4,146 EP Peak Instantaneous flow up to 178 L/s.	6,236 off-peak EP Peak Instantaneous flow up to 305 L/s (combined capacity SPS 8 and SPS 9).	Over design capacity – 2024 for the nominated containment standard
IDEA Reactor	5,500 EP 303 kg BOD/d 1,320 kL/d	5,500 EP 55 gBOD/EP 240 L/EP/d	4,146 EP 31 gBOD/EP 123 kg BOD/d 1,164 kL/d	6,236 off-peak EP 55 gBOD/EP 343 kg BOD/d 1,497 kL/d	Over design capacity in 2032
Catch/ Balance Tank	5,500 EP 864 m^3 at TWL Detention time at TWL: 15 hours (ADWF)	5,500 EP 240 L/EP/d ADWF: 16 L/s	4,146 EP 290 L/EP/d ADWF: 13.5 L/s Detention time at TWL: 17.8 hours (ADWF)	6,236 EP 240 L/EP/d ADWF: 17.3 L/s Detention time at TWL: 13.9 hours (ADWF).	Under design capacity

Treatment Unit/System	Unit Capacity	Original Design Criteria	Current Load (72 hr Monitoring)	Future Load (2053)	Outcome
Alum Dosing Unit		Inflow ortho-P: 8 mg/L Ortho-P: 2.5 mg/L after primary dosing Ortho-P: 0.7 mg/L after secondary dosing	Inflow ortho-P: 3.2 mg/L Inflow TP: 5.7 mg/L Ortho-P: 0.14 mg/L TP: 0.15 mg/L after secondary dosing		Cannot be assessed
Sludge Lagoons	5,500 EP Effective volume: 2,286m^3 WAS production plus chemical sludge: 229 kg TSS/day Thickened sludge volume: 1,949 m^3	55 gBOD/EP/d Sludge Production Rate: 0.85 kg TSS/kgBOD WAS chemical sludge: 20% Thickened sludge concentration: 2.5%	4,164 EP 31 gBOD/EP/d WAS production plus chemical sludge: 133 kg TSS/day Thickened sludge volume: 1,080 m^3	6,236 EP 55 gBOD/EP/d Required effective volume: 2,380 m^3 WAS production plus chemical sludge: 285 kg TSS/day Thickened sludge volume: 2,380 m^3	Over design capacity in 2053.

Treatment Unit/System	Unit Capacity	Original Design Criteria	Current Load (72 hr Monitoring)	Future Load (2053)	Outcome
Sludge Drying Beds	Required Area: 560 m^2	73 kg/m^2/annum Stabilized solids production: 112 kg/d Required area: 560 m^2	31 gBOD/EP/d 4,164 EP Stabilized solids production: 130 kg/d Required area: 665 m^2	55 gBOD/EP/d 6,236 EP Stabilized solids production: 285 kg/d Required area: 1,426 m^2	Over design capacity – 2024

A two-stage upgrade is proposed for the Macksville STP to address the capacity, performance issues and the renewals required. The works in each stage are summarised below:

Stage 1:

- Augment the capacity of the inlet works
- Maximise the capacity of the existing Reactor
- Address the algal growth in the catch pond
- Augment the sludge drying capacity
- Replace the mechanical and electrical equipment (at end of life)
- Address work health and safety issues

Stage 2:

- Augment the capacity of the plant to service growth

8. Scotts Head sewerage scheme

8.1 Scheme description

A network of eight Sewage Pump Station (SPS) collects sewage generated within the serviced area and transports the sewage to the Scotts Head STP via pumping station PS1. The Scotts Head sewerage scheme is shown in Figure 8-1 and the SPS hierarchy is shown in Figure 8-2.

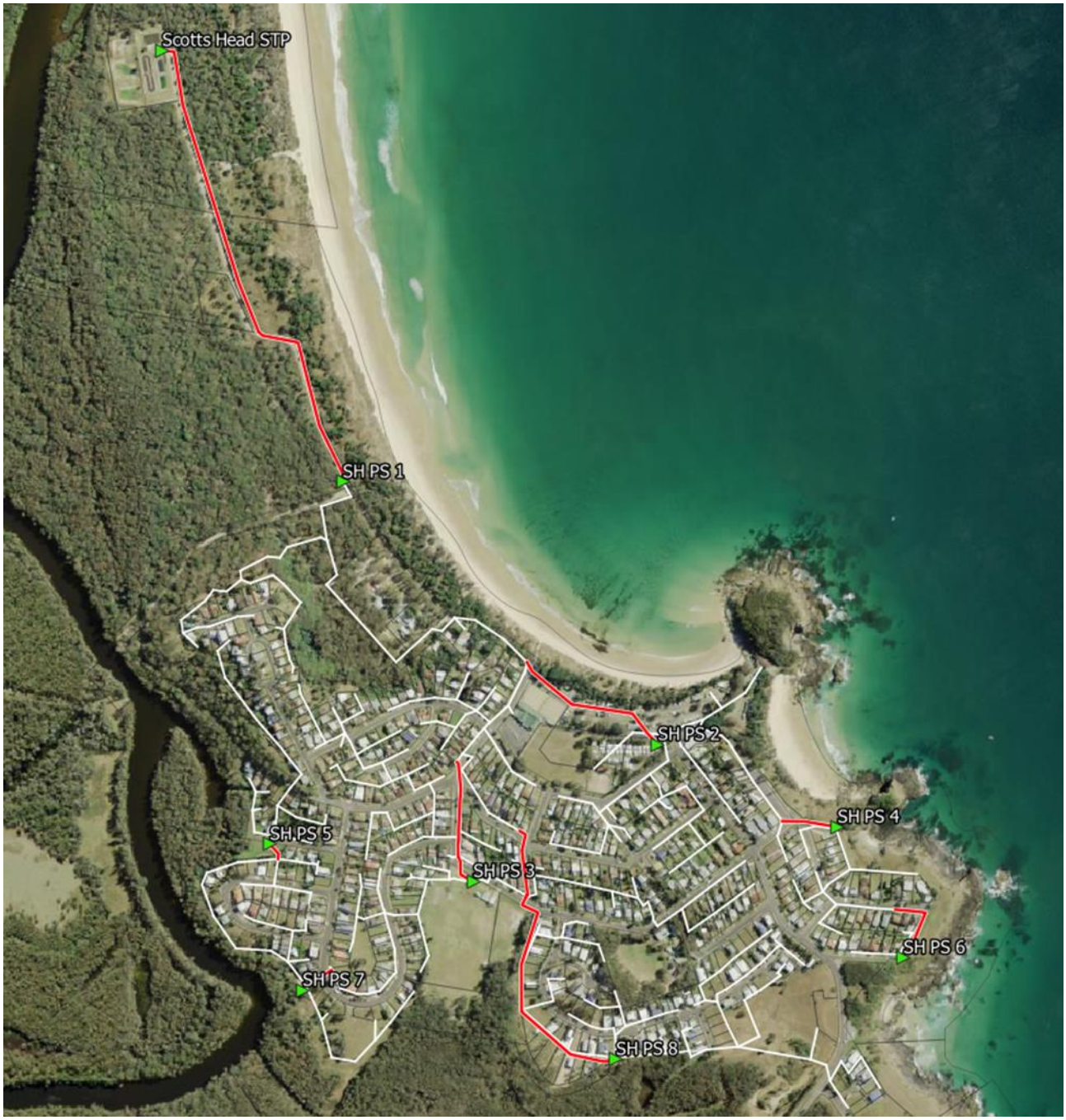

Figure 8-1: Scotts Head sewerage scheme

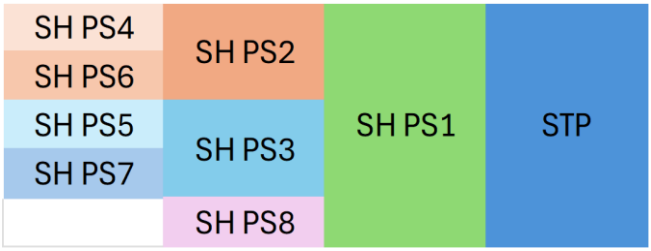

Figure 8-2: Scotts Head sewerage scheme SPS hierarchy diagram

8.2 Hydraulic loadings

STP inflow volume for the Scotts Head STP was provided from 2019 to 2022. The historical daily inflows in conjunction with rainfall records are shown in Figure 8-3.

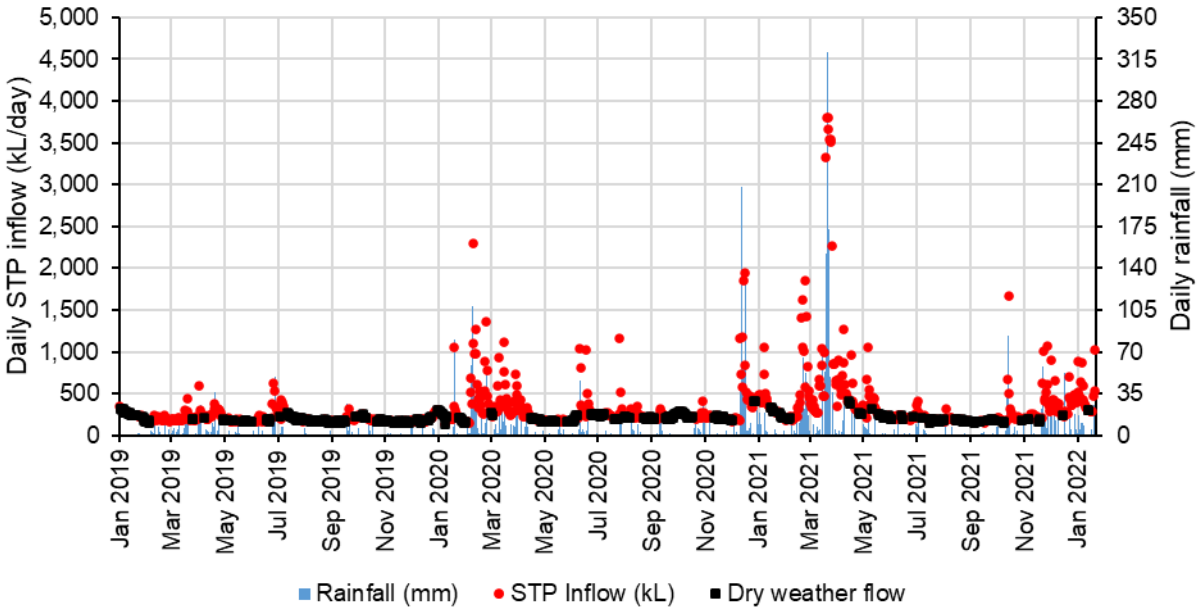

Figure 8-3: Historical daily inflows at Scotts Head STP

The average dry weather flow (ADWF) was assessed from STP inflows and from the water consumption data. The ADWF was assessed as being 200 kL/day with a hydraulic loading of about 150 L/EP/day. This value is low for NSW country town sewerage schemes.

8.3 Projections

Council nominated growth rates and total new connections within specific SPS catchments of Scotts Head sewerage scheme. The projected ETs, peak & off-peak EPs and ADWFs are summarised in Table 8-1, Table 8-2 and Table 8-3.

Table 8-1: Projected Equivalent Tenements (ETs) – Scotts Head sewerage scheme

Projected ETs	2023	2028	2033	2038	2043	2048	2053
Scotts Head STP							
Residential	604	634	709	838	933	975	994
Non-residential	101	113	126	126	126	126	126
Total	**705**	**747**	**835**	**964**	**1,059**	**1,101**	**1,120**

Table 8-2: Projected Off-peak Equivalent Persons (EPs) – Scotts Head sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Scotts Head STP							
Residential	1,279	1,365	1,544	1,856	2,092	2,217	2,304
Non-residential	345	373	404	404	404	404	404

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Total	**1,624**	**1,738**	**1,948**	**2,260**	**2,496**	**2,621**	**2,708**

Table 8-3: Projected Peak Equivalent Persons (EPs) – Scotts Head sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Scotts Head STP							
Residential	1,487	1,574	1,753	2,065	2,301	2,426	2,513
Non-residential	772	800	831	831	831	831	831
Total	**2,259**	**2,374**	**2,584**	**2,896**	**3,132**	**3,257**	**3,344**

Table 8-4: Projected ADWF – Scotts Head sewerage scheme

Projected ADWF	2023	2028	2033	2038	2043	2048	2053
Scotts Head STP							
ADWF (kL/day) Off-peak	200	214	240	278	307	323	333
ADWF (kL/day) Peak	278	285	314	346	381	399	410

8.4 Assessment of collection and transfer system

Performance

The performance of the collection and transfer system was assessed using a hydraulic model. The performance of the network was assessed for different ARI events. The modelling also identified catchments with high infiltration. These catchments will be prioritised in Council's sewer relining program. The infiltration parameters for these catchments were adjusted to reflect this relining, and the assessment was updated accordingly. Council selected the 1 in 5 year (20% annual exceedance probability), 2-hour event as the containment standard for the collection and transfer system.

Growth

Future growth is predominantly expected in SPS Catchment 8. The extent of development will depend on the site constraints and the planning approvals. Accordingly, system upgrades to service two growth scenarios have been considered; 150 Equivalent Tenements (ETs), and 300 ETs. The system upgrades to accommodate this growth is shown in Figure 8-4.

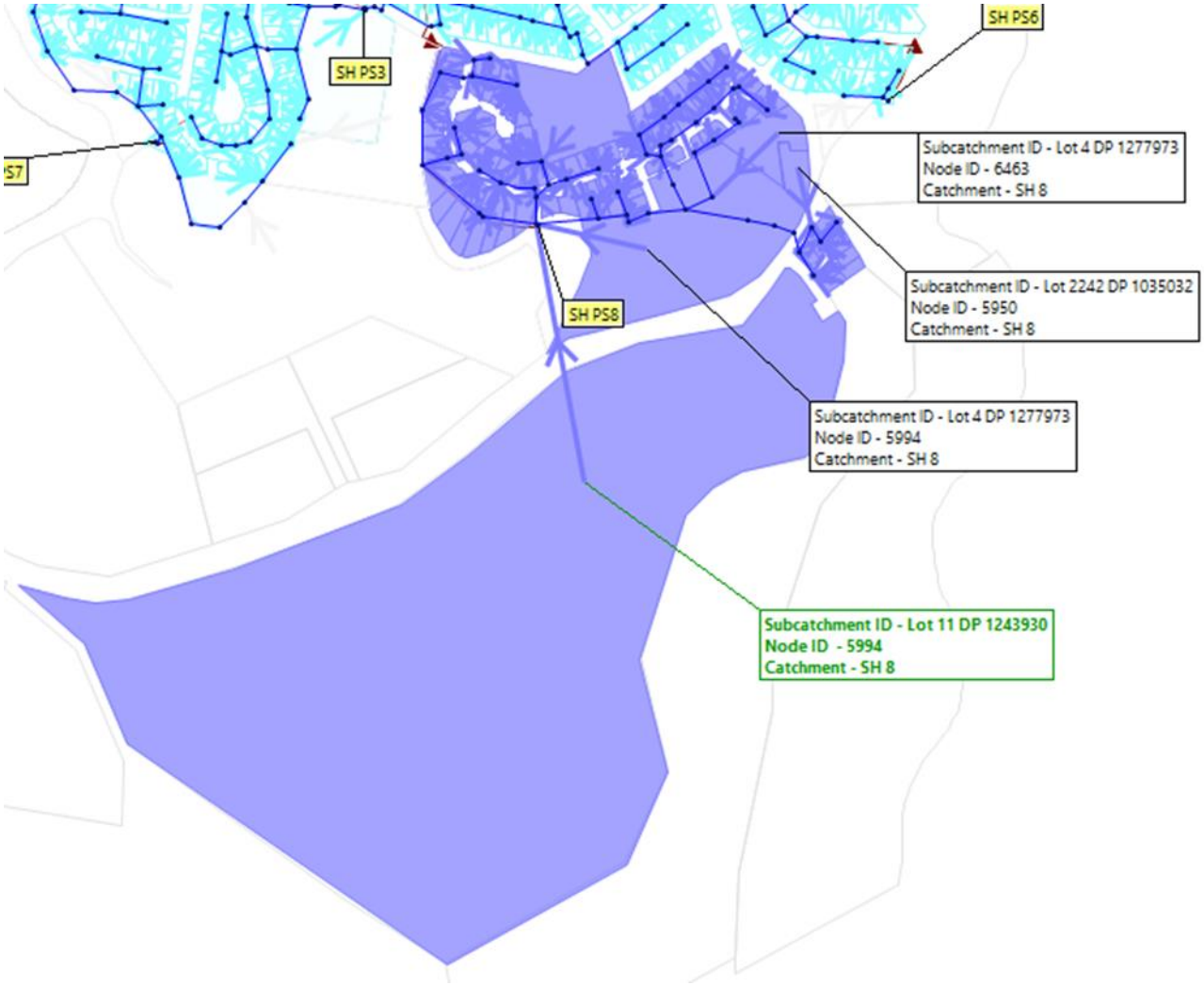

Figure 8-4: Scotts Head – Future growth in catchment SPS8

Achieving the desired performance will require a combination of capacity upgrade and inflow/infiltration reduction. The sewer re-lining program and the upgrades/augmentations identified to service growth and meet the levels of service have been included in the Total Asset Management Plan (TAMP).

8.5 Sewage treatment pant

The Scotts Head STP uses a Pasveer Channel to treat raw sewage from the town of Scotts Head. The treated effluent is discharged into the exfiltration beds for final disposal. An aerial view of the STP is provided in Figure 8-5. The treatment processes are comprised of the following main treatment units:

- One inlet pit with manual bar screens,
- One (1) Pasveer channel (2,000 EP),
- Two (2) sludge lagoons,
- Two (2) sludge drying beds,
- Two (2) exfiltration ponds, and

Figure 8-5: Aerial view of Scotts Head STP

The design criteria for the Scotts Head STP are summarised in Table 8-5.

Table 8-5: Design criteria for Scotts Head STP

Process Unit	Capacity
STP Design Capacity	
Design Population	2,000 EP
Hydraulic Capacity	
Average Dry Weather Flow (ADWF)	480 kL/day (@ 240 L/EP/day)
Peak Dry Weather Flow (PDWF)	960 kL/day (2 x ADWF)
Peak Wet Weather Flow (PWWF)	3,360 kL/day (7 x ADWF)
Biological / nutrient capacity	
Biochemical oxygen demand, BOD_5	70 g/EP/day
Suspended solids, SS	70 g/Ep/day
Sewage Receiving	

Process Unit	Capacity
1 x inlet works	2,000 EP 240 L/EP/d 5.6 L/s ADWF
Secondary Treatment	
1 x Pasveer channel	2,000 EP
Biosolids Management	
Stabilisation Grade B is targeted for biosolids.	
2 x sludge lagoons	70 gBOD/EP/d 86 kgTSS/d
2 x sludge drying beds	31,273 kg/annual (70g BOD/EP/d, 2,000 EP)

8.5.1 Performance assessment

8.5.1.1 License requirements

The Environment Protection Licence (EPL 579) specifies the concentration and load limits for discharge to waters and are summarised below:

1. Discharge to waters – Outlet from Pasveer Channel flowing into exfiltration beds. This requires continuous volume monitoring (kL/day) and is limited to 2,500 kL/day
2. Total volume monitoring – Sewage pump station number 1. Daily volume monitoring by calculation (pump capacity multiplied by operating time)
3. Effluent quality monitoring – In the outlet sump from the Pasveer channel. This requires monitoring of BOD, faecal coliforms, Oil and Grease and TSS, sampled at least once every calendar month and at a minimum of four week intervals.
4. Groundwater monitoring bore – Groundwater monitoring bore 2. This requires monitoring of conductivity, faecal coliforms, total Nitrogen, pH and total Phosphorus, sampled quarterly.
5. Groundwater monitoring bore – Groundwater monitoring bore 3. Monitored in same way as EPA identification point 4.

8.5.1.2 Assessment

Table 7-7 below summarises the STP performance assessed from grab samples taken during the 72-hour composite sampling.

Table 8-6: Scotts Head STP process unit performance assessment

Treatment Unit	Reduction Rate Across Process Unit				
	BOD_5	SS	TN	NH_3-N	TP
Pasveer channel	96 %	95 %	87 %	98 %	91 %

8.5.2 Capacity assessment

A capacity assessment was undertaken for the Scotts Head STP to identify the headroom available within each process unit and determine the timing for augmentation based on the forecast growth. The results are summarised in Table 7-8.

Table 8-7: Capacity assessment of Scotts Head STP

Process Unit	Unit Capacity	Design Criteria	Current Load	Current Capacity Assessment	Future Capacity Assessment (Peak EP)
Inlet chamber	480 kL/d	2,000 EP 240 L/EP/d 5.6 L/s ADWF	ADWF Off-peak: 3.7 L/s Peak load: 4.8 L/s	Under design capacity 85% of design ADWF at Peak	Capacity equal to maximum capacity of inlet pipe.
Pasveer Channel 1 off	2,000 EP	Hydraulic capacity 7 x ADWF = 40L/s	No wet weather assessment	Not assessed.	
		480 kL/d – ADWF 16.7 L/s, (3 x ADWF) for full treatment.	Peak inflow 412kL/d 14.4 L/s (3 x peak ADWF)	Under design capacity 86% of design flow (3 x peak ADWF) for full treatment	At 180L/EP/d, 480kL/d = 2,670 EP. This will exceed the peak EP in around 2035.
		140 kg BOD/d at 70 gBOD/EP/d	41 kg.BOD/d,	Under design capacity 29% of design BOD load	At 30 gBOD/EP/d the BOD capacity is 4,700 EP. This is not exceeded in the 30-year horizon.
		140 kg SS/d at 70g SS/EP/d	63 kg.SS/d	Under design capacity 45% of design SS load	At 45g.SS/EP/d the capacity corresponds to 3,100 EP. This is exceeded around 2043.
		20 kg.TKN/d at 10 gTKN/EP/d*	Avg: 21 kgTKN/d at 11 gTKN/EP/d (@200L/EP/d)	1,870 EP 5% over design TKN load	
Sludge Lagoons 2 off	Total effective volume: 735 m^3	70 gBOD/EP/d 86 kgTSS/d Required effective volume: 623 m^3	27 gBOD/EP/d 288 kgTSS/d Required effective volume: 205 m^3	Under design capacity 33% of total effective volume	At 180L/EP/d and 30gmBOD/EP/day 735 m3 effective sludge lagoons can accommodate 4,500 EP – not exceeded in 30-years

Process Unit	Unit Capacity	Design Criteria	Current Load	Current Capacity Assessment	Future Capacity Assessment (Peak EP)
Sludge Drying Beds 2 off	225 m^2 each, or 450 m^2 in total,	31,273 kg/annual (70g BOD/EP/d, 2,000 EP) Required 428 m^2 at 73 kg/m^2/annum.	10,273 kg/annual (27 g BOD/EP/d, 1,533 EP) Required of 141 m^2 at 73 kg/m^2/annum	Under design capacity 33% of total effective volume	At 180L/EP/d and 30gmBOD/EP/day 450 m^2 sludge drying bed area can accommodate 4,900 EP – not exceeded in 30 years

The assessment identified some current and short-term capacity issues with the Pasveer channel. An options assessment was undertaken to evaluate and assess options for a capacity augmentation

8.5.3 Options assessment

The following two options were evaluated and assessed for the augmentation of the Scotts Head STP.

Option 1:

- A new inlet works upstream of the existing Pasveer channel.
- A new balance tank upstream of the existing Pasveer channel.
- Improve performance of aeration in the Pasveer channel, and other necessary modifications

Option 2:

- A new inlet works upstream of the existing Pasveer channel.
- A new 4,000 equivalent persons (EP) clarifier downstream of the Pasveer channel.
- Continuous aeration in the Pasveer channel, and other necessary modifications.

Figure 8-6 and Figure 8-7 show how these options will be accommodated at the current site.

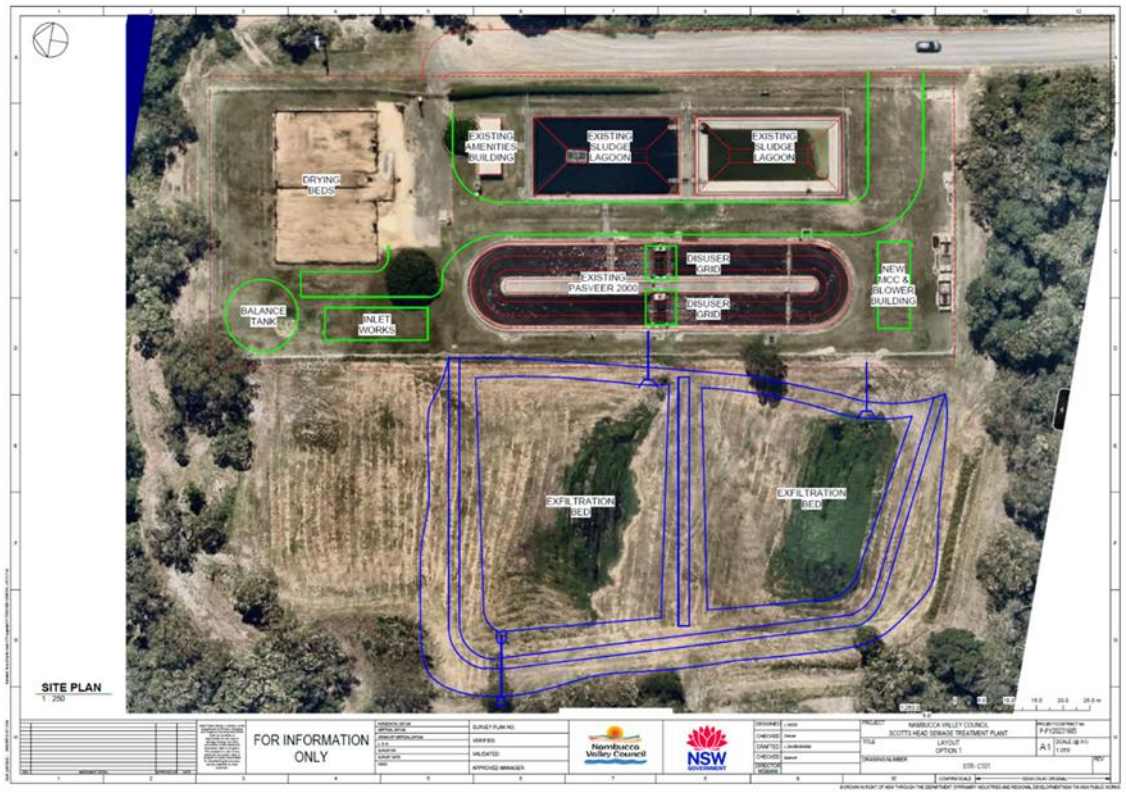

Figure 8-6: Scotts Head STP augmentation option 1 – Balance Tank

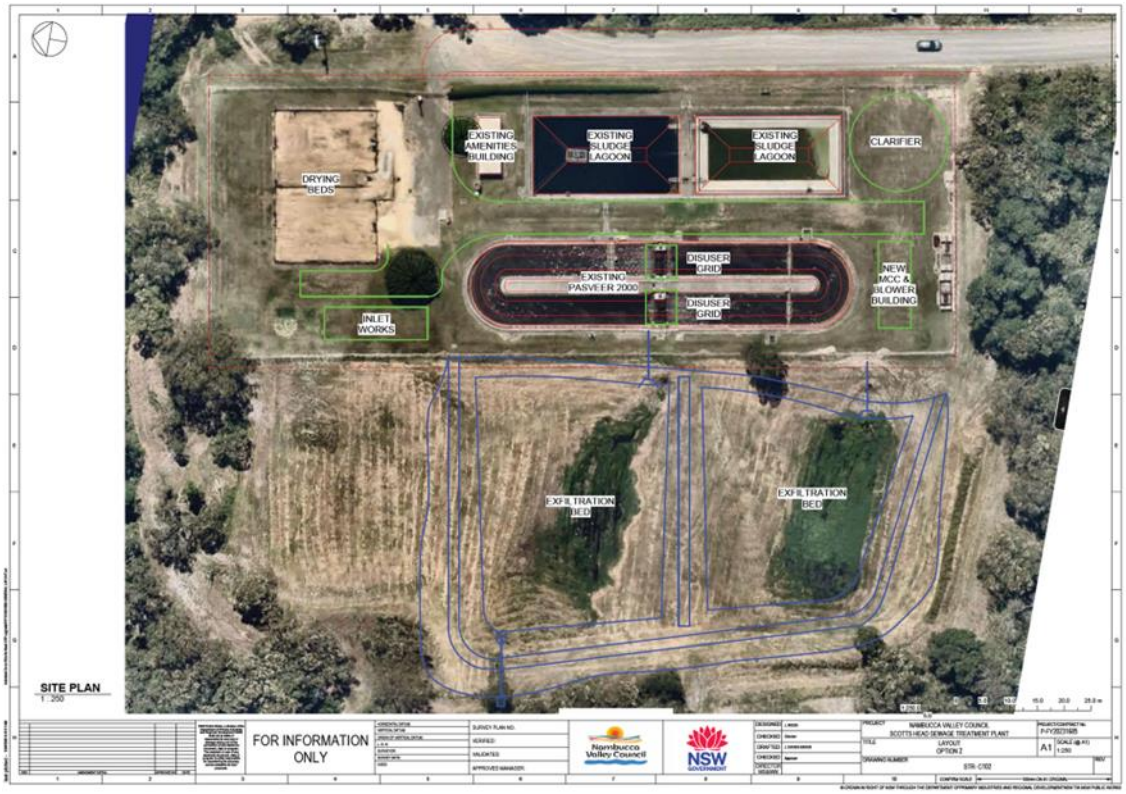

Figure 8-7: Scotts Head STP augmentation option 2 – Clarifier

A multicriteria assessment was undertaken to select the preferred option. This is presented in Table 8-8. Option 1 was selected as the preferred option from the assessment.

Table 8-8: Multi-criteria assessment for Scotts Head STP augmentation options

Criteria	Criteria description	Option 1 (balance tank) – Unweighted qualitative score	Option 2 (clarifier) – Unweighted qualitative score	Weighting	Option 1 (balance tank) – Weighted quantitative score	Option 2 (clarifier) – Weighted quantitative score
High-level capital expenditure	Capital expenditure.	$4.18 million	$6.67 million	15 %	0.4	0.2
Qualitative operational expenditure	Operational expenditure.	Moderate to good	Moderate	25 %	1.0	0.8
Footprint	Area taken up by the upgrade and location relative to available area.	Moderate	Moderate	10 %	0.3	0.3
Modelled treated effluent quality	Overall modelled treated effluent quality.	Good	Moderate to good	10 %	0.5	0.4
Wet weather performance	Performance in wet weather.	Moderate to good	Moderate	10 %	0.4	0.3
Constructability	Ease of construction.	Moderate	Poor to moderate	10 %	0.3	0.2
Operability and maintainability	Ease of O&M and reliability.	Moderate to good	Moderate	20 %	0.8	0.6
Total					3.7	2.7

9. Nambucca Heads sewerage scheme

9.1 Scheme description

Properties within Nambucca Heads connected to the Nambucca Heads Sewerage Scheme (NHSS) drain into one of 14 SPS catchments). From here SPS4 and SPS8 pump the sewage to the Nambucca Heads

STP. Properties within the Valla Beach and Hyland Park urban areas that are connected to the NHSS, drain into one of 14 SPS catchments.

There are several properties on the edges of the Nambucca Heads and Valla Beach urban areas that are connected to the NDWSS but not connected to the NHSS. Most properties in the Kingsworth district are not connected to any sewerage scheme but are instead served by on-site sewage management systems. The Nambucca Heads Sewerage Scheme is shown in Figure 9-1 and the SPS hierarchy is shown in Figure 9-2 and Figure 9-3.

Figure 9-1: Nambucca Heads sewerage scheme

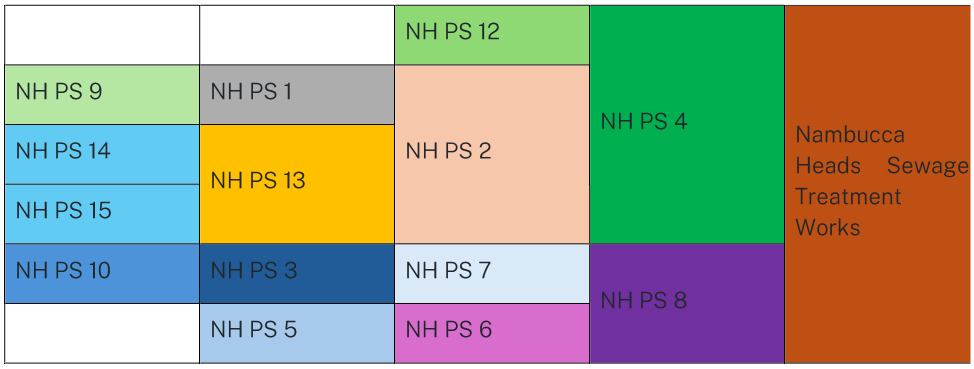

Figure 9-2: Nambucca Heads sewerage scheme SPS hierarchy diagram – Nambucca Heads to STP

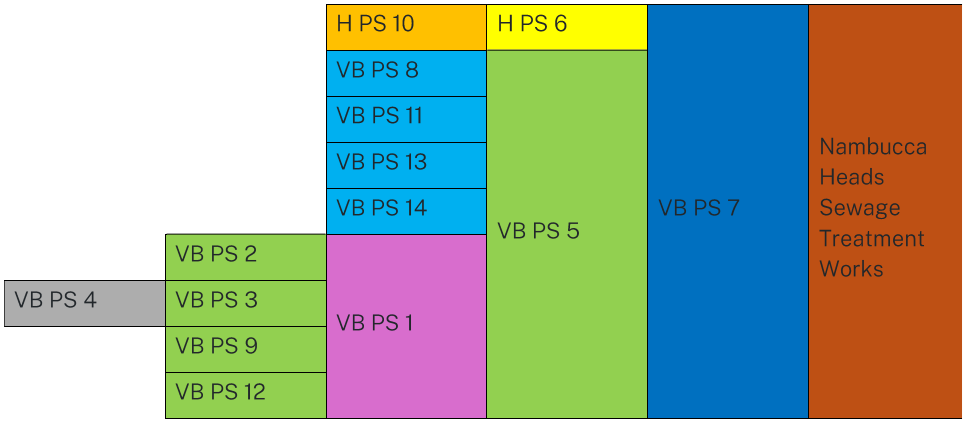

Figure 9-3: Nambucca Heads sewerage scheme SPS hierarchy diagram – Valla Beach to STP

9.2 Hydraulic loadings

STP inflow volume for the Nambucca Heads STP was provided from 2019 to 2022. The historical daily inflows in conjunction with rainfall records are shown in Figure 9-4.

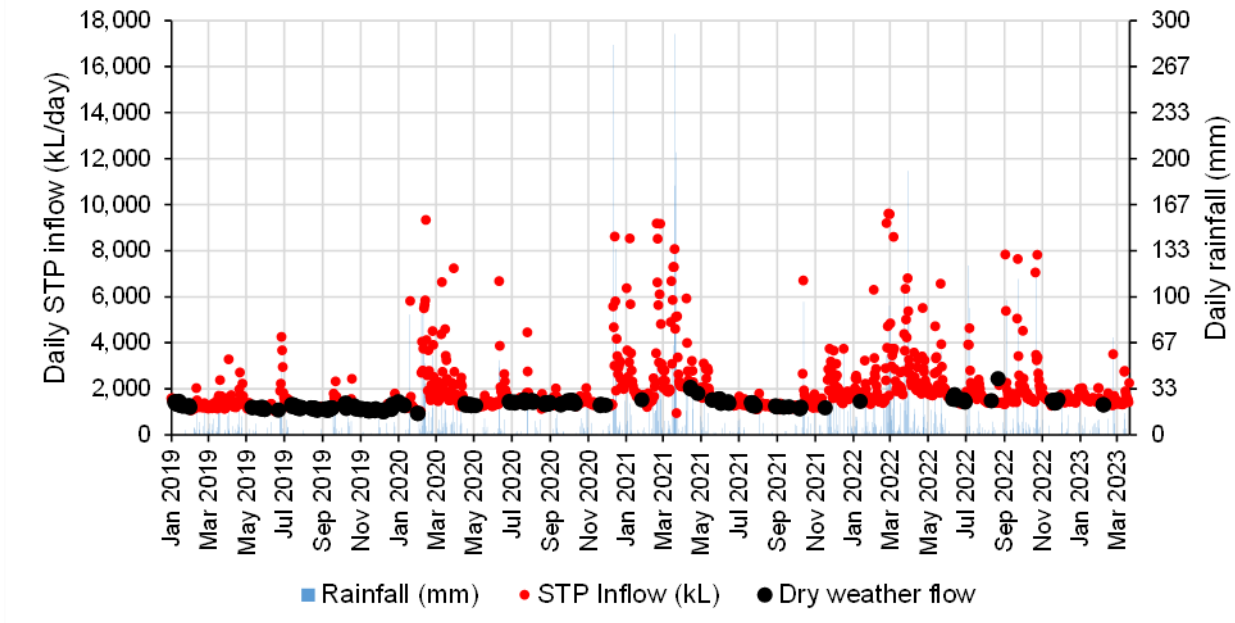

Figure 9-4: Historical daily inflows at Nambucca Heads STP

The average dry weather flow (ADWF) was assessed from STP inflows and from the water consumption data. The ADWF was assessed as being 1,500 kL/day with a hydraulic loading of about 160 L/EP/day. This value is low for NSW country town sewerage schemes.

9.3 Projections

Council nominated growth rates and total new connections within specific SPS catchments of Scotts Head sewerage scheme. The projected ETs, peak & off-peak EPs and ADWFs are summarised in Table 9-1, Table 9-2 and Table 9-3.

Table 9-1: Projected Equivalent Tenements (ETs) – Nambucca Heads sewerage scheme

Projected ETs	2023	2028	2033	2038	2043	2048	2053
Nambucca STP							
Residential	3,487	3,835	4,146	4,311	4,522	4,801	5,118
Non-residential	1,234	1,246	1,259	1,259	1,259	1,259	1,259
Total	**4,721**	**5,081**	**5,405**	**5,570**	**5,780**	**6,060**	**6,377**

Table 9-2: Projected Off-peak Equivalent Persons (EPs) – Nambucca Heads sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Nambucca STP							
Residential	6,919	7,634	8,277	8,622	9,067	9,651	10,319
Non-residential	2,355	2,409	2,467	2,467	2,467	2,467	2,467
Total	**9,274**	**10,042**	**10,744**	**11,088**	**11,534**	**12,118**	**12,786**

Table 9-3: Projected Peak Equivalent Persons (EPs) – Nambucca Heads sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Nambucca STP							
Residential	8,873	9,763	10,553	10,982	11,549	12,275	13,104
Non-residential	3,336	3,350	3,350	3,350	3,350	3,350	3,350
Total	**12,209**	**13,113**	**13,904**	**14,332**	**14,899**	**15,625**	**16,454**

Table 9-4: Projected ADWF – Nambucca Heads sewerage scheme

Projected ADWF	2023	2028	2033	2038	2043	2048	2053
Nambucca STP							
ADWF (off-peak) (kL/day)	1,500	1,624	1,738	1,793	1,865	1,960	2,068
ADWF (peak) (kL/day)	1,975	2,121	2,249	2,318	2,410	2,527	2,661

9.4 Assessment and collection and transfer system

The performance of the collection and transfer system was assessed using a hydraulic model. The performance of the network was assessed for different ARI events. Council selected the 1 in 5 year (20%

annual exceedance probability), 1-hour event as the containment standard for the collection and transfer system.

The upgrades/augmentations identified to service growth and meet the levels of service have been included in the Total Asset Management Plan (TAMP).

9.5 Sewage treatment pant

Nambucca Heads STP is a 15,000 EP capacity with biological treatment provided by Intermittently Decanted Extended Aeration (IDEA) tanks. As shown in Figure 9.5, the treatment process consists of the following process units:

- An inlet works, including one grit tank,
- 2 x IDEA reactors (1 x surface aeration (SA) 5,000EP, 1 x diffused aeration (DA 10,000EP),
- 1 x Balance pond, 2 x catch tanks
- 4 x Sludge lagoons,
- 1 x UV disinfection system
- 6 x Sludge drying beds

An aerial view of the STP is provided in Figure 9-5.

Figure 9-5: Aerial view of Nambucca Heads STP

The design criteria for the Scotts Head STP are summarised in Table 9-5.

Table 9-5: Design criteria for Nambucca Heads STP

Parameter	Units	Value
Total Design Capacity (Process)	EP	15,000
Hydraulic Allowance		
Hydraulic Loading	L/EP/d	240
Average Dry Weather Flow (ADWF)	kL/d	3,600 (42 L/s)
Peak Wet Weather Flow (PWWF)	L/s	292 (7 x ADWF)
Biochemical Oxygen Demand (BOD_5)	g/EP/d	60
Total Nitrogen (TN)	g/EP/d	17
Total Phosphorus (TP)	mg/L	3
Suspended Solids (SS)	g/EP/d	77
Sewage Receival 1 x inlet works 1 x grit tank	L/s	 Max 452 Max 530
Secondary Treatment 1 x IDEA reactor with 2 x catch tanks 1 x IDEA Lagoon 1 x Balance Pond	 EP EP	 10,000 EP 5,000 EP Max outflow to UV = 292 L/s Max outflow in wet weather to effluent discharge point = 648 L/s
Chemical Dosing Alum storage and dosing system for phosphorus (P) removal Caustic storage and dosing system for phosphorus pH correction		 Usage rate = 400 L/d Usage rate = 33 L/d

Parameter	Units	Value
Biosolids Management		
Sludge lagoons		4 sludge lagoons - Lagoons 1 & 2: 2 x 750 m^3 effective volume - Lagoons 3 & 4: 2 x 1,100 m^3 effective volume
Sludge drying beds		6 sludge drying beds (3 x 1,350 m^2 & 3 x 1,458 m^2)
Sludge dehydrator		Operationally, the existing unit can process 3 kL of wet sludge per day or about 375 kL/8-hour day

9.5.1 Performance assessment

9.5.1.1 License requirements

The Environment Protection Licence (EPL 579) specifies the concentration and load limits for discharge to waters and are summarised below in Table 9-6.

Table 9-6: Nambucca Heads STP EPL requirements

Pollutant	Units	90%-ile	100%-ile	Annual Load Limit (kg)
Biological Oxygen Demand (BOD_5)	mg/L	10	20	13,140
Faecal Coliforms	CFU/100mL	200	600	-
Nitrogen (total)	mg/L	10	20	13,140
Oil & Grease	mg/L	5	10	6,570
pH		-	6.5 – 8.5	-
Phosphorus (total)	mg/L	0.5	1.0	657
Total Suspended Solids (TSS)	mg/L	15	30	19,710

9.5.1.2 Assessment

Table 9-7 below summarises the STP performance assessed from grab samples taken during the 72-hour composite sampling.

Table 9-7: Nambucca Heads STP process unit performance assessment

Pollutant	Avg. Effluent Concentration (mg/L or CFU/100mL)	Avg. Reduction Rate	Final Effluent Mass Flow	Measured 90%-ile (mg/L)	EPL 90%-ile (mg/L)	No. of Exceedances	Max	EPL 100%-ile (mg/L)	No. of Exceedances
BOD_5	2.4	99.3%	3.6	4.6	10	1	11	20	0
SS	5.9	98.5%	8.9	11.1	15	3	28	30	0
TN	4.2	94.5%	6.3	5.7	10	0	10	20	0
TP	0.25	98.5%	0.4	0.40	0.5	9	0.65	1.0	0
FC	20	-	-	81.0	200	3	320	600	0
OG	1.0	-	-	1.2	5	0	2.00	10	0

The assessment shows that the performance of the Nambucca STP complies with the EPL requirements.

9.5.2 Capacity assessment

A capacity assessment was undertaken for the Nambucca Heads STP to identify the headroom available within each process unit and determine the timing for augmentation based on the forecast growth. The results are summarised in Table 9-8.

Table 9-8: Capacity assessment of Nambucca Heads STP

Process Unit	Design Capacity	Under / Over Design Capacity
STP Design Capacity		
Design Population	15,000 EP	
Average Dry Weather Flow (ADWF)	3,600 kL/d (@ 240 L/EP/d) ADWF: 41.7 L/s	Under Design Loading
Design Dry Weather Flow (DDWF)	125 L/s (@ 3 x ADWF)	
Peak Wet Weather Flow (PWWF)	292 L/s (@ 7 x ADWF)	
Biological / nutrient capacity		
Biochemical oxygen demand, BOD_5	1,050 kg/d @ 70 g/EP/d	Under Design Loading
Total Nitrogen, TN	255 kg/d @ 17 g/EP/d	Under Design Loading
Suspended solids, SS	1,155 kg/d @ 77 g/EP/d	Under Design Loading
Total Phosphorus, TP	45 kg/d @ 3 g/EP/d	Under Design Loading
Inlet Works		
1 x inlet works	Max 452 L/s from SPSs. Max 31 L/s from the supernatant PS	To be determined after completion of the sewer modelling
1 x grit tank	Max surface loading: 100m^3/m^2/hr at 292 L/s (7 x ADWF)	

Process Unit	Design Capacity	Under / Over Design Capacity
Secondary Treatment		
IDEA reactor 2 (diffused aeration system)	10,000 EP	Over Design Capacity - 2044
IDEA reactor 1 (surface aerator)	5,000 EP	Over Design Capacity - 2044
	15,000 EP in total	Over Design Capacity - 2044
2 x catch tanks	detention time 6 hours at ADWF. Effective catch volume: 900 m^3.	Under Design Capacity
1 x Balance Pond	Max outflow to UV = 292 L/s in dry weather flow	
	Max outflow in wet weather to effluent discharge point = 805 L/s	
	detention time 4 hours at ADWF. Effective balance volume: 600 m^3.	Under Design Capacity
Chemical Dosing		
Alum storage and dosing system for phosphorus (P) removal	Usage rate = 400 L/d, Max. capacity of dosing pump: 40 L/s.	Under Design Capacity
Biosolids Management		
Stabilisation Grade B is targeted followed by disposal of dewatered sludge at Coffs Harbour Resource Recovery Park *for composting and reuse*.		
Sludge lagoons Nos.1 & 2 Sludge lagoons Nos.3 & 4	Effective volume of each sludge lagoon: 750 m^3, and total volume of each lagoon 1,500 m^3 Effective volume of sludge lagoon 3: 1,950 m^3,Effective volume of sludge lagoon 4, 4,200 m^3	Current: Negligible deficiency 100m^3) Deficiency increases progressively.
Sludge drying beds (IDEA 2)	Area of sludge drying bed: 2,800 m^2	To be assessed for the sludge lagoon capacity required and based on the combined stabilisation and drying cycle.
Tertiary Treatment		
1 x UV disinfection system	Design Flow rate for full disinfection = 292 L/s (7 x ADWF)	Under Design Capacity

A two-stage augmentation is proposed for the STP. Stage 1 would include a capacity augmentation for the sludge management system. Stage 2 would include a capacity augmentation of the reactor to service growth.

10. Bowraville sewerage scheme

10.1 Scheme description

The entire Bowraville population is served by the Bowraville Sewerage Scheme (BSS), which was originally constructed in 1968. All properties connected to the Bowraville Sewerage Scheme drain within the catchment of a single sewage pumping station (SPS), which then pumps to the Bowraville STP. The Bowraville Sewerage Scheme is shown in Figure 10-1.

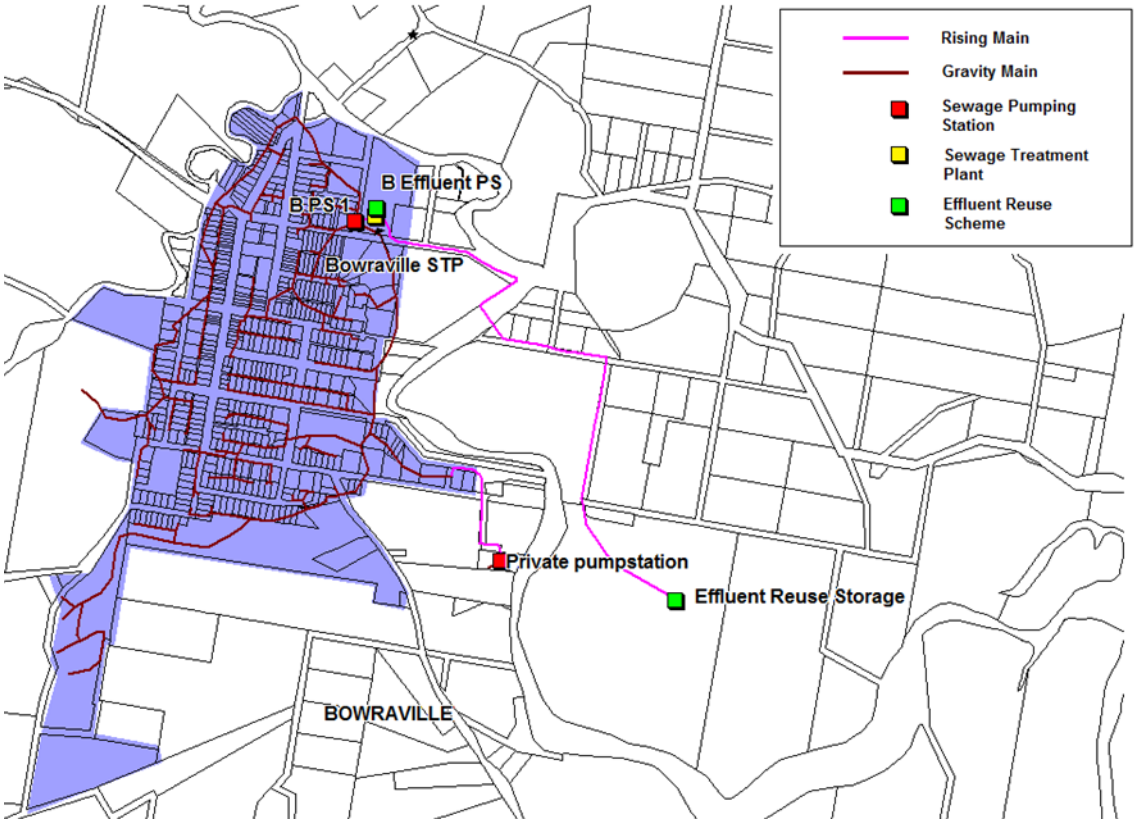

Figure 10-1: Bowraville sewerage scheme

10.2 Hydraulic loadings

STP inflow volume for the Bowraville STP was provided from 2019 to 2022. The historical daily inflows in conjunction with rainfall records are shown in Figure 10-2.

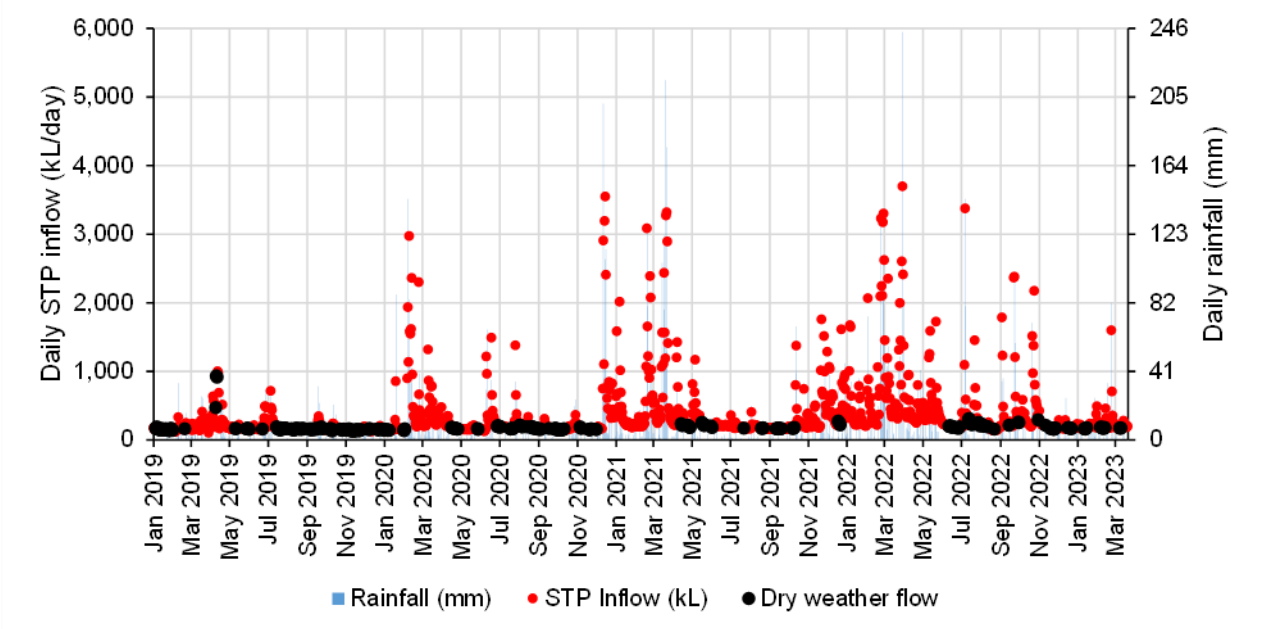

Figure 10-2: Historical daily inflows at Bowraville STP

The average dry weather flow (ADWF) was assessed from STP inflows and from the water consumption data. The ADWF was assessed as being 195 kL/day with a hydraulic loading of about 185 L/EP/day.

10.3 Projections

Council nominated growth rates and total new connections within specific SPS catchments of Scotts Head sewerage scheme. The projected ETs, EPs and ADWFs are summarised in Table 10-1, Table 10-2 and Table 10-3.

Table 10-1: Projected Equivalent Tenements (ETs) – Bowraville sewerage scheme

Projected ETs	2023	2028	2033	2038	2043	2048	2053
Bowraville STP							
Residential	392	408	422	422	422	422	422
Non-residential	74	74	74	74	74	74	74
Total	**466**	**482**	**496**	**496**	**496**	**496**	**496**

Table 10-2: Projected Equivalent Persons (EPs) – Bowraville sewerage scheme

Projected EPs	2023	2028	2033	2038	2043	2048	2053
Bowraville STP							
Residential	935	972	1,004	1,004	1,004	1,004	1,004
Non-residential	138	138	138	138	138	138	138
Total	**1,073**	**1,110**	**1,142**	**1,142**	**1,142**	**1,142**	**1,142**

Table 10-3: Projected ADWF – Bowraville sewerage scheme

Projected ADWF	2023	2028	2033	2038	2043	2048	2053

Bowraville STP							
ADWF (kL/day) Off-peak	194	201	207	207	207	207	207
ADWF (kL/day) Peak	202	209	215	215	215	215	215

10.4 Network assessment

The performance and capacity assessment of the collection and transfer system was undertaken using a hydraulic model. The assessment was undertaken based on the two model versions.

- Current Configuration - Infiltration from the catchment at the calibration level reflecting the current condition of the network
- Proposed Configuration – Infiltration from the catchment equivalent to a storm allowance of 0.04 L/ET/s

As summarised in Table 10-4, the proposed configuration, corresponding to a storm allowance of around 0.04 L/ET/s, reduces the PWWF to ADWF ratio from 15 to 10. As a result, with reduced infiltration, no overflows or major surcharges are expected during the 20% AEP 1-hour (1 in 5-year 1 hour) wet weather event in 2023 and 2053. As such, no system upgrades will be required, allowing Council to focus on infiltration management rather than capacity upgrades.

Table 10-4: Summary of Bowraville network performance during 20% AEP 1 hour wet weather event

Year	Network Version	No. of Overflows	No. of Surcharging Lines			ADWF*	$PWWF_m$**	$PWWF_m$ /ADWF
			SS=1	SS=2	Total			
2023	Current Configuration	31	73	51	124	2.4	37	15
	Proposed Configuration	0	3	2	5	2.4	25	10
2053	Current Configuration	31	74	50	124	2.5	37	15
	Proposed Configuration	0	3	2	5	2.5	25	10

10.5 Sewage treatment pant

Bowraville STP was constructed in 1968 to service the entire Bowraville population with a design capacity of 1,200 EP. The STP was subsequently upgraded in 2019 with tertiary filtration, which includes alum dosing-direct filtration, a balancing storage and UV disinfection.

Figure 10-3: Aerial view of Bowraville STP

The design criteria for the Bowraville STP are summarised in Table 10-5.

Table 10-5: Design criteria for Bowraville STP

Process Unit	Capacity
STP Design Capacity	
Design Population	1,200 EP
Hydraulic Capacity	
Average Dry Weather Flow (ADWF)	288 kL/day (@ 240 L/EP/day)
Peak Dry Weather Flow (PDWF)	Unknown
Peak Wet Weather Flow (PWWF)	2,016 kL/day (7 x ADWF)
Biological / nutrient capacity	
Biochemical oxygen demand, BOD_5	Unknown
Sewage Receiving	
1 x inlet works, including screening and grit removal	Unknown
1 x settling tank	Unknown
1 x Wet weather storage pond (converted maturation pond)	7 ML

Process Unit	Capacity
Secondary Treatment	
1 x Trickling Filter	1,200 EP
1 x Humus tank	
Biosolids Management	
Stabilisation Grade B is targeted for biosolids.	
1 x sludge digester	Unknown
3 x sludge drying beds	Unknown
Tertiary Treatment	
1 x Filtration system using aluminium sulphate for coagulation	Unknown
1 x Filtered water storage tank	Unknown
1 x UV disinfection unit	Unknown

Whilst there is little growth occurring in Bowraville the plant has sufficient capacity over a 30-year planning horizon.

The current Bowraville STP site is just 60 m to the nearest dwelling and takes up all of the useable land above the 1 in 100 year flood level. This makes it difficult to replace the plant at the same site while keeping it operational. Council has identified a site for a new Bowraville STP to replace the existing plant at the end of its design life. An aerial view of the site is provided in Figure 10-4..

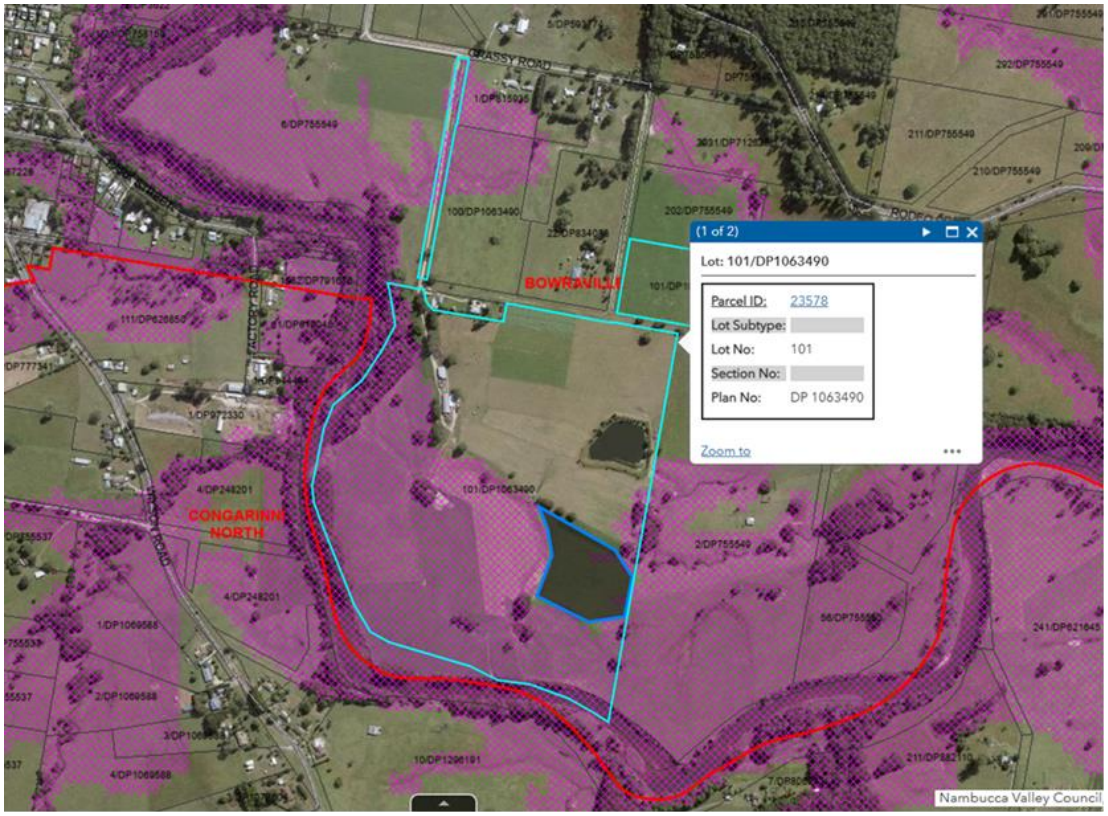

Figure 10-4: Location for future new Bowraville STP

11. Future actions and implementation plan

11.1 Scenario

Table 11-1 and Table 11-2 show the bundled Scenarios segregated for convenience into water supply and sewerage schemes. The issues that are being addressed by each option are also listed.

Table 11-1: Shire wide water supply scenario – infrastructure needs

Target for compliance	Issue	Option	Scenario
Water supply system issues			
Water quality			
Water quality in Bowraville storage	High levels of TOC, DOC and iron exceeding the ADWG	Upgrade current water treatment system to provide capability to address the water quality issue	**2041**
	Treated water quality free chlorine	Primary disinfection is achieved by UV with chlorine providing residual disinfection. The DWMS should be revised accordingly and the water supply to the first customers can be classified as potable.	

Table 11-2: Shire wide sewerage scenario – infrastructure needs

Target for compliance	Issue	Option	Scenario
Macksville sewerage scheme			
Collection and transfer system			
Regulatory requirements and Levels of service	Upgrade/augment the network to eliminate WHS issues and to meet the LOS for the selected containment standard for current and future growth.	Outlined in the Hydraulic Modelling report for the Macksville sewer network	**2026-2031**
Sewage treatment plant			
Regulatory and System Capacity	Upgrade/augment the Macksville STP to meet license and capacity requirements to service future growth	Outlined in the STP capacity and performance assessment report	**2027**
		Off-site effluent reuse	**2035**
Nambucca Heads sewerage scheme			

Target for compliance	Issue	Option	Scenario
Collection and transfer system			
Regulatory requirements and Levels of service	Upgrade/augment the network to eliminate WHS issues and to meet the LOS for the selected containment standard for current and future growth.	Outlined in the Hydraulic Modelling report for the Nambucca Heads sewer network	**2033-2038**
Sewage treatment plant			
Regulatory and System Capacity	Upgrade/augment the Macksville STP to meet license and capacity requirements to service future growth	Upgrade STP to address sludge management issues	**2029**
		Augment STP capacity to service future growth	**2046**
Scotts Heads sewerage scheme			
Collection and transfer system			
Regulatory requirements and Levels of service	Upgrade/augment the network to eliminate WHS issues and to meet the LOS for the selected containment standard for current and future growth.	Outlined in the Hydraulic Modelling report for the Scotts Head sewer network	**2030-2033**
Sewage treatment plant			
Regulatory and System Capacity	Upgrade/augment the Macksville STP to meet license capacity requirements to service future growth	Stage 1 Capacity augmentation – Inlet balance tank and performance optimisation of the Pasveer channel.	**2028**
		Stage 2 – Capacity augmentation	**2053**
Bowraville sewerage scheme			
Collection and transfer system			
Levels of Service	Network overflows and surcharges for the selected containment standard	Address inflow and infiltration into the network	**2028**

11.2 Present value analysis

A present value analysis of the Scenario at annual real discount rates of 4%, 7% and 10% has been undertaken. Detailed net present value cost estimates for the Scenario are provided in Appendix A.

A summary of the estimated total cost of capital outlay and the present value (PV) of the capital, and the operating and maintenance (O&M) cost estimates over the 30 years for the water supply and sewerage services in the Scenario is shown in Table 11-3 and Table 11-4 respectively.

Table 11-3: Summary of capital and PV costs for the IWCM Scenario – water supply

Total capital cost over 30 years ($'000)	Present value of capital cost @ 7% ($'000)	Present value of operating cost @ 7% ($'000)	Total present value @7% ($'000)
40,000	13,549	1,524	15,073

Table 11-4: Summary of capital and PV costs for the IWCM Scenario – sewerage

Total capital cost over 30 years ($'000)	Present value of capital cost @ 7% ($'000)	Present value of operating cost @ 7% ($'000)	Total present value @7% ($'000)
74,750	37,411	2,215	39,625

11.3 Resourcing

The proposed Organisation Structure for Council's Water and Sewer group is provided in Appendix B. Funding for the proposed structure has been included in the financial modelling.

12. Asset management

Council's Water supply and Sewerage Asset Management Plans 2023-2042, provide a detailed overview of the asset management systems, procedures and strategies in place to ensure delivery of services in a financially sustainable manner. Council's systems to manage assets include:

- The water supply and sewer asset registers
- Geographic Information Systems (GIS)
- Records of maintenance incidents
- Routine inspection reports

12.1 Capital works

The preferred IWCM strategy to address the Council's asset system and performance issues enables Council to develop a schedule of capital works into the future with a view to satisfy the forecast service demands in terms of growth, improved levels of service and renewal of existing assets.

Growth works	Works required to increase the capacity of facilities, to service new release areas, subdivisions, etc.
Improved level of service works (ILOS), including backlog works	Works to provide better public health and environmental performance, better service, higher reliability, or an extension of services to currently unserviced existing development. Works in this category may be eligible for Government grants.

Asset renewal	Renewal and replacement of existing assets which have reached the end of their effective economic service life due to age, condition, or performance.

12.1.1 Asset renewal

Anticipating the need and timing for asset renewal and replacement is critically important to ensure that funding is available to carry out the identified renewal works in a timely manner. Council identifies assets requiring renewal/ replacement using the NAMS recommended 'Expenditure Template' method that uses asset register data to project the renewal costs based on acquisition year, condition and useful life to determine the renewal year.

12.1.2 Asset creation/ upgrade/ expansion

The IWCM strategy develops the growth and ILOS capital works over the planning horizon based on the preferred options to address the identified issues. All viable options for the provision of new assets or upgrades to cater for community requirements have been developed and assessed in terms of their economic, social and environmental benefits to achieve optimum solutions for the new infrastructure.

12.1.3 Total asset management plan

The total asset management plan (TAMP) provides the details of proposed capital works and recurrent operations, maintenance, and management (OMA) expenditure over a 30-year planning horizon and is essential for managing infrastructure assets to meet the levels of service in the most cost-effective manner for the current as well as the future customers. Details of 30-year capital works plans of the preferred strategy are presented in Appendix C and Appendix D, and summaries are shown in Figure 12-1 and Figure 12-2.

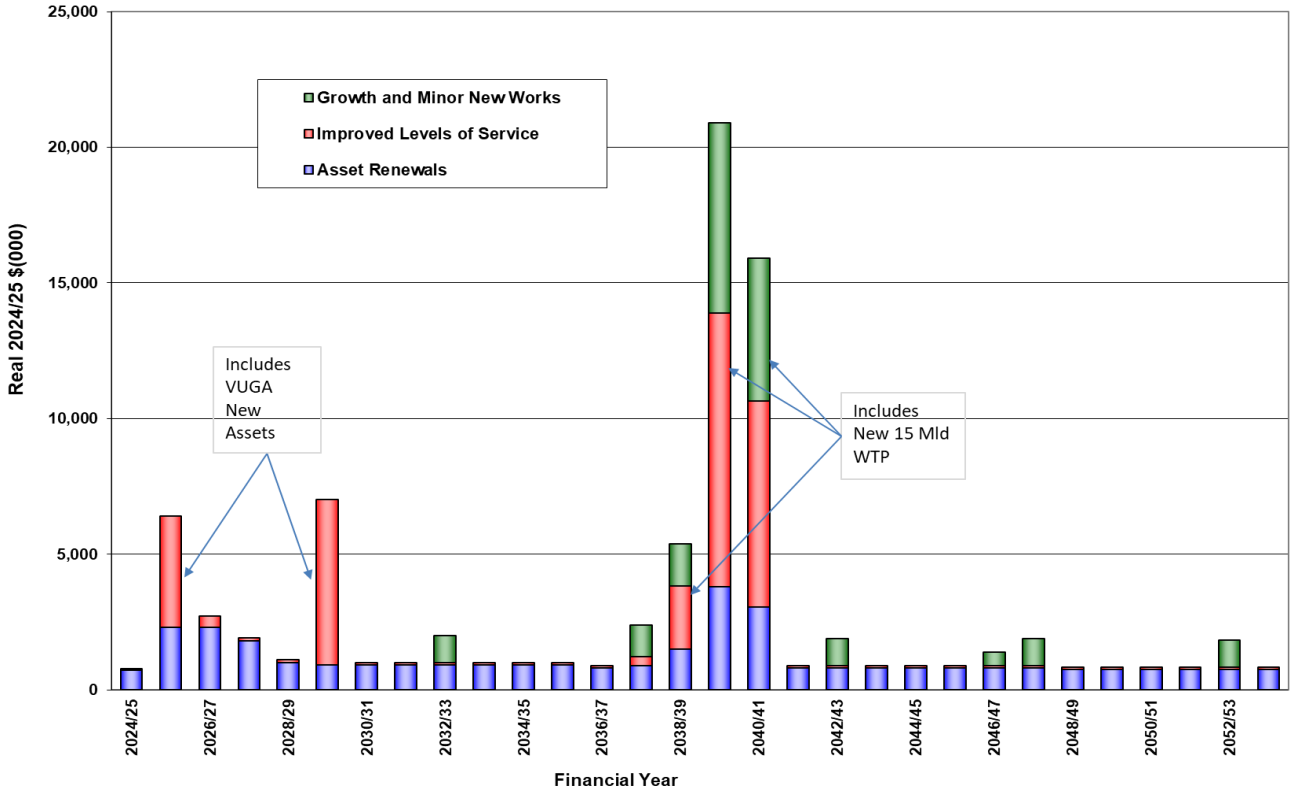

Figure 12-1: 30-year Capital Costs Summary – Water Supply

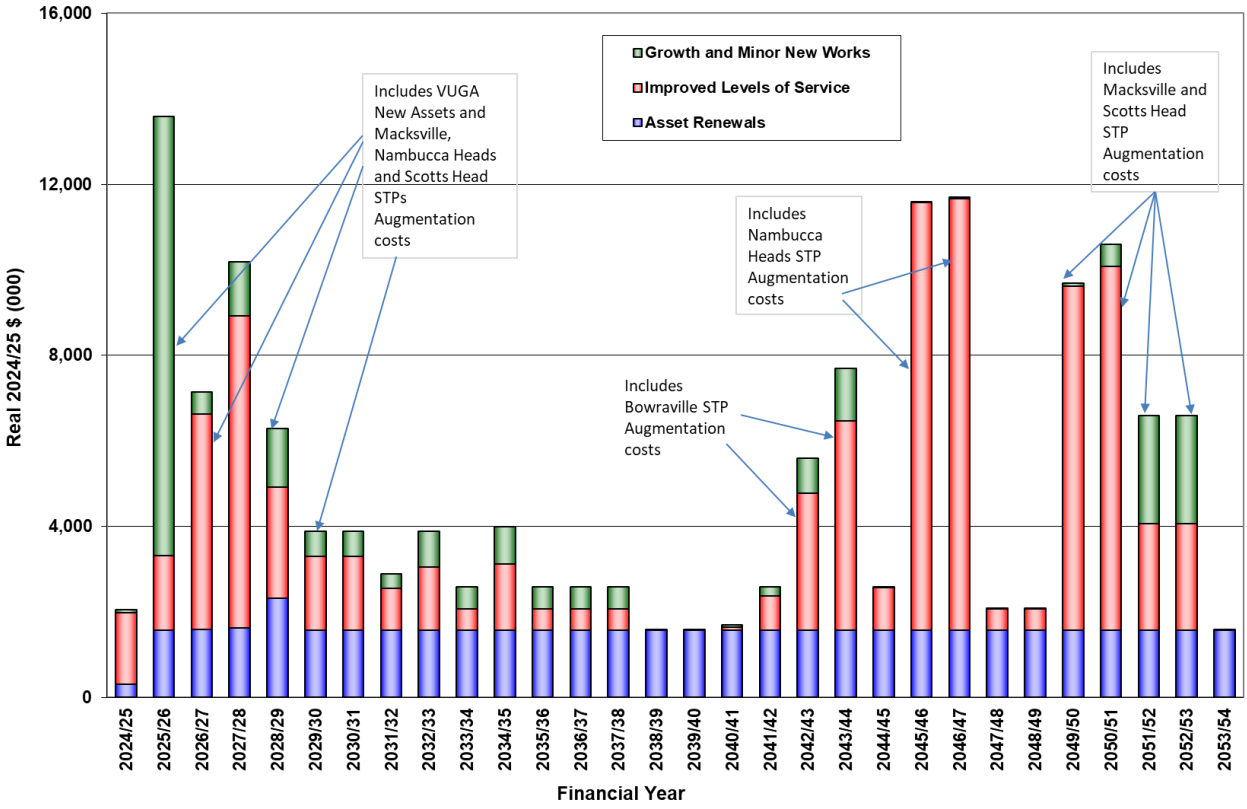

Figure 12-2: 30-year Capital Costs Summary – Sewerage

Operation of the systems includes regular activities to deliver services to customers using the asset/ infrastructure. Maintenance includes all actions necessary for retaining an asset as near practicable to an appropriate service condition to keep assets operating. Routine maintenance involves regular ongoing work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. Recurrent and ongoing costs of the TAM plan include the following:

Administration/ Management costs	Reflects true overheads associated with providing a service. Any cross subsidies with the General Fund should be eliminated or explicitly disclosed in the Annual Accounts.
Operations and Maintenance (O&M) costs	It is assumed that the current level of costs shown in the Financial Statements reflects a realistic level of expenditure for the current schemes. The projections assume costs increase in proportion to growth.
Additional OMA costs	Additional costs are included where specific activities have been identified for future years. This includes new initiatives, plus additional costs associated with new capital works identified as part of the adopted IWCM scenario.

Future operation and maintenance expenditure is expected to trend in line with the value of asset stock and include additional recurrent expenditure as identified below:

- Administration – No additional cost - as estimated and adopted by Council

- Engineering and supervision – $235 K/year from 2025-26 towards the proposed NVC water and sewer staff structure - as estimated and adopted by Council.
- Operation and maintenance expenses – For the water fund financial model, additional OM costs for the new upgraded WTP of $600 K/year from 2041-42 has been included. For the sewer fund financial model, additional OM costs for the proposed collection and transfer system upgrades, and STP augmentations have been included as listed below:
  - Bowraville STP – 100 K/year from 2044-45
  - Macksville collection & transfer system upgrade - $115 K/year from 2032-33
  - Macksville STP upgrade - $160 K/year from 2052-52
  - Nambucca Heads collection & transfer system upgrade - $35 K/year from 2032-33
  - Nambucca Heads STP upgrade - $200 K/year from 2047-48
  - Scotts Head STP upgrade - $65 K/year from 2028-29
- Energy costs – as estimated and adopted by Council.
- Chemical costs – as estimated and adopted by Council.
- Other expenses – as estimated by Council.
- Other revenue, grants, and contributions – as estimated by Council.

Summary of 30-year recurrent cost forecasts including for management, operation and maintenance for water supply and sewerage services are presented in Figure 12-3 and Figure 12-4.

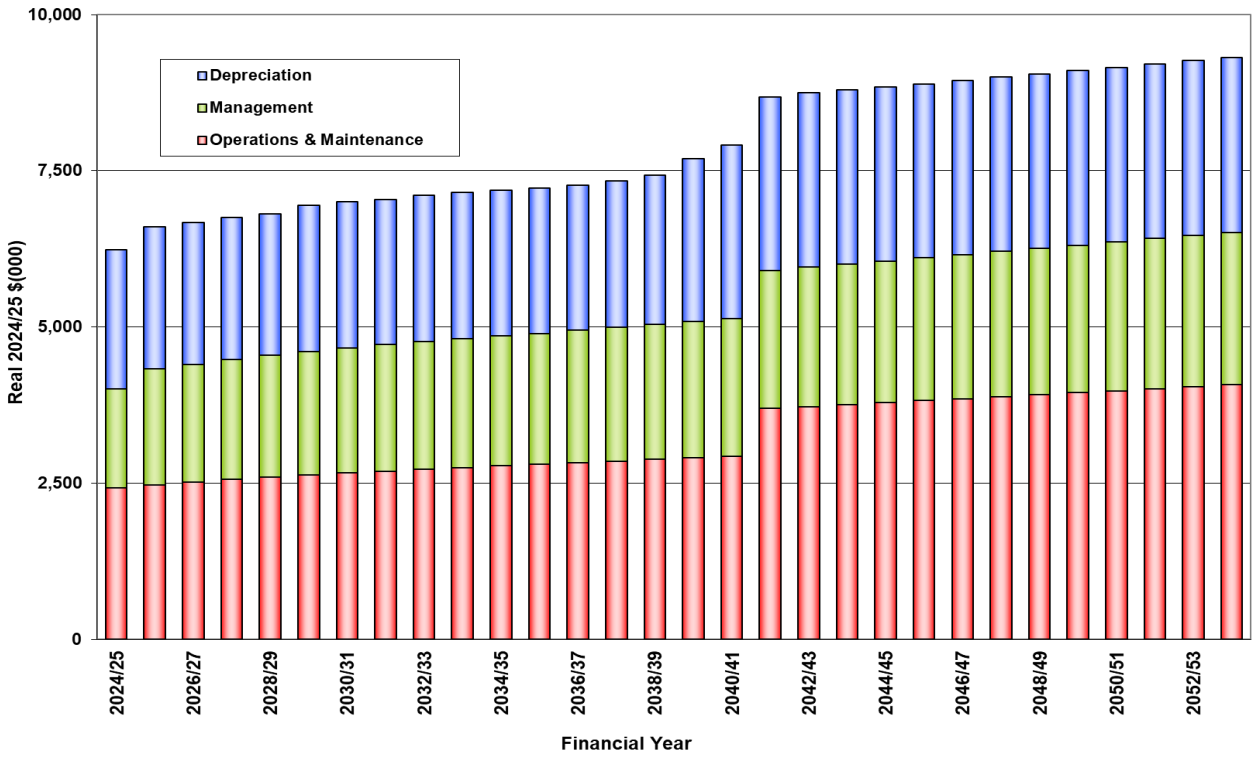

Figure 12-3: 30-year Recurrent O&M cost summary –Water supply

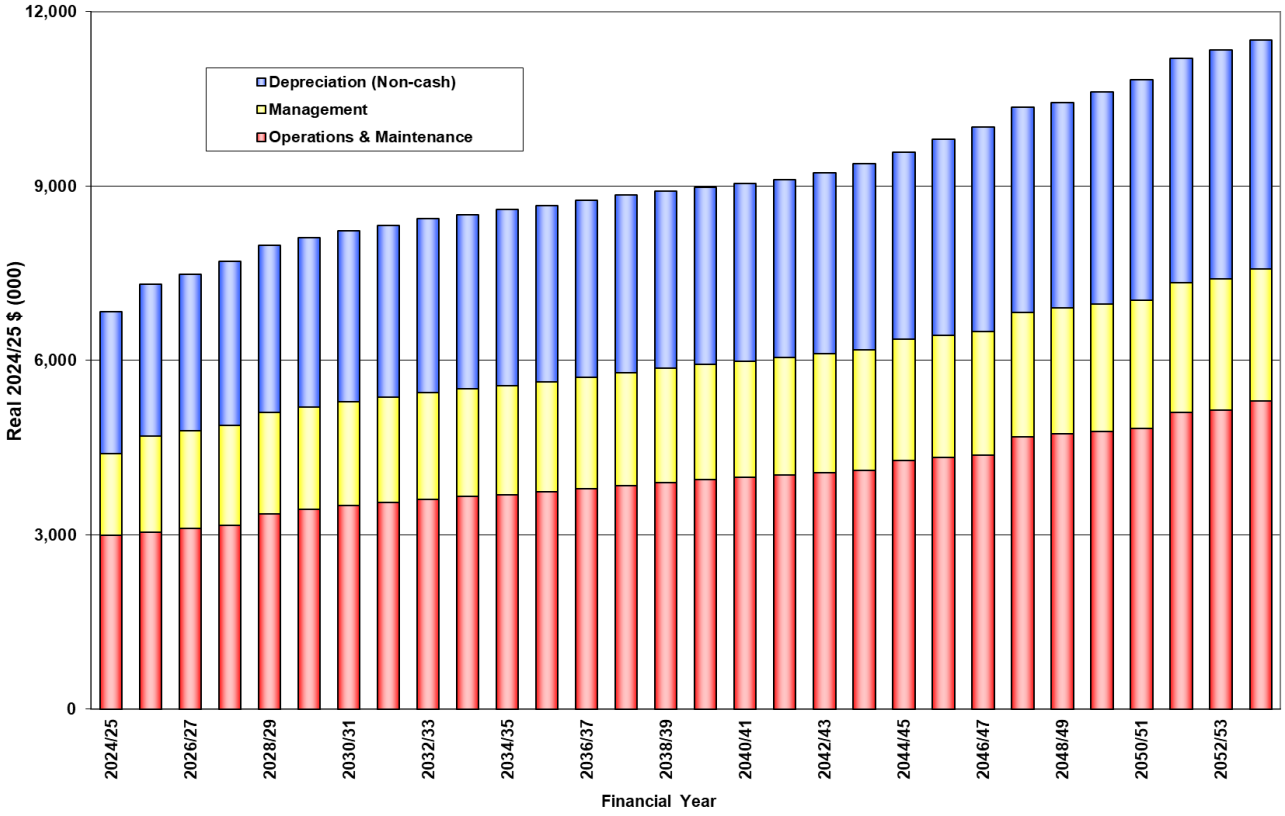

Figure 12-4: 30-year Recurrent O&M cost summary –Sewerage

13. Financial plan

This section presents the details of long-term financial plans for water supply and sewerage services for preferred IWCM scenario. The overall goal of financial planning is to determine the lowest, sustainable price path for the water supply and sewerage services on which to base Council's tariff structures. The details of assumptions, input data and output financial projections for the preferred IWCM scenario TAM Plans are presented in this plan. Sensitivity of financial forecasts to possible changes in key financial model input parameters are also presented in this section.

13.1 Financial modelling methodology

FINMOD 4.0, the software developed by DCCEEW was used to develop the water and sewer fund financial models. The financial models have been developed for a 30-year planning horizon.

A stable level of annual residential charges for water supply and sewerage services has been achieved using Finmod by optimising the long-term funding strategy in meeting the demands of the capital works programs and day-to-day operations, while ensuring a minimum level of cash liquidity. For a particular Level of Service (LOS), FINMOD enables examination of the financial models for a range of funding options to determine the best mix of borrowing and internal funding.

The financial model balances the forecast income and expenditure for each service delivery option over the projected modelling period. Figure 13-1 illustrates the main income and expenditure elements which affect the financial modelling.

The goals of the financial modelling are to:

- optimise the long-term funding strategy
- meet the demands of the capital works programme and other life cycle costs of the system assets
- ensure a minimum level of cash liquidity; and
- provide a forecast of the typical residential annual charges over the long-term.

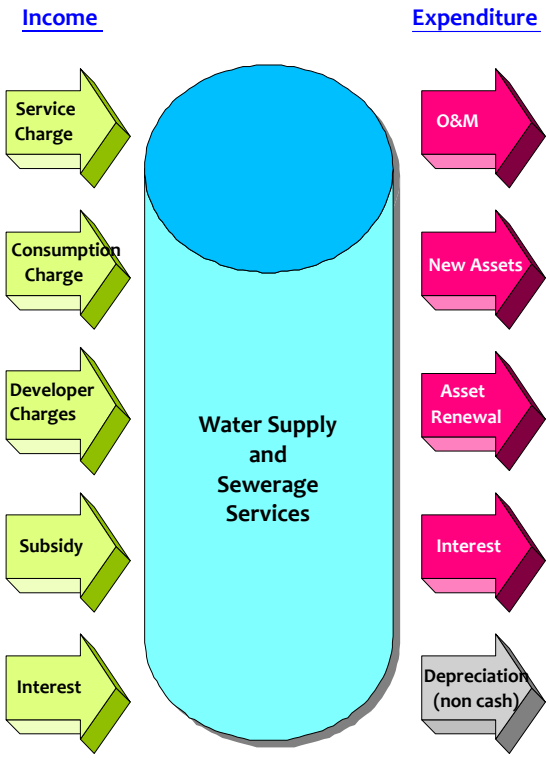

Figure 13-1: Elements of financial modelling

The long-term financial plans demonstrate the sustainability of future actions and also demonstrate the sensitivity of model outcomes to some of the key assumptions made.

Funding is usually achieved from a mix of borrowing and direct revenue and can also be offset by receiving Government grants and subsidies where available.

Renewal programs would usually be funded from revenue, and some cash would be accumulated in anticipation of major projects, in order to reduce the need for borrowing. DCCEEW encourages the use of long-term loans because they support the idea of intergenerational equity and reduce the requirement of raising funds from existing customers in the short term.

If the resulting annual charges are considered unacceptable or unaffordable, some input variables, such as levels of service, can be negotiated to arrive at a satisfactory levels of annual charges. For example, to reduce the level of annual charges, Council may delay some of the capital works, reduce customer levels of service for service interruptions, or may take long-term structured loans. Council's charging and pricing policies will also take into account corporate policies, approach to risk and the acceptability of charges to the community. Some of these risks are evident from the sensitivities presented in this plan.

While the preferred model reflects the expected performance of the systems, it does not give any indication of the sensitivity of the proposed solutions should the basic assumptions used prove significantly different in practice.

For that reason, a sensitivity analysis is carried out if it is perceived that a variable may change significantly in the future. The value of a sensitivity analysis is that it shows:

- The sensitivity of the results to assumptions (uncontrollable variables); and
- The impact of changing controllable variables.

DCCEEW's Regulatory and Assurance Framework for Local Water Utilities, July 2022 suggests that several sensitivities should be carried out to test the robustness of the forecasts. With regards to controllable variables, such as type of loan structure, and level of developer charges, the financial model enables Council to make decisions to establish the most appropriate management policies.

With uncontrollable variables, Council is at the mercy of change. The downside risk of increased interest rates, or lower than forecast growth rates, or rise in energy costs, may be significant.

On-going Review

Over time, changes in model variables can have a significant impact on the accuracy of model forecasts, and this has implications for forward planning. It is recommended that the financial model be reviewed annually, and the financial planning be revisited regularly, preferably on a 3-yearly basis. The Regulatory and Assurance Framework for Local Water Utilities recommends annual updates if a Council has an active capital works program that requires government grant or subsidy.

13.2 Financial model inputs

Several variables and assumptions have been used in the development of the base case of the water and sewer fund financial models (Appendix E and Appendix F) and are summarised in Table 13-1 and Table 13-2. All costs and revenues of the input data (and the model outcomes) are in 2024-25 dollars unless stated otherwise.

The model assumptions are based on a representative view of the impact of a number of factors. They have been grouped into the following five main policy areas and are discussed below:

1. Charges

2. Revenues and Expenditures

3. Service Provision

4. Funding Capital Works

5. Performance Measures

Table 13-1: Key Input Parameters – Water Fund Financial Model

Data Type	Input Data/ Assumption
Historical Data Source	Council's Financial Data Returns (FDRs) for 2022-23 and 2023-24
Financial Data	Average annual long-term inflation rate: 3.0% p.a. Annual Investment Interest Rate: 5.5% p.a. (default) – 5.0% p.a. adopted Annual Borrowing Interest Rate: 6.5% p.a. (default) – 6.0% p.a. adopted
Opening balances as of June 2024	Total cash & investments: $23.82 M; Borrowing outstanding: $20.09 M Minimum cash & investments: $3,000 K Terms of new loans: 20 years

Demographic Base Data (2023-24)	Total no. of residential assessments – 6,439 (including 386 unoccupied/ vacant) Total no. of non-residential assessments – 779 Long-term average assessment growth: 1.0% p.a. - Average 110 new customers p.a. for the first 10 years (1.1% p.a.) - Average 75 new customers p.a. after 10 years (0.7% p.a.)
Revenue Splits	From 2024-25 onwards – 75.6%: 24.4% (Residential: Non-residential)
Current Annual Charges (2023-24)*	**Urban Water Schemes: Carrathool and Hillston** Access Charge : $167 p.a. (20mm meter size) - $184 p.a. for 2024-25 Usage Charge: $3.54 per KL – For all consumption - $3.90 per KL for 2024-25 Av. residential water consumption: 161 KL/a Typical Residential Bill for 2023-24: $740 p.a. - $810 p.a. for 2024-25

* - For larger than 20 mm meter size water connections, the annual access charges increase by the square of the proportion of larger meter sizes to 20 mm.

Table 13-2: Key Input Parameters – Sewer Fund Financial Model

Data Type	Input Data/ Assumption
Historical Data	Council's Financial Data Returns (FDRs) for 2022-23 and 2023-24
Financial Data	Average annual long-term inflation rate: 3.0% p.a. Annual Investment Interest Rate: 5.5% p.a. (default) – 5.0% p.a. adopted Annual Borrowing Interest Rate: 6.5% p.a. (default) – 6.0% p.a. adopted
Opening Balances (as of June 2023)	Total cash and investments: $19.94 M; Borrowing outstanding: $5.82 M Minimum cash & investments: $2,00 K Terms of new loans: 20 years
Demographic Base Data (2023-24)	Total no. of residential assessments: 6312 (including 372 unoccupied/ vacant) Total no. of non-residential assessments: 557 Long-term average assessment growth: 1.1% p.a. - Average 119 new customers p.a. for the first 10 years (1.4% p.a.) - Average 90 new customers p.a. after 10 years (0.9% p.a.)
Revenue Splits	From 2024-25 onwards – 75%: 25% (Residential: Non-residential)
Current Annual Charges (2023-24)	Residential annual charge (all meter sizes): - Occupied: $752 p.a. - $828 for 2024/25) - Vacant: $284 p.a. (38%) - $315 for 2024/25) Non-residential charge (20mm meter size)*: - Annual charge: $787 p.a. (20 mm meter size) ($828 for 2024-25) - Usage Charge: $0.90 per KL ($0.93 per KL for 2024-25)

* - For larger than 20 mm meter size non-residential water connections, the annual sewerage access charges increase by the square of the proportion of larger meter sizes to 20 mm.

13.2.1 Charges

Charging Structure

The projection of typical residential bills (TRBs) for water supply and sewerage are made in real (2024-25) dollars and, where feasible, a stable price path is maintained to demonstrate the lowest long-term price path achieved based on model assumptions. The forecast TRBs are maintained at constant level in real terms, unless where an increase is required for long-term financial viability and should be increased in line with the CPI (consumer price index) on an annual basis.

Typical residential bills calculated by the financial model will be higher than the average bills because the model considers account revenue losses due to vacant and/or unoccupied tenements and pensioner rebates. Council can use this information for setting its tariff structure for service pricing. The tariff structure is to be reviewed at least every 5 years and indexed in the interim.

Developer charges

Developer charges for water supply and sewerage services constitute significant revenue stream to the water and sewer funds and are impacted by the future capital work expenditure for service level improvements and service extensions to future service areas. The developer charges revenue, therefore, is an important input parameter in the financial models. For the purpose of the IWCM strategy assessment, 'first-cut' DCs in consideration of the estimated costs and timings of major capital work initiatives have been calculated in accordance with the 2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, and used in the TRB forecasts. 'First-cut' DCs are the preliminary developer charge estimates that need to be reviewed and refined in consideration of additional service areas and agglomerations, cross-subsidy requirements etc., before adoption by the Council.

The financial model forecasts are based on the assumption that Council will be adopting the developer charges at the level of first-cut estimates (Table 13-4) in 2024-25$ values with annual adjustments for CPI, during the forecast period.

Table 13-3: First-cut developer charges – water supply

Service Area	Capital Charge ($/ET)	Reduction Amount ($/ET)	First-cut Developer Charge ($/ET)	Current Developer Charge ($/ET)
Nambucca District Water Supply Scheme	11,729	4,192	7,538	10,021

Table 13-4: First-cut developer charges – Sewerage

Service Area	Capital Charge ($/ET)	Agglomerated Capital Charge ($/ET)	Reduction Amount ($/ET)	First-cut Developer Charge ($/ET)	Current Developer Charge ($/ET)
Macksville	19,071	15273	3,953	11,320	12,760
Bowraville	18,703				8,362
Nambucca Heads	14,079				12,760
Scotts Head	13,131	13,131		9,178	8,362

13.2.2 Revenues and expenditures

Capital works

The capital work expenses form a significant component of the inputs. The capital works program adopted for financial modelling includes all the capital works for the preferred Strategy as incorporated in the 30-year Total Asset Management Plan (refer to section 12.1.3).

Recurring Costs

The financial model considers a number of ongoing recurrent costs from historic input details. By default, the model increases historical operation and maintenance expenses pro-rata assessment growth. This has been overridden where Council has provided revised estimates, for example, where the IWCM action plan requires new initiatives, or where new works require additional operating resources as described in section 12.1.3.

13.2.3 Service provision

Growth projections

The assessment growth forecast as listed in input parameter Tables (refer to section 13.2) for the strategy development has been used for the financial forecasts.

Expected life of assets

The default average life of the system assets is based on the weighted average of long-lived structures and shorter-lived mechanical plant. These average lives are currently estimated by Council as 75 years for water supply and 65 years for sewerage.

Depreciation is a non-cash expense, which is dependent upon asset lives. The age of assets directly affects the level of future asset renewal works, which are part of the capital works program.

13.2.4 Funding capital works

Some, or all, capital works can be funded directly from accumulated cash reserves. To overcome intergenerational equity issues, it is considered to be a good practice to fully fund renewal programs out of internally generated cash (where practicable) and to borrow only for full or partial funding of new capital acquisitions.

Funds which are surplus to requirements can be used to further reduce or eliminate borrowing requirements, and to reduce interest payments.

Loans are taken out as required also to maintain the adopted minimum cash levels for the water and sewer funds.

Subsidies/grants for capital works

Financial assistance in the form of grants for capital works may be received under various funding programs by the State and Federal Governments such as the Restart NSW or the National Stronger Regions Fund (NSRF). The Program's guidelines, published by the Department of Planning and Environment, Infrastructure NSW and Commonwealth Department of Infrastructure and Regional Development, define the extent of the available grants/ subsidies.

The water fund financial model considered that no grant funding will be available for the any of the planned water supply during the 30-year planning horizon. The sewer fund model also has not considered availability of grants for any of the planned capital works for the next 15 years, however,

availability of 25% grants for the future Bowraville and Nambucca Heads STP augmentation works have been considered.

13.2.5 Performance measures

Council will annually review and report the performance of the water and sewer funds as required under the strategic planning processes of the Regulatory and Assurance Framework for Local Water Utilities, July 2022.

13.3 Assumptions and limitations of the Model

The projections of the financial models are mainly based on the previous two years historical financial records. Allowance is made for new initiatives, future rate forecasts, and maintenance of sustainable Levels of Service (LOS) as identified and adopted by Council.

The Total Asset Management Plan shows the best available cost estimates for the long-term capital, operational and maintenance expenditures used in the models for projecting the financial position over the next 30 years. Models will require updating as more accurate expenditure schedules become available.

The net operating results in the financial projections should be seen in light of the fact that the depreciation shown in the operating statement is not a cash item. The financial model manages the cash flow and keeps a running tally of the cumulative depreciation so that Council can appreciate the potential future liability for maintaining the value in the system and the LOS. By planning ahead and making optimum use of existing assets, a more cost effective and efficient service should result.

Typical Residential Bills are used as the performance indicators representing overall revenue requirements from residential customers. This should not be confused with the pricing structure. Pricing, that is, the distribution of charges according to consumption or special customer groups, is the subject of a separate revenue planning exercise. Tariff structure for the services will need to take into account corporate policies, approach to risks such as lower than adopted growth rates, increase in interest rates, and the acceptability of charges to the community.

Financial model is not a substitute for regular annual budgeting (i.e., short-term financial planning). The model assumes that all expenses and income occur at the beginning of the year and therefore not suitable to track cash flow throughout the year. It is important, however, that the budgeting process is carried out within the framework of the forecasts made in the long-term financial plan.

13.4 Financial model outcomes – Water supply

13.4.1 Projected financial position

All costs and revenues in the input data and the model outcomes are in 2024-25 dollars unless stated otherwise, and CPI should be applied annually for the forecast years. The financial projections should be reviewed annually with respect to material changes to the proposed capital works program and/or to any of the underlying assumptions.

The preferred IWCM strategy of Council's water fund financial model considers no government grants or subsidy for any of the planned capital works during the 30-year planning horizon. Accordingly, the Typical Residential Bill (TRB) forecasts for the Nambucca District Water Supply Scheme customers for the next 30 years is presented in Figure 13-2 below.

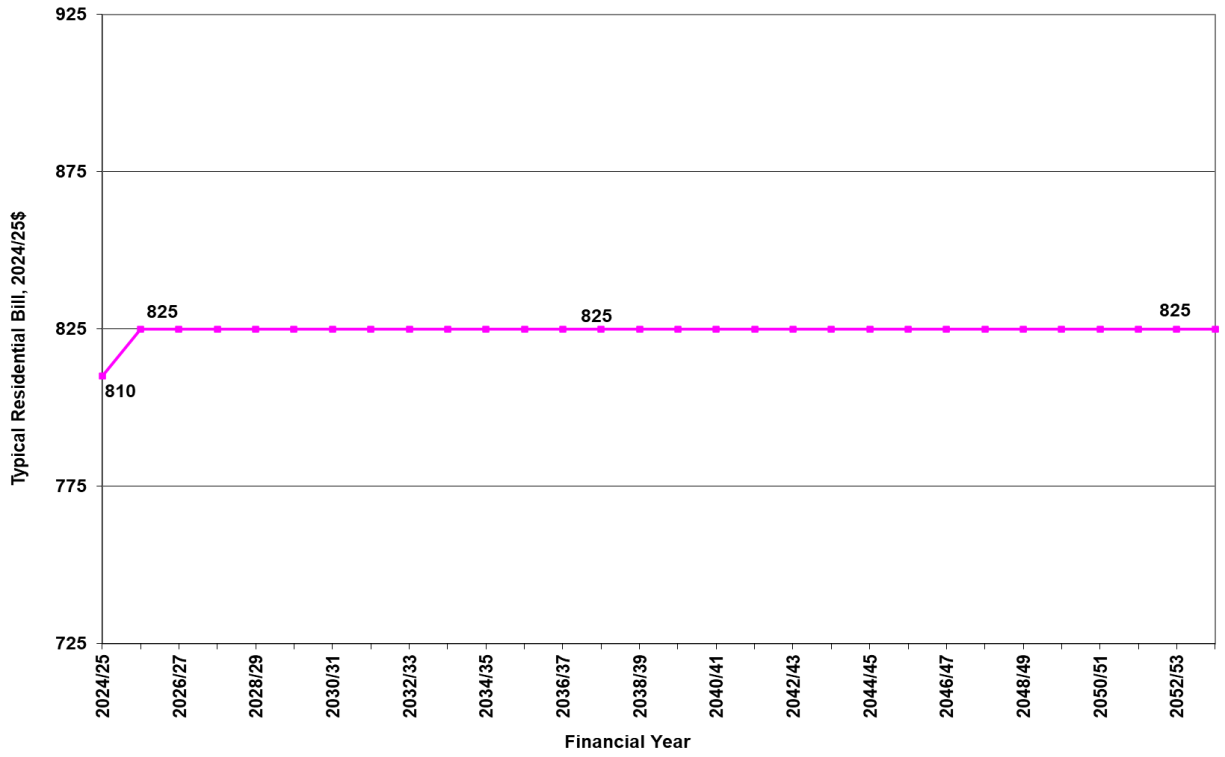

Figure 13-2: Typical Residential Bill - Water supply

The financial model demonstrates that the 2025-26 typical residential water bill of $825 p.a. ($850 p.a. in 2025-26 dollars) can be maintained at that level for all the remaining forecast period.

Council's water fund had an outstanding borrowing of $20.09 Million as of 30 June 2024. The model forecasts demonstrate that with the recommended price path, all the planned capital works can be fully funded internally by Council. New loans will be required only in 2040-42 to partly fund the proposed upgrade of WTP. The projected levels of TRBs is sufficient to maintain liquidity with a minimum level of cash and investment of $3M in the water fund throughout the forecast period. The levels of cash and borrowing outstandings during the forecast period are presented in Figure 13-3.

Projected financial results for the water fund is presented in Table 13-5. Note that all the projected values are in 2024-25 dollars and will require indexing for CPI for the future years. More detailed financial output statements are presented in Appendix G.

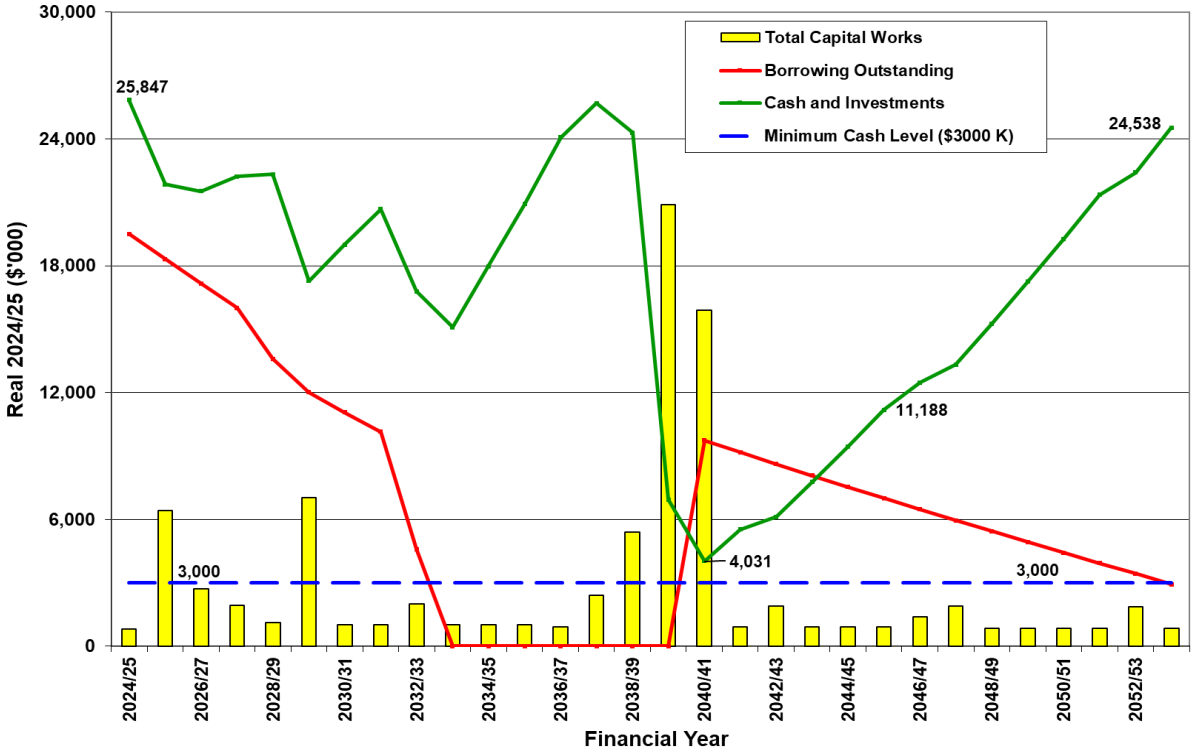

Figure 13-3: Cash and borrowing outstandings projections - Water supply

13.4.2 Sensitivity of financial projections – Water supply

Following sensitivities of the water fund financial model forecasts for the preferred strategy were analysed:

- Accelerated depreciation of system assets considering average useful life of 60 years instead of current Council estimate of 75 years.
- 40% increase in capital cost estimates of major projects

The impacts of these variables on the water supply TRB forecasts, borrowing outstandings and cash levels for water fund are summarised in the following figures.

The sensitivity analysis demonstrate that the water supply TRB forecasts are not sensitive to accelerated depreciation of system assets. However, increase in estimated costs of major capital projects, mainly the Nambucca WTP upgrade, impact the model forecasts, requiring TRB increases when project is initiated.

Table 13-5: Projected Financial Results – Water supply

2024/25 ($'000)	Revenue and Expenses			Capital Transactions		Financial Position					System Assets			Typical Residential Bills
Financial Year	Total Revenue	Total Expenses	Operating Result (Before Grants)	Acquisition of Assets	Principal Loan Payments	Cash and Investments	Borrowings	Total Assets	Total Liabilities	Net Assets Committed	Current Replacement Cost	Less: Accumulated Depreciation	Written Down Current Cost	
2024/25	8,806	7,512	1,294	800	587	25,847	19,502	142,959	20,123	122,836	163,218	54,726	108,492	810
2025/26	9,388	7,799	1,589	6,400	608	21,844	18,326	142,330	18,958	123,372	167,298	54,483	112,815	825
2026/27	9,303	7,797	1,506	2,719	629	21,535	17,164	141,758	17,807	123,951	167,698	54,247	113,451	825
2027/28	9,531	7,800	1,731	1,930	651	22,219	16,013	141,359	16,667	124,692	167,808	54,512	113,295	825
2028/29	9,448	7,767	1,681	1,130	1,954	22,330	13,593	139,637	14,257	125,380	167,918	55,578	112,339	825
2029/30	9,357	7,776	1,581	7,030	1,189	17,280	12,008	139,307	12,681	126,626	174,028	56,825	117,203	825
2030/31	9,299	7,723	1,576	1,001	589	18,999	11,070	138,895	11,751	127,144	174,108	58,072	116,036	825
2031/32	9,323	7,710	1,613	999	609	20,686	10,138	138,392	10,826	127,566	174,188	59,320	114,868	825
2032/33	9,372	7,653	1,719	2,000	5,258	16,787	4,585	134,414	5,280	129,134	175,268	60,582	114,685	825
2033/34	9,258	7,260	1,998	999	4,451	15,085	0	131,322	702	130,620	175,348	61,845	113,502	825
2034/35	9,289	7,188	2,101	1,000	0	17,985	0	131,748	708	131,040	175,428	63,109	112,319	825
2035/36	9,446	7,226	2,220	1,000	0	20,916	0	132,092	714	131,378	175,509	64,373	111,136	825
2036/37	9,717	7,274	2,443	900	0	24,078	0	132,399	721	131,678	175,588	65,738	109,850	825
2037/38	9,810	7,334	2,477	2,400	0	25,696	0	133,029	727	132,302	177,094	67,049	110,045	825
2038/39	9,889	7,431	2,458	5,399	0	24,295	0	134,571	735	133,836	180,998	67,811	113,187	825
2039/40	9,439	7,700	1,739	20,900	0	6,942	0	141,222	741	140,481	198,078	66,476	131,602	825
2040/41	9,282	8,506	776	15,900	269	4,031	9,731	152,372	10,477	141,895	210,908	66,063	144,845	825
2041/42	9,362	9,250	112	900	278	5,529	9,170	151,306	9,922	141,384	210,988	67,901	143,087	825
2042/43	9,528	9,280	248	1,900	286	6,119	8,616	150,651	9,375	141,276	212,068	69,754	142,314	825
2043/44	9,634	9,294	340	900	294	7,774	8,071	149,593	8,836	140,757	212,148	71,607	140,540	825
2044/45	9,724	9,307	417	900	303	9,446	7,533	148,498	8,303	140,195	212,227	73,462	138,766	825
2045/46	9,871	9,322	549	900	312	11,188	7,001	147,399	7,778	139,621	212,307	75,317	136,991	825
2046/47	9,999	9,347	652	1,400	321	12,477	6,476	146,513	7,259	139,254	212,887	77,180	135,708	825
2047/48	10,124	9,379	744	1,900	331	13,321	5,956	145,861	6,746	139,115	213,967	79,057	134,910	825
2048/49	10,217	9,395	822	850	341	15,256	5,441	144,681	6,237	138,444	214,047	80,986	133,062	825
2049/50	10,356	9,416	940	850	351	17,240	4,931	143,480	5,734	137,746	214,127	82,915	131,213	825
2050/51	10,499	9,436	1,062	850	362	19,275	4,426	142,260	5,235	137,025	214,207	84,845	129,363	825
2051/52	10,637	9,457	1,179	850	373	21,355	3,924	141,017	4,740	136,277	214,288	86,776	127,512	825
2052/53	10,718	9,492	1,225	1,850	384	22,419	3,426	140,274	4,248	136,026	215,368	88,721	126,646	825
2053/54	10,837	9,512	1,326	850	395	24,538	2,931	138,964	3,759	135,205	215,448	90,668	124,779	825

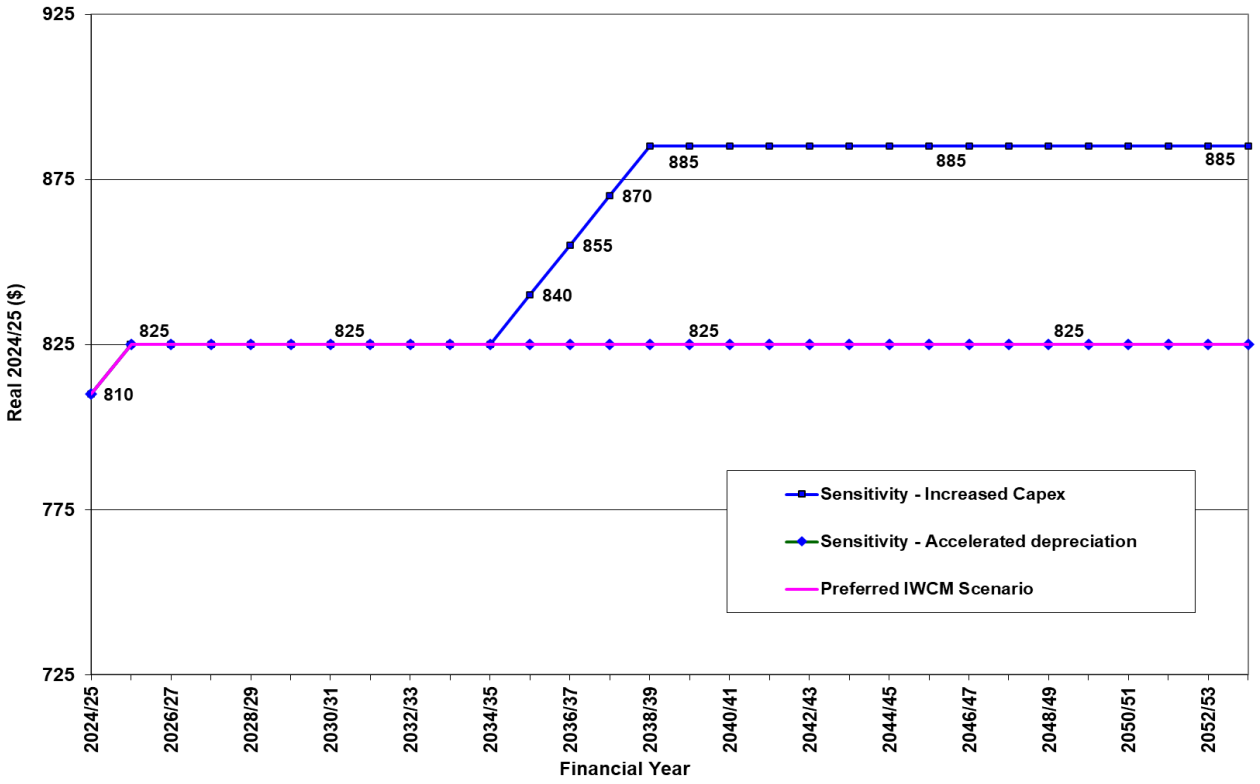

Figure 13-4: Sensitivity of TRB forecasts – Water supply

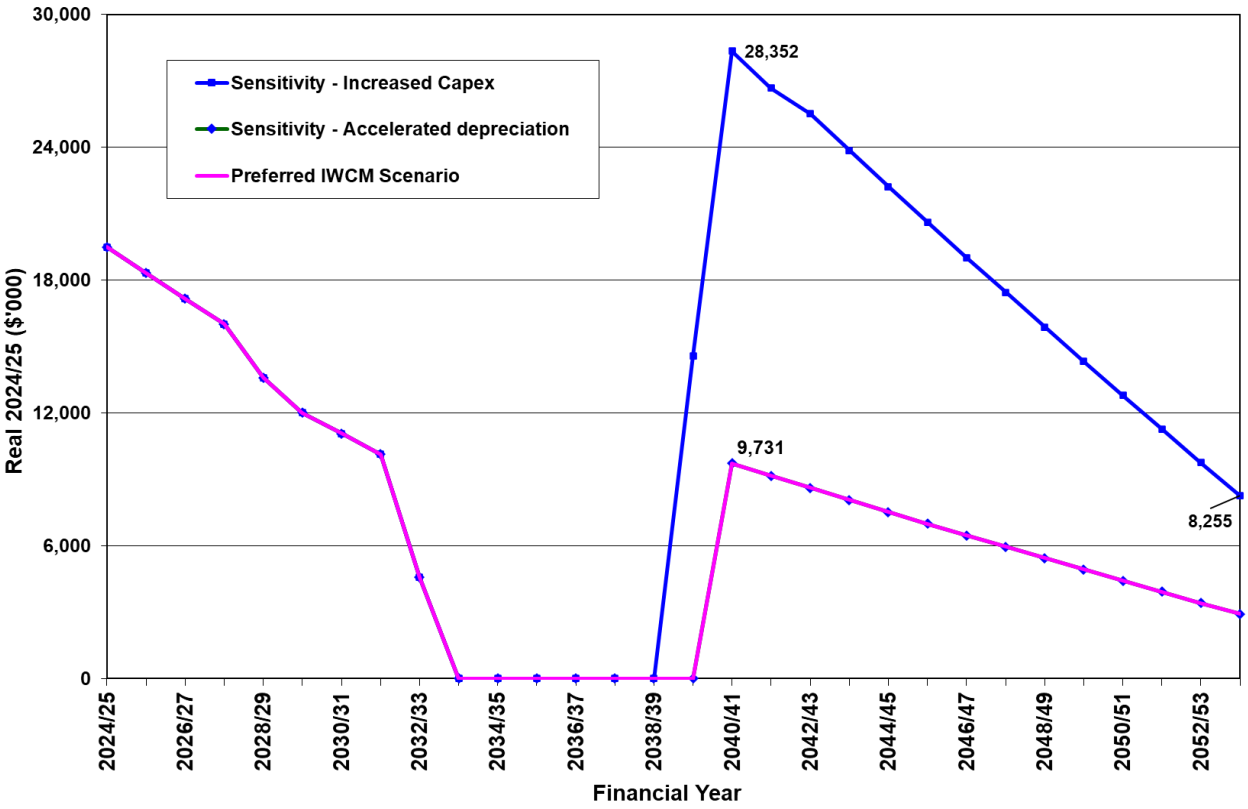

Figure 13-5: Sensitivity of Borrowing outstandings – Water supply

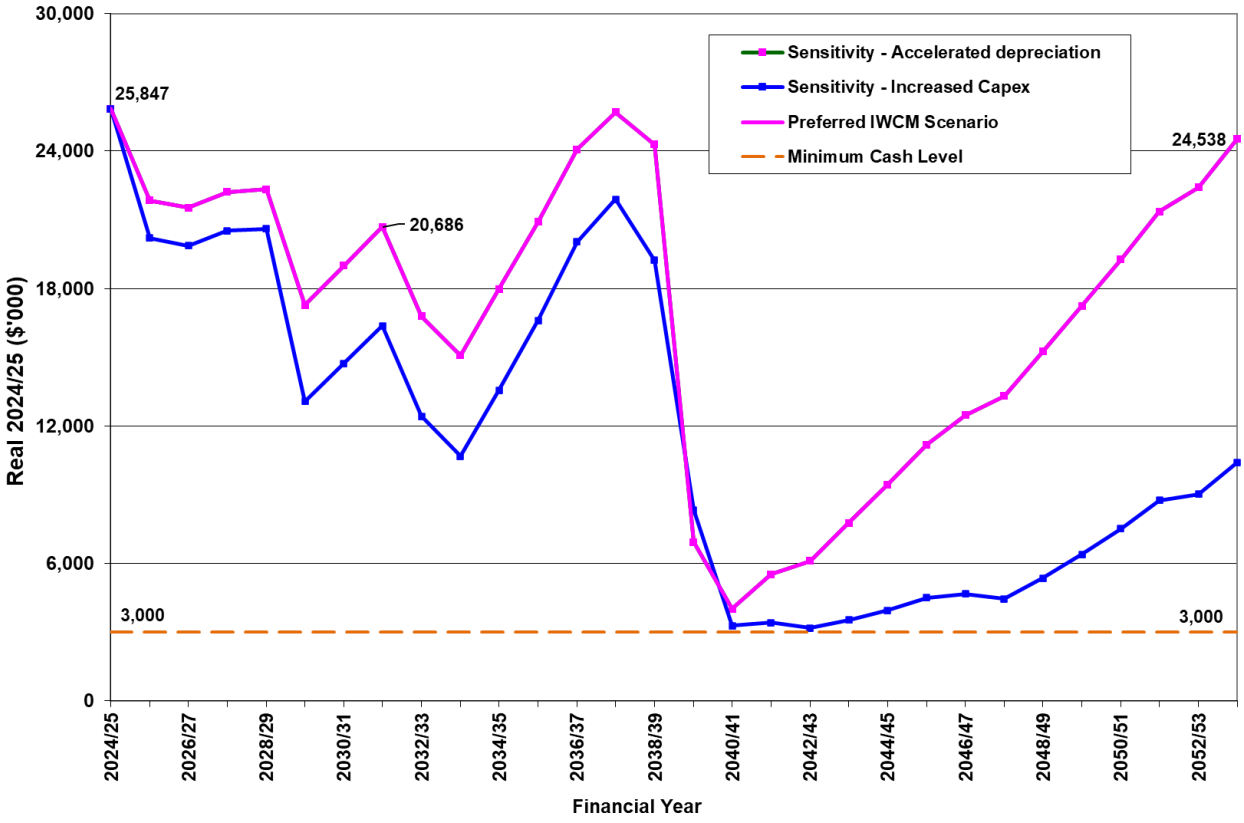

Figure 13-6: Sensitivity of Cash & Investments – Water supply

13.5 Financial model outcomes – Sewerage

13.5.1 Projected financial position

All costs and revenues in the input data and the model outcomes are in 2024-25 dollars unless stated otherwise, and CPI should be applied annually for the forecast years. The financial projections should be reviewed annually with respect to material changes to the proposed capital works program and/or to any of the underlying assumptions.

The preferred IWCM strategy of Council's sewer fund financial model considers no government grants or subsidy for any of the planned capital works planned for the next 15 years. Thereafter, availability of 25% grants for the future Bowraville and Nambucca Heads STP augmentation works planned during 2042 – 2047 have been considered. Accordingly, the Typical Residential Bill (TRB) forecasts for the Council's sewerage service customers in all the sewerage schemes for the next 30 years is presented in Figure 13-7 below.

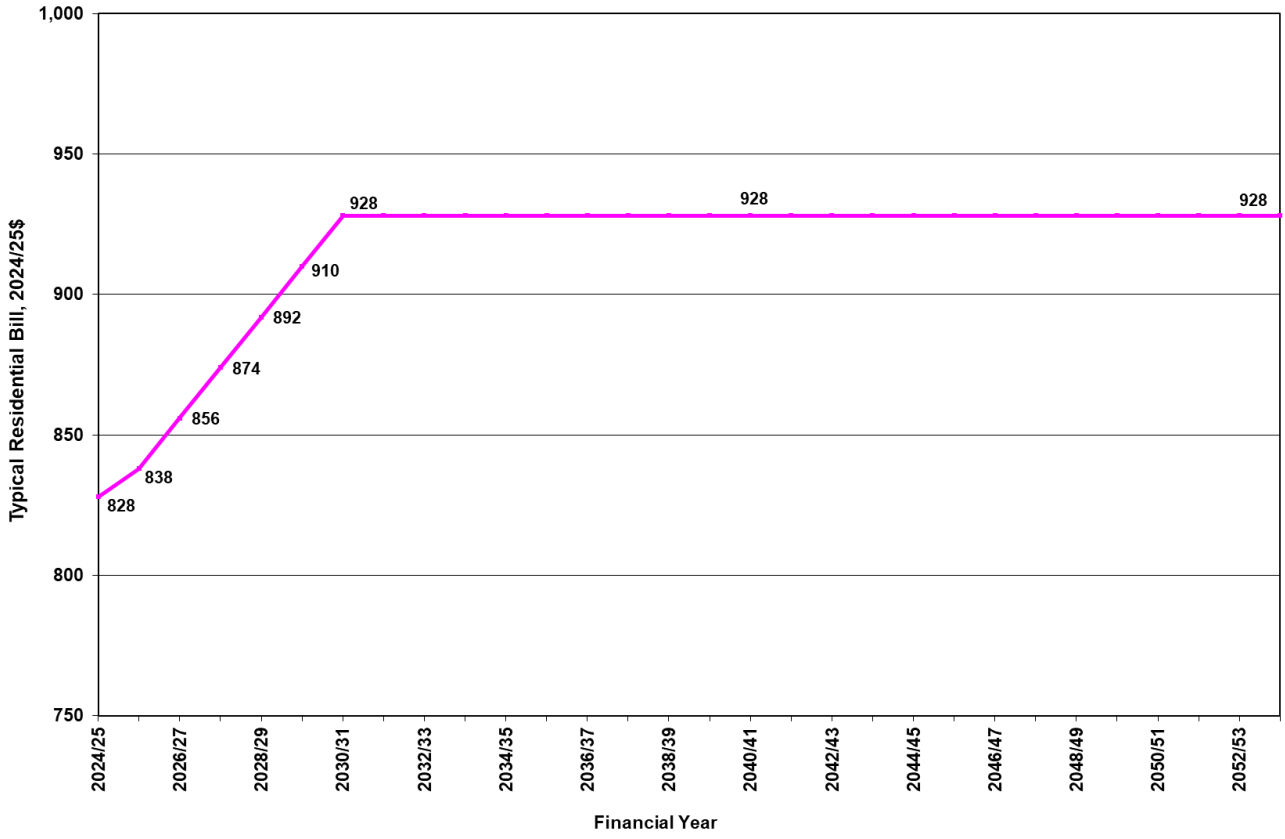

Figure 13-7: Typical Residential Bill - Sewerage

The financial models demonstrate that the 2025-26 annual residential sewerage charge of $838 p.a. ($867 p.a. in 2025-26 dollars) needs to be increased at the rate of 2% per year (5% p.a. after annual CPI adjustments) to achieve $928 p.a. in the year 2030-31. Thereafter, it can be maintained at that level for all the remaining years of the 30-year forecast period.

Council's sewer fund has an outstanding borrowing of $5.81 Million as of 30 June 2024. The model forecasts demonstrate that with the recommended price path, while most of the planned capital works can be funded internally by the Council, new loans will be required to part-fund some of the major capital works planned after 25 years from now.

The forecast levels of TRBs is sufficient to maintain liquidity with a minimum level of cash and investment of $2M in the sewer fund throughout the forecast period. The levels of cash and borrowing outstandings during the forecast period are presented in Figure 13-8.

Projected financial results for the water fund is presented in Table 13-5. Note that all the projected values are in 2024-25 dollars and will require indexing for CPI for the future years. More detailed financial output statements are presented in Appendix H.

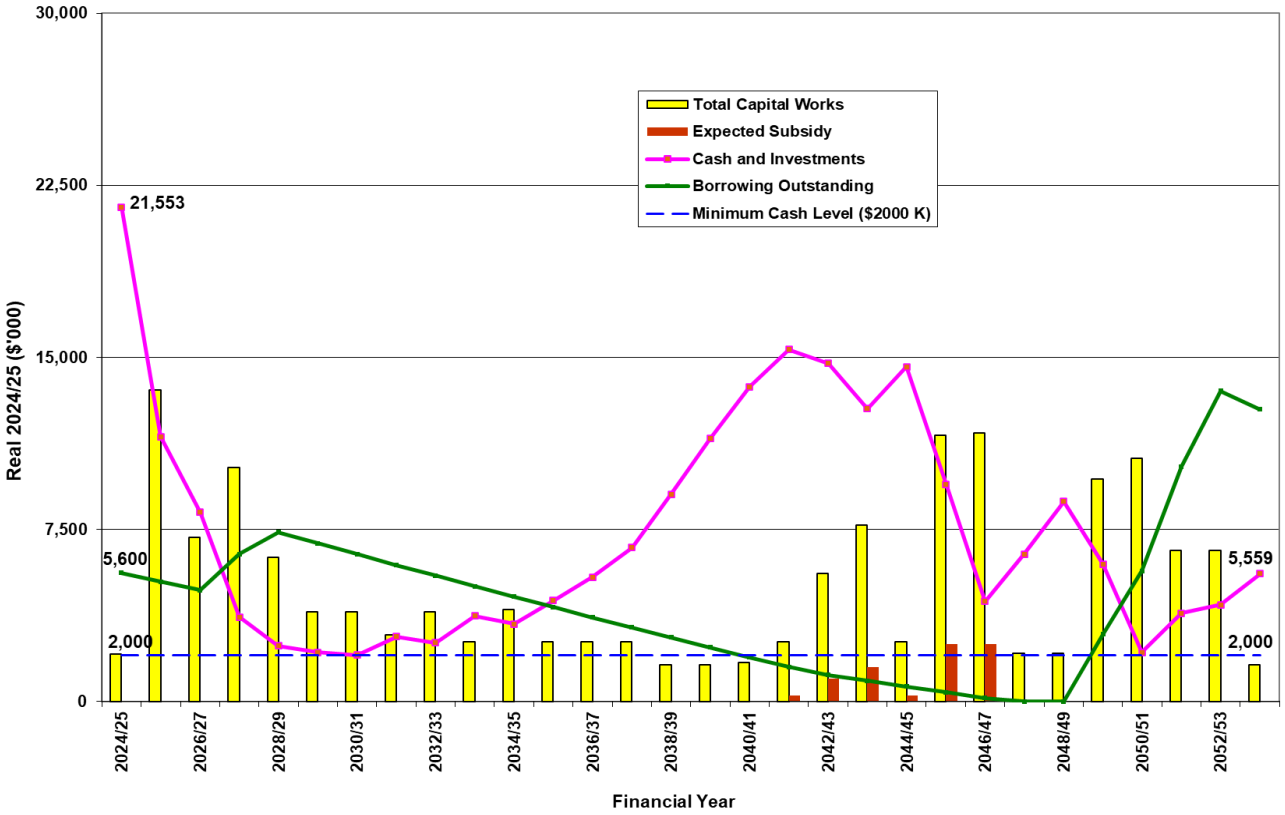

Figure 13-8: Cash and borrowing outstandings projections – Sewerage

13.5.2 Sensitivity of financial projections – Sewerage

Following sensitivities of the sewer fund financial model forecasts for the preferred strategy were analysed:

- Accelerated depreciation of system assets considering average useful life of 50 years instead of current Council estimate of 65 years.
- 40% increase in capital cost estimates of major projects

The impacts of these variables on the sewerage TRB forecasts, borrowing outstandings and cash levels for sewer fund are summarised in the following figures.

The sensitivity analysis demonstrate that the sewerage TRB forecasts are not sensitive to accelerated depreciation of system assets. However, increase in estimated costs of the major immediate, and the medium term capital projects impact the model forecasts, requiring TRB increases from 2026-27 onwards.

Table 13-6: Projected Financial Results – Sewerage

2024/25 ($'000)	Revenue and Expenses			Capital Transactions		Financial Position					System Assets			
Financial Year	Total Revenue	Total Expenses	Operating Result (Before Grants)	Acquisition of Assets	Principal Loan Payments	Cash and Investments	Borrowings	Total Assets	Total Liabilities	Net Assets Committed	Current Replacement Cost	Less: Accumulated Depreciation	Written Down Current Cost	Typical Residential Bills
2024/25	8,610	7,149	1,461	2,048	215	21,553	5,600	118,062	6,595	111,467	144,616	56,089	88,527	828
2025/26	9,443	7,607	1,836	13,590	220	11,547	5,217	118,866	6,232	112,634	156,636	56,920	99,716	838
2026/27	9,481	7,756	1,725	7,140	225	8,247	4,839	119,857	5,874	113,983	162,181	57,813	104,368	856
2027/28	9,429	8,085	1,343	10,190	282	3,680	6,417	122,518	7,472	115,046	170,752	58,812	111,939	874
2028/29	9,629	8,499	1,129	6,290	1,853	2,417	7,376	124,534	8,449	116,085	174,722	59,173	115,549	892
2029/30	9,599	8,534	1,065	3,890	270	2,139	6,891	125,115	7,980	117,135	177,043	60,320	116,723	910
2030/31	9,813	8,628	1,185	3,890	277	2,013	6,413	125,824	7,516	118,308	179,362	61,501	117,861	928
2031/32	9,808	8,692	1,116	2,890	285	2,830	5,942	126,469	7,058	119,411	180,682	62,703	117,979	928
2032/33	9,805	8,776	1,029	3,889	293	2,557	5,476	127,004	6,607	120,397	183,001	63,941	119,060	928
2033/34	9,973	8,819	1,153	2,589	300	3,720	5,016	127,672	6,160	121,512	184,020	65,193	118,828	928
2034/35	9,938	8,880	1,058	3,990	308	3,378	4,562	128,209	5,717	122,492	186,440	66,483	119,958	928
2035/36	9,924	8,928	996	2,590	316	4,387	4,113	128,694	5,279	123,415	187,460	67,788	119,673	928
2036/37	10,052	8,998	1,054	2,589	326	5,423	3,667	129,207	4,847	124,360	188,480	69,108	119,372	928
2037/38	10,383	9,057	1,326	2,590	335	6,703	3,225	129,959	4,418	125,541	189,501	70,444	119,056	928
2038/39	10,521	9,101	1,420	1,590	344	9,026	2,787	130,766	3,994	126,772	189,521	71,781	117,740	928
2039/40	10,742	9,139	1,603	1,590	353	11,453	2,353	131,686	3,573	128,113	189,541	73,117	116,423	928
2040/41	10,797	9,174	1,623	1,689	363	13,717	1,922	132,550	3,154	129,396	189,660	74,455	115,205	928
2041/42	11,167	9,220	1,946	2,590	373	15,339	1,493	133,666	2,738	130,928	190,680	75,809	114,871	928
2042/43	11,962	9,318	2,644	5,590	295	14,745	1,155	135,517	2,412	133,105	194,700	77,225	117,475	928
2043/44	12,615	9,455	3,160	7,690	216	12,756	905	137,985	2,176	135,809	200,820	78,735	122,085	928
2044/45	11,454	9,641	1,813	2,590	224	14,580	654	139,160	1,937	137,223	201,840	80,260	121,579	928
2045/46	13,626	9,839	3,787	11,590	232	9,468	404	142,253	1,699	140,554	211,859	81,940	129,919	928
2046/47	13,637	10,037	3,599	11,690	240	4,362	152	145,305	1,461	143,844	221,980	83,776	138,204	928
2047/48	11,280	10,366	914	2,090	147	6,416	1	145,917	1,323	144,594	222,499	85,619	136,880	928
2048/49	11,497	10,431	1,066	2,090	0	8,713	1	146,771	1,336	145,435	223,020	87,471	135,549	928
2049/50	11,472	10,813	658	9,690	76	5,981	2,924	150,078	4,272	145,806	231,140	89,447	141,693	928
2050/51	11,509	11,202	307	10,590	156	2,132	5,683	153,037	7,044	145,993	240,160	91,563	148,597	928
2051/52	11,686	11,875	-190	6,590	288	3,843	10,230	157,484	11,605	145,879	245,180	93,756	151,424	928
2052/53	11,795	12,241	-445	6,590	399	4,210	13,533	160,516	14,921	145,595	250,200	96,027	154,174	928
2053/54	11,921	12,357	-436	1,590	414	5,559	12,725	159,535	14,126	145,409	250,220	98,297	151,923	928

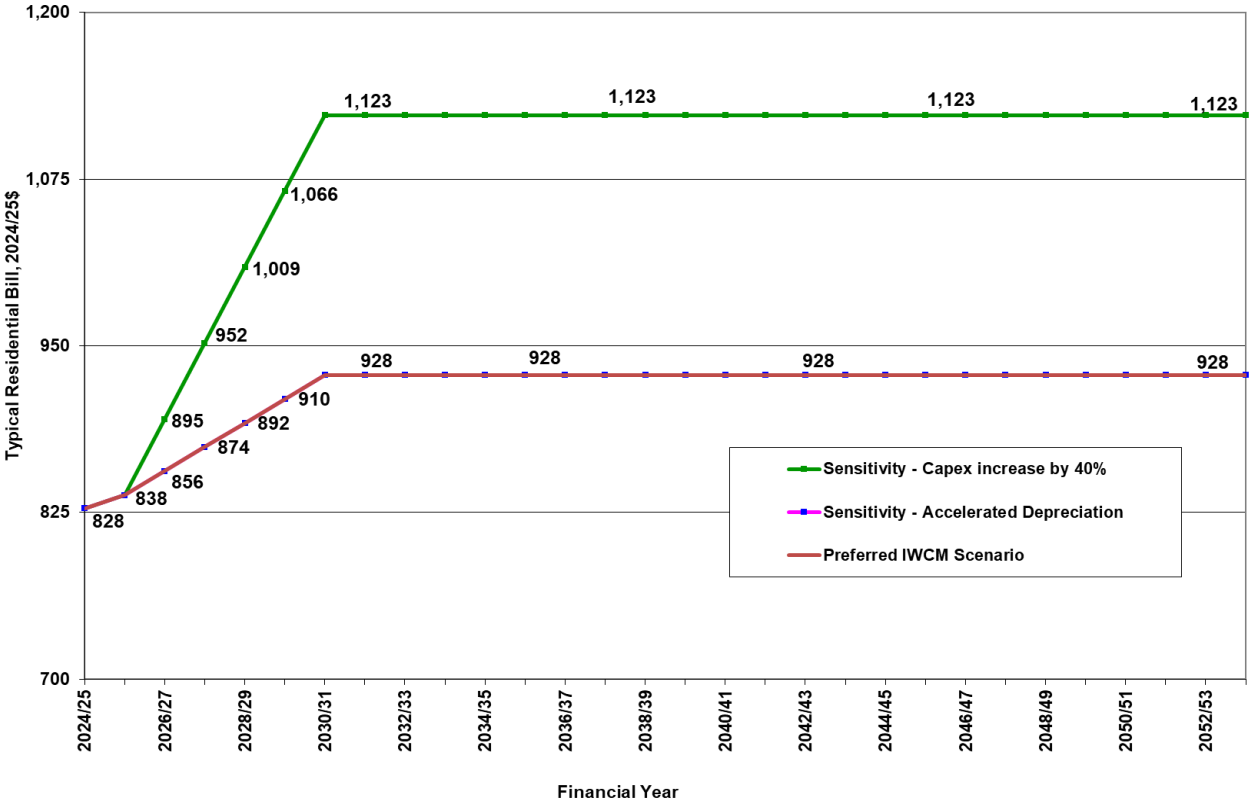

Figure 13-9: Sensitivity of TRB forecasts – Sewerage

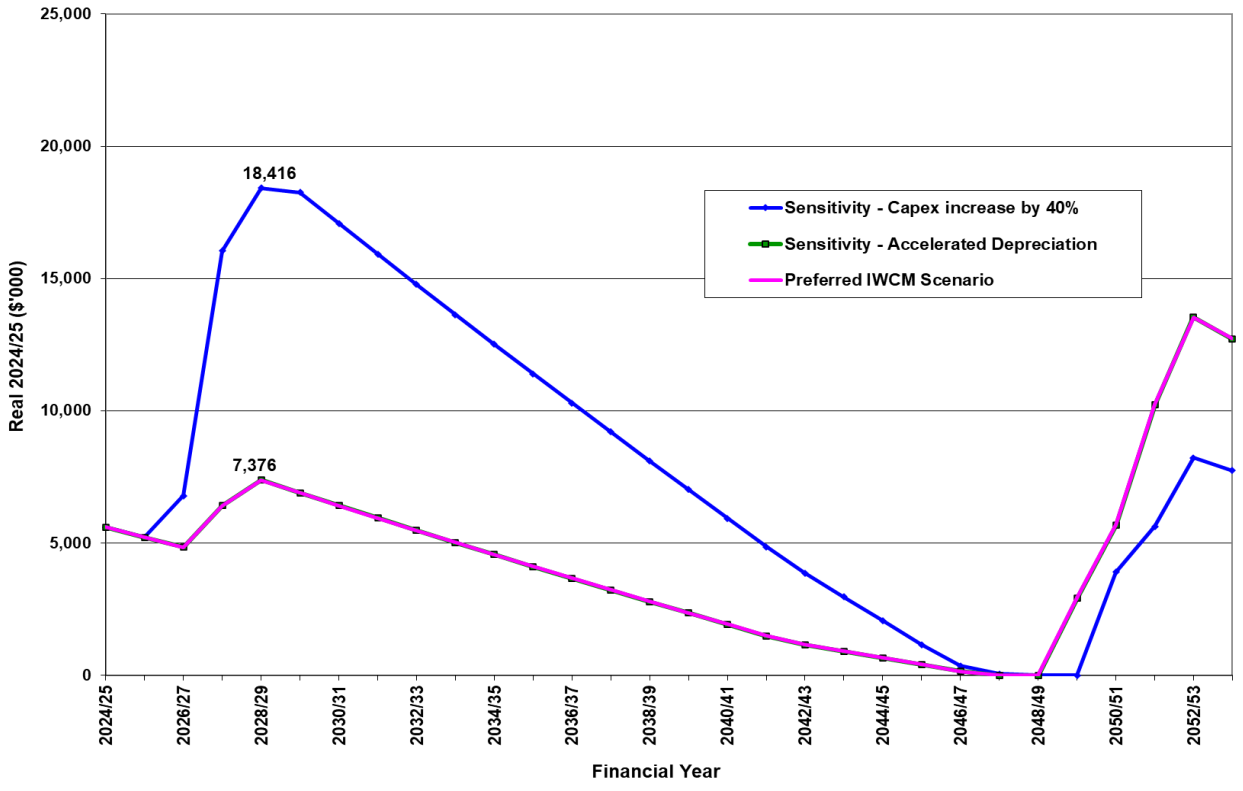

Figure 13-10: Sensitivity of Borrowing outstandings – Sewerage

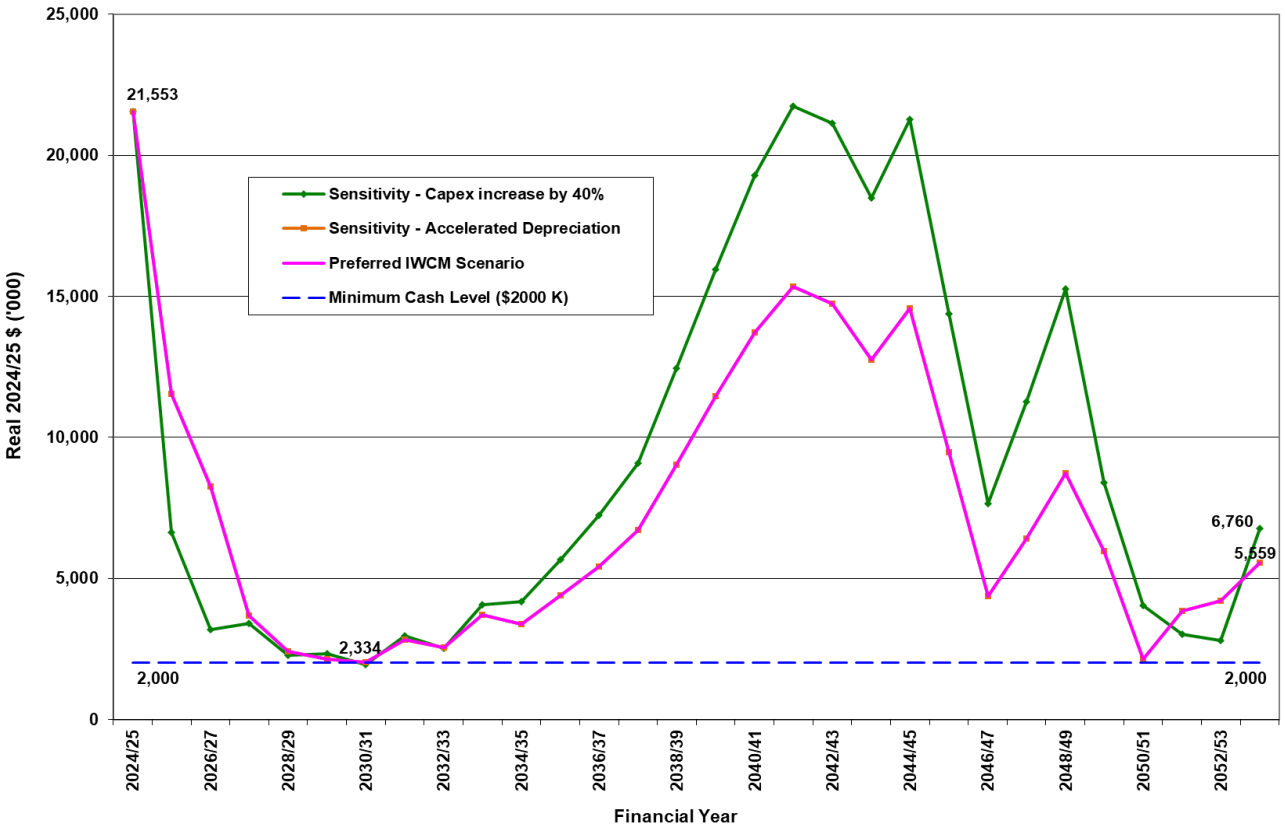

Figure 13-11: Sensitivity of Cash and Investments – Sewerage

14. Strategic planning assurance and review

The Regulatory and Assurance Framework for local water utilities includes and assurance process to assess whether effective, evidence-based strategic planning occurs. Local water utilities may request an initial assessment of the effectiveness of their strategic planning. They may also request a re-assessment at any time, to get an assessment result and maintain its currency.

Local water utilities may also opt to participate in an annual 'check-in' process to ensure their assessment result remains current. Nambucca Valley Council does not wish to opt in to the annual 'check in' process. As Nambucca Shire has a growing population, the review will be based on the census results. Accordingly Council's preference with regard to maintaining currency, is to:

- Update the Population and Water Cycle Projections report on a 5 yearly cycle. The next census is scheduled for 11 August 2026, with data available in late 2027. The Population and Water Cycle Projections would therefore be reviewed for 2026 to 2061 in July-December 2028.
- Update the water and sewer hydraulic modelling for 2030-2060 during January in June 2029.
- Review the 2025 Strategic Plan assumptions for 2023-2053 (the major projects of the VUGA water and sewer and the Macksville and Scotts Head STP Augmentations should be completed, reducing uncertainty in the financial forecast).
- Extend the Strategic Plan to cover the 2030-2060 planning horizon

15. References

NSW Public Works (May 2025). Hydraulic Modelling of Macksville Sewer Network, Report No. P-FY20231685-PWO-WSP-RP. Report prepared for Nambucca Valley Council.

NSW Urban Water Services (April 2025). Nambucca Water Supply Second Yield Study, Report No. 25001. Report prepared for Nambucca Valley Council.

NSW Public Works (April 2025). Scotts Head Sewage Treatment Plan Upgrade Options, Report No. P-FY20231685-PWO-GEN-RP-01. Report prepared for Nambucca Valley Council.

NSW Public Works (March 2025). Destop Performance Assessment Report – Nambucca Heads Sewage Treatment Plantr, Report No. P-FY20231685-PWO-PRO-RP-NH. Report prepared for Nambucca Valley Council.

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NSW Public Works (January 2025). Population and Water Cycle Projections, Report No. P-FY20231685-PWO-PRO-RP-PWC. Report prepared for Nambucca Valley Council.

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Nambucca Valley Council (August 2022). Water Supply Asset Management Plan (Concise), Document prepared for Nambucca Valley Council.

Nambucca Valley Council (August 2022). Sewerage Services Asset Management Plan (Concise), Document prepared for Nambucca Valley Council.

Appendix A Lifecycle cost analysis

Nambucca Valley Council - Scenario

Water Service

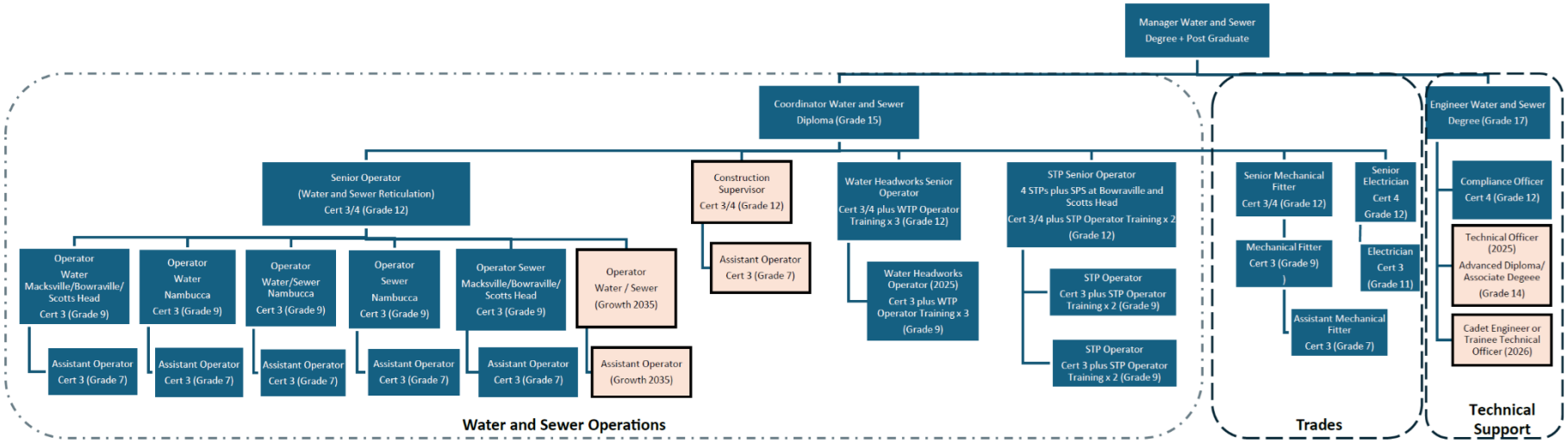
ITEM	ILOS %	Growth %	DESCRIPTION	AMT $K	PRESENT WORTH ($K) 4%	7%	10%	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052
1.0			CAPITAL COSTS																																
1.1	100%	0%	Water quality in Bowraville storage																																
			Upgrade WTP with new conventional WTP	40,000	21,356	13,549	8,705	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40,000	0	0	0	0	0	0	0	0	0	0	0
			TOTAL CAPITAL COST (including 30% contingency, 5% SID & 10% PM & CM)	**40,000**	**21,356**	**13,549**	**8,705**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2.0			OPERATION AND MAINTENANCE COSTS																																
2.1	100%	0%	Water quality in Bowraville storage																																
			New WTP (1.5% of capital cost)	6,600	2,806	1,524	848	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	600	600	600	600	600	600	600	600	600	600	600
			TOTAL OPERATION & MAINTENANCE COSTS	**6,600**	**2,806**	**1,524**	**848**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**
			TOTAL PRESENT VALUE	**46,600**	**24,163**	**15,073**	**9,553**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,000**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**	**600**

Nambucca Valley Council - Scenario

Sewerage Service

ITEM	ILOS %	Growth %	DESCRIPTION	AMT $K	PRESENT WORTH ($K) 4%	7%	10%	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
1.0			CAPITAL COSTS																																			
1.1	75%	25%	Macksville sewerage scheme																																			
			Upgrade/augment collection and transfer system	6,000	5,242	5,767	5,355	0	1,000	1,000	1,000	1,000	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Upgrade/augment the STP	26,600	14,987	12,180	13,124	0	1,000	4,000	4,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	500	500	8,000	8,000			
			Off-site reuse reticulation network	1,400	946	712	540	0	0	0	0	0	0	0	0	0	0	1,400																				
1.2	50%	50%	Nambucca Heads sewerage scheme																																			
			Upgrade/augment collection and transfer system	6,000	3,984	2,968	2,235	0	0	0	0	0	0	0	0	1,000	1,000	1,000	1,000	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Upgrade STP to address sludge management issues	1,650	1,417	1,270	1,191	0	0	50	100	1,500																										
			Augment STP capacity to service future growth	21,100	9,112	4,958	2,745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	1,000	10,000	10,000						
1.3	75%	25%	Scotts Head sewerage scheme																																			
			Upgrade/augment collection and transfer system	5,200	4,034	3,359	2,815	0	0	0	0	0	1,300	1,300	1,300	1,300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Upgrade/augment the STP	5,800	7,774	5,381	4,665	0	0	500	2,000	2,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	1,000	5,000	5,000	
1.3	0%	100%	Bowraville sewerage scheme																																			
			Sewer relining to address inflow/infiltration	1,000	889	816	751	0	0	0	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			TOTAL CAPITAL COST (including 30% contingency, 5% SID & 10% PM & CM)	**74,750**	**48,384**	**37,411**	**33,421**	**0**	**2,000**	**5,550**	**8,600**	**4,700**	**2,300**	**2,300**	**1,300**	**2,300**	**1,000**	**2,400**	**1,000**	**1,000**	**1,000**	**0**	**0**	**0**	**0**	**0**	**100**	**1,000**	**10,000**	**10,100**	**500**	**500**	**8,000**	**8,100**	**1,000**	**5,000**	**5,000**	**0**
2.0			OPERATION AND MAINTENANCE COSTS																																			
2.1	75%	25%	Macksville sewerage scheme																																			
			Collection and transfer system (0.5% of capital cost)	560	329	215	147	0	0	0	0	0	15	20	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Upgraded STP (1% of capital cost)	2,040	1,234	832	590	0	0	0	0	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
			Off-site reuse reticulation (0.5% of capital ost)	119	64	38	23	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2.2	50%	50%	Nambucca Heads sewerage scheme																																			
			Collection and transfer system (0.5% of capital cost)	390	202	110	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
			Upgraded STP to address SM (1% of capital cost)	173	102	68	47	0	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
			Augment STP capacity to service future growth	1,966	1,142	648	394	0	0	0	0	0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	242	242	242	242	242	242	242
2.3	75%	25%	Scotts Head sewerage scheme																																			
			Collection and transfer system (0.5% of capital cost)	137	78	50	33	0	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
			Upgraded STP (1% of capital cost)	600	386	254	178	0	0	0	0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	100
			TOTAL OPERATION & MAINTENANCE COSTS	**5,984**	**3,538**	**2,215**	**1,474**	**0**	**0**	**0**	**0**	**110**	**175**	**180**	**191**	**191**	**191**	**191**	**198**	**198**	**198**	**198**	**228**	**228**	**228**	**228**	**228**	**228**	**228**	**428**	**428**	**428**	**428**	**428**	**428**	**428**	**503**
			TOTAL PRESENT VALUE	**80,734**	**51,923**	**39,625**	**34,895**	**0**	**2,000**	**5,550**	**8,600**	**4,810**	**2,475**	**2,480**	**1,491**	**2,491**	**1,191**	**2,591**	**1,198**	**1,198**	**1,198**	**198**	**228**	**228**	**228**	**228**	**328**	**1,228**	**10,228**	**10,328**	**928**	**928**	**8,428**	**8,528**	**1,428**	**5,428**	**5,428**	**503**

Appendix B Proposed Water and Sewer Organisation Structure



Staff requiring Cert 3 in Water Industry Operations = 19
Staff turnover = 8% = 1.52 FTE PA
Cert 3 training = 2 years
Employ 1 Trainee per 2 years = 33% of turnover
Employ 2 Trainees per 2 years = 66% of turnover

Fleet:

1 x Senior Operator dual cab utility
2 x Water operational trucks
3 x Sewer operational trucks
1 x Construction truck
3 x STP single cab utilities
2 x Water Headworks single cab utilities
1 x Pump mechanic single cab utility
1 x Fitter's truck
2 x Electrician Econovan
1 x Technical Officer Utility
2 x Engineer vehicles
1 x Trade Waste / Backflow / WQ Officer Utility

Plant:

Tipper
Boat (dam)
Jetting trailer
Vacuum trailer
Construction tool trailer
Generator fleet
Portable diesel pump(s)
Remote Controlled Mower (dam)

Appendix Figure B-1 Proposed Water and sewer organisation structure

Appendix C 30-year Capital Works Plan – Water supply

Nambucca Valley Council

Water Supply - 30-Year Capital Works Program

Current Year 2024 /25

Capital Works in 2024/25 ($'000)

							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ITEMS	**Grant/ Susidy**	**ILOS**	**GROWTH**	**RENEW**	**Check**	**Total**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**	**2030/31**	**2031/32**	**2032/33**	**2033/34**	**2034/35**	**2035/36**	**2036/37**	**2037/38**	**2038/39**	**2039/40**	**2040/41**	**2041/42**	**2042/43**	**2043/44**	**2044/45**	**2045/46**	**2046/47**	**2047/48**	**2048/49**	**2049/50**	**2050/51**	**2051/52**	**2052/53**	**2053/54**
IWCM							2024-25 capital works from Council's Revenue policy																															
WTP upgrade with new conventional WTP		50%	35%	15%	100%	**40,000**														500	4,500	20,000	15,000													
New Assets																																				
New Service Connections		100%			100%	**2,390**	70	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Valla Urban Growth Area (VUGA)		100%			100%	**10,000**		4,000				6,000																								
Bulk Water Fill Stations		100%			100%	**120**			120																											
Water Bottle Refill Stations		100%			100%	**90**				30	30	30																								
Bowra Dam Mixers		100%			100%	**200**			200																											
						0																														
Augmentation																																				
Distribution System Upgrades			100%		100%	**5,000**									1,000					1,000					1,000				1,000					1,000	
Nambucca Valley WTP (15 Mld)			100%		100%	**0**																														
Nambucca Heads Reservoir			100%		100%	**500**																						500								
						0																														
Renewal																																				
Water Meter Replacements				100%	100%	**2,900**		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Water Service Renewals				100%	100%	**870**		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Valve and Hydrant Replacements				100%	100%	**2,400**	370	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Water Main Renewals				100%	100%	**14,685**	185	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Water Pumping Stations Renewals				100%	100%	**1,450**		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Water Reservoir Renewals				100%	100%	**4,940**	40	1,500	1,500	1,000	200	100	100	100	100	100	100	100																			
Water Treatment Renewals				100%	100%	**1,190**	40	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50							
SCADA & Telemetry Renewals				100%	100%	**635**	55	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Bores				100%	100%	**40**	40																														
GRAND TOTAL						**87,410**	**800**	**6,400**	**2,720**	**1,930**	**1,130**	**7,030**	**1,000**	**1,000**	**2,000**	**1,000**	**1,000**	**1,000**	**900**	**2,400**	**5,400**	**20,900**	**15,900**	**900**	**1,900**	**900**	**900**	**900**	**1,400**	**1,900**	**850**	**850**	**850**	**850**	**1,850**	**850**
			Grant/ Subsidy			**0**	0	0	0	0	0	0	0																									

Appendix D 30-year Capital Works Plan – Sewerage

Nambucca Valley Council

Sewerage - 30-Year Capital Works Program

Current Year 2024 /25

Capital Works in 2024/25 ($'000)

							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ITEMS	**Grant/ Subsidy**	**ILOS**	**GROWTH**	**RENEWAL**	**Check**	**Total**	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54
							2024-25 capital works from Council's Revenue policy																															
BOWRAVILLE																																				
Bowraville STP Augmentation	25%	80%	20%		100%	**11,100**																	100	1,000	4,000	6,000										
Bowraville sewer relining to address inflow/ infitration		100%			100%	**1,000**				1,000																										
		100%			100%	**0**																														
MACKSVILLE																																				
South Macksville -Urban Release Sewerage Pump		100%			100%	**1,600**	1,500																					100								
Macksville STP - Augmentation	0%	100%			100%	**26,500**		1,000	4,000	4,500																			500	500	8,000	8,000				
Macksville Sewage Effluent Reuse					0%	**0**																														
Macksville STP Renewal				100%	100%	**50**	50																													
Upgrade/augment collection and transfer system		75%	25%		100%	**6,023**	23	1,000	1,000	1,000	1,000	1,000	1,000																							
Macksville catchment 5 upgrade - Install rainstoppers		100%			100%	**50**	50																													
Off-sit reuse reticulation network		75%	25%		100%	**1,400**											1,400																			
						0																														
NAMBUCCA HEADS						**0**																														
New Service Connections					0%	**0**																														
Valla Urban Growth Area (VUGA)			100%		100%	**10,000**		10,000																												
Valla Beach - SPS renewal				100%	100%	**8**	8																													
Upgrade/augment collection and transfer system		50%	50%		100%	**6,132**	132								1,000	1,000	1,000	1,000	1,000	1,000																
Sewer Mains renewal - Rosedale street				100%	100%	**25**	25																													
Nambucca Heads - STP Augmentation - Preliminaries		100%			100%	**100**																				100										
Nambucca Heads - STP Augmentation - Construction	25%	100%			100%	**21,000**																					1,000	10,000	10,000							
NH STP - Upgrades for sludge management		50%		50%	100%	**1,650**			50	100	1,500																									
SCOTTS HEAD						**0**																														
Scotts Head STP augmentation - Preliminaries		50%	50%		100%	**500**			500																											
Scotts Head STP augmentation - Design & Construction	0%	50%	50%		100%	**15,300**				2,000	2,200																				100	1,000	5,000	5,000		
Scotts Head SPS renewal				100%	100%	**20**	20																													
Upgrade/augment collection and transfer system		75%	25%		100%	**5,200**						1,300	1,300	1,300	1,300																					
ALL SHARED																																				
Sewer Mains and Service Connection - Relining & Renewals				100%	100%	**14,700**	200	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Sewer Manholes Renewals				100%	100%	**4,350**		150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Pumping Stations Renewals				100%	100%	**23,200**		800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Sewage Treatment Plant Renewals				100%	100%	**2,900**		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
SCADA and Telemetry Renewals				100%	100%	**580**		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
New Service Connections			100%		100%	**580**		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Sewer shed upgrade		100%			100%	**40**	40																													
GRAND TOTAL						**154,008**	**2,048**	**13,590**	**7,140**	**10,190**	**6,290**	**3,890**	**3,890**	**2,890**	**3,890**	**2,590**	**3,990**	**2,590**	**2,590**	**2,590**	**1,590**	**1,590**	**1,690**	**2,590**	**5,590**	**7,690**	**2,590**	**11,590**	**11,690**	**2,090**	**2,090**	**9,690**	**10,590**	**6,590**	**6,590**	**1,590**
			Grant/ Subsidy			**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	1000	1500	250	2500	2500	0	0	0	0	0	0	0

Appendix E Financial Model Input Data – Water supply

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Historical Operating Statement

FINMOD
DEPARTMENT OF COMMERCE

	2022/23*	2023/24*
EXPENSES		
Management Expenses	*1266*	*1513*
Administration	1226	1071
Engineering and Supervision	40	442
Operation and Maintenance Expenses	*1680*	*1929*
Operation Expenses	91	1706
Maintenance Expenses	1461	
Energy Costs	128	158
Chemical Costs		65
Purchase of Water		
Depreciation	*1814*	*1963*
System Assets	1814	1963
Plant & Equipment		
Interest Expenses	1347	1311
Other Expenses	300	468
TOTAL EXPENSES	**6407**	**7184**
REVENUES		
Rates & Service Availability Charges	*1149*	*1284*
Residential	891	998
Non-Residential	258	286
User Charges	*3949*	*4523*
Sales of Water : Residential	2886	3389
Sales of Water : Non-Residential	1063	1134
Extra Charges		
Interest Income	479	1019
Other Revenues	302	137
Grants	*1138*	*2393*
Grants for Acquisition of Assets	1055	1923
Pensioner Rebate Subsidy	83	85
Other Grants		385
Contributions	*782*	*120*
Developer Charges	649	
Developer Provided Assets	43	
Other Contributions	90	120
TOTAL REVENUES	**7799**	**9476**
OPERATING RESULT	**1392**	**2292**
OPERATING RESULT (less Grants for Acq of Assets)	**337**	**369**

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Historical Statement of Financial Position

FINMOD
DEPARTMENT OF COMMERCE

	2022/23*	2023/24*
Cash and Investments	23180	23816
Receivables	1531	2265
Inventories	28	24
Property, Plant & Equipment	*106868*	*112517*
System Assets (1)	106868	106519
Plant & Equipment		5998
Other Assets	482	406
TOTAL ASSETS	**132089**	**139028**
LIABILITIES		
Bank Overdraft		
Creditors	468	593
Borrowings	20639	20089
Provisions		
TOTAL LIABILITIES	**21107**	**20682**
NET ASSETS COMMITTED	**110982**	**118346**
EQUITY		
Accumulated Operating Result	67440	69746
Asset Revaluation Reserve	43542	48600
TOTAL EQUITY	**110982**	**118346**
(1) Notes to System Assets		
Current Replacement Cost	157483	158396
Less: Accumulated Depreciation	50615	51877
Written Down Current Cost	106868	106519

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Base Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Financial Data																									
Inflation Rate - General (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Inflation Rate - Capital Works (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Borrowing Interest Rate for New Loans (%)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Investment Interest Rate (%)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Number of Assessments																									
Growth Rate (%)																									
Residential Assessments	1.66	1.76	1.59	1.64	1.28	1.36	1.18	1.02	1.11	0.96	0.81	0.81	0.98	0.90	0.96	0.91	0.90	0.87	0.96	0.93	0.87	0.90	0.91	0.94	0.89
Non-Residential Assessments	1.67	2.15	2.10	3.39	3.16	1.59	1.68	1.10	1.09	1.08	1.06	1.05	1.04	1.03	1.02	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Assessments	1.66	1.80	1.65	1.83	1.49	1.39	1.23	1.03	1.11	0.97	0.84	0.84	0.98	0.91	0.96	0.85	0.80	0.77	0.85	0.82	0.77	0.80	0.82	0.84	0.79
Number of New Assessments																									
Residential	107	115	106	111	88	95	83	73	80	70	60	60	73	68	73	70	70	68	76	74	70	73	75	78	74
Non-Residential	13	17	17	28	27	14	15	10	10	10	10	10	10	10	10	4	0	0	0	0	0	0	0	0	0
Total New Assessments	120	132	123	139	115	109	98	83	90	80	70	70	83	78	83	74	70	68	76	74	70	73	75	78	74
Projected Number of Assessments																									
Residential	6546	6661	6767	6878	6966	7061	7144	7217	7297	7367	7427	7487	7560	7628	7701	7771	7841	7909	7985	8059	8129	8202	8277	8355	8429
Non-Residential	792	809	826	854	881	895	910	920	930	940	950	960	970	980	990	994	994	994	994	994	994	994	994	994	994
Total Projected Assessments	7338	7470	7593	7732	7847	7956	8054	8137	8227	8307	8377	8447	8530	8608	8691	8765	8835	8903	8979	9053	9123	9196	9271	9349	9423
Backlog Assessments																									
Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Backlog Assessments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developer Charges / Vacant Assessments (Values in 2024/25 $)																									
Developer Charges $/Assessment																									
Residential	10021	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538
Non-Residential	10021	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538	7538
Number of Vacant Residential Assessments	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386
Average Charge of Vacant Assessments	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
% of Occupied Assessments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation of Existing Plant and Equipment (Values in 2024/25 $'000)																									
Current Replacement Cost of System Assets	163148																								
Override																									
Written Down Current Cost of System Assets	109715																								
Override																									
Annual Depreciation of Existing System Assets	2022																								
Override																									
Written Down Value of Plant and Equipment	5998																								
Override																									
Annual Depreciation of Existing Plant and Equipment	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Base Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Existing Loan Payments (Values in Inflated $'000)																									
Existing Loan Payments : Principal (Total:20089)	587	626	667	711	2199	1378	703	749	6661	5808	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Loan Payments : Interest (Total:9406)	1276	1236	1195	1150	1078	958	863	817	689	144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital Works Program (Values in 2024/25 $'000)																									
Subsidised Scheme (Total:32800)	70	4080	400	110	110	6110	80	80	80	80	80	80	80	330	2330	10080	7580	80	80	80	80	80	80	80	80
Other New System Assets (Total:19500)	0	0	0	0	0	0	0	0	1000	0	0	0	0	1175	1575	7000	5250	0	1000	0	0	0	500	1000	0
Renewals (Total:35110)	730	2320	2320	1820	1020	920	920	920	920	920	920	920	820	895	1495	3820	3070	820	820	820	820	820	820	820	770
Total Capital Works (Total:87410)	800	6400	2720	1930	1130	7030	1000	1000	2000	1000	1000	1000	900	2400	5400	20900	15900	900	1900	900	900	900	1400	1900	850
Grant For Acquisition of Assets (% of Subsidised Scheme)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grant For Acquisition of Assets ($) (Total:0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developer Provided Assets (Total:0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant and Equipment Expenditure / Asset Disposal (Values in 2024/25 $'000)																									
Plant and Equipment Expenditure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from Disposal of Plant and Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Written Down Value of Plant and Equipment Disposed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gain/Loss on Disposal of Plant and Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from Disposal of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Written Down Value of Assets Disposed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gain/Loss on Disposal of System Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Revised/Additional Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
OMA / Revenue Overrides (Values in 2024/25 $'000)																									
Administration	1121	1141	1160	1181	1199	1216	1231	1244	1258	1270	1281	1292	1305	1317	1330	1341	1352	1362	1374	1385	1396	1407	1419	1431	1442
Override																									
Engineering and Supervision	463	471	479	488	495	502	508	513	519	524	528	532	537	542	547	552	556	560	565	570	574	579	584	589	594
Override	463	714	726	739	750	761	770	778	787	794	801	808	816	823	831	838	845	851	859	866	872	879	887	894	901
Operating Expenses	1786	1818	1848	1882	1910	1937	1961	1981	2003	2022	2039	2056	2076	2095	2115	2133	2150	2167	2185	2203	2220	2238	2256	2275	2293
Override	941	958	974	991	1006	1020	1033	1043	1055	1065	1074	1083	1094	1104	1114	1124	1133	1882	1898	1913	1928	1943	1959	1976	1991
Maintenance Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Override	765	779	792	806	818	829	840	848	858	866	873	881	889	897	906	914	921	928	936	944	951	959	966	975	982
Energy Costs	165	168	171	174	177	179	181	183	185	187	189	191	193	195	197	199	201	203	205	207	209	211	213	215	217
Override																									
Chemical Costs	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
Override																									
Purchase of Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Override																									
Other Expenses	490	499	507	516	524	531	538	544	550	555	560	565	571	576	582	587	592	597	602	607	612	617	622	627	632
Override																									
Other Revenue	143	146	148	151	153	155	157	159	161	163	164	165	167	169	171	172	173	174	175	176	177	178	179	181	182
Override																									
Other Grants	403	410	417	425	431	437	442	447	452	456	460	464	469	473	478	482	486	490	494	498	502	506	510	514	518
Override	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Other Contributions	126	128	130	132	134	136	138	139	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157
Override	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Developer Charges Overrides (Values in 2024/25 $'000)																									
Calculated from Scheme Data	1203	995	927	1048	867	822	739	626	678	603	528	528	626	588	626	558	528	513	573	558	528	550	565	588	558
Override	605																								
Pensioner Rebate (Values in Inflated $)																									
Pensioner Rebate per Pensioner ($)	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Override																									
Pensioner Rebate Subsidy (%)	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
Override																									
Number of Pensioner Assessments	1796	1827	1856	1887	1911	1937	1960	1980	2002	2021	2037	2054	2074	2092	2112	2132	2151	2169	2190	2211	2230	2250	2270	2292	2312
Override																									
Percentage of Pensioners (%)	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43	27.43
Override																									
Pensioner Rebate	157	160	162	165	167	169	172	173	175	177	178	180	181	183	185	187	188	190	192	193	195	197	199	201	202
Pensioner Rebate Subsidy	86	88	89	91	92	93	95	95	96	97	98	99	100	101	102	103	103	105	106	106	107	108	109	111	111
Revenue Split (%)																									
Residential Rates	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25	17.25
Override																									
Non-Residential Rates	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05
Override																									
Sales of Water: Residential	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30	57.30
Override																									
Sales of Water: Non-Residential	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40
Override																									
Extra Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Override																									
Total Non-Residential Revenue (%)	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45	25.45
Total Residential Revenue (%)	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55	74.55
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Revised/Additional Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
New Loan Payment Overrides (Values in Inflated $'000)																									
Standard Loan Payments: Principal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	432	459	487	516	548	581	616	654	694
Standard Loan Payments: Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	956	930	903	872	842	808	773	735	695
Structured Loan Payments: Principal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Structured Loan Payments: Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalised Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Loan Payments: Principal Override	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	432	459	487	516	548	581	616	654	694
Total New Loan Payments: Interest Override	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	956	930	903	872	842	808	773	735	695
Capitalised Interest Override	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix F Financial Model Input Data – Sewerage

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Historical Operating Statement

FINMOD
DEPARTMENT OF COMMERCE

	2022/23*	2023/24*
EXPENSES		
Management Expenses	*1078*	*1341*
Administration	994	994
Engineering and Supervision	84	347
Operation and Maintenance Expenses	*2715*	*2525*
Operation Expenses	1496	1354
Maintenance Expenses	685	533
Energy Costs	334	361
Chemical Costs	200	277
Depreciation	*1979*	*2125*
System Assets	1979	2125
Plant & Equipment		
Interest Expenses	246	322
Other Expenses	274	317
TOTAL EXPENSES	**6292**	**6630**
REVENUES		
Rates & Service Availability Charges	*5222*	*5889*
Residential	3860	4416
Non-Residential	1362	1473
Trade Waste Charges	91	91
Other Sales and Charges		
Extra Charges		290
Interest Income	9	823
Other Revenues	690	
Grants	*96*	*2791*
Grants for Acquisition of Assets	23	2715
Pensioner Rebate Subsidy	73	72
Other Grants		4
Contributions	*1036*	*0*
Developer Charges	913	
Developer Provided Assets	114	
Other Contributions	9	
TOTAL REVENUES	**7144**	**9884**
OPERATING RESULT	**852**	**3254**
OPERATING RESULT (less Grants for Acq of Assets)	**829**	**539**

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Historical Statement of Financial Position

	2022/23*	2023/24*
Cash and Investments	17010	19937
Receivables	657	1385
Inventories		
Property, Plant & Equipment	*88520*	*92863*
System Assets (1)	88520	86112
Plant & Equipment		6751
Other Assets	51	
TOTAL ASSETS	**106238**	**114185**
LIABILITIES		
Bank Overdraft		
Creditors	302	947
Borrowings	6018	5815
Provisions		
TOTAL LIABILITIES	**6320**	**6762**
NET ASSETS COMMITTED	**99918**	**107423**
EQUITY		
Accumulated Operating Result	61887	65161
Asset Revaluation Reserve	38031	42262
TOTAL EQUITY	**99918**	**107423**

(1) Notes to System Assets

Current Replacement Cost	138865	138710
Less: Accumulated Depreciation	50345	52598
Written Down Current Cost	88520	86112

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Base Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Financial Data																									
Inflation Rate - General (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Inflation Rate - Capital Works (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Borrowing Interest Rate for New Loans (%)	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Investment Interest Rate (%)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Number of Assessments																									
Growth Rate (%)																									
Residential Assessments	1.70	1.79	1.62	1.67	1.30	1.39	1.20	1.04	1.13	0.98	0.83	0.82	1.05	0.98	1.04	0.98	0.98	0.94	1.04	0.99	0.93	0.97	0.97	1.02	0.95
Non-Residential Assessments	5.92	5.59	4.65	5.21	4.81	2.78	2.71	2.64	2.57	2.50	2.44	2.38	2.44	2.50	2.44	1.62	1.28	1.16	1.35	1.33	1.11	1.20	1.09	1.17	1.06
Total Assessments	2.04	2.11	1.89	1.99	1.63	1.52	1.34	1.20	1.27	1.13	0.99	0.98	1.19	1.14	1.19	1.05	1.01	0.97	1.07	1.03	0.95	1.00	0.99	1.04	0.97
Number of New Assessments																									
Residential	107	115	106	111	88	95	83	73	80	70	60	60	77	73	78	74	75	73	81	78	74	78	79	84	79
Non-Residential	33	33	29	34	33	20	20	20	20	20	20	20	21	22	22	15	12	11	13	13	11	12	11	12	11
Total New Assessments	140	148	135	145	121	115	103	93	100	90	80	80	98	95	100	89	87	84	94	91	85	90	90	96	90
Projected Number of Assessments																									
Residential	6419	6534	6640	6751	6839	6934	7017	7090	7170	7240	7300	7360	7437	7510	7588	7662	7737	7810	7891	7969	8043	8121	8200	8284	8363
Non-Residential	590	623	652	686	719	739	759	779	799	819	839	859	880	902	924	939	951	962	975	988	999	1011	1022	1034	1045
Total Projected Assessments	7009	7157	7292	7437	7558	7673	7776	7869	7969	8059	8139	8219	8317	8412	8512	8601	8688	8772	8866	8957	9042	9132	9222	9318	9408
Backlog Assessments																									
Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Backlog Assessments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developer Charges / Vacant Assessments (Values in 2024/25 $)																									
Developer Charges $/Assessment																									
Residential	12760	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320
Non-Residential	12760	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320
Number of Vacant Residential Assessments	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
Average Charge of Vacant Assessments	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
% of Occupied Assessments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation of Existing Plant and Equipment (Values in 2024/25 $'000)																									
Current Replacement Cost of System Assets	142871																								
Override																									
Written Down Current Cost of System Assets	88695																								
Override																									
Annual Depreciation of Existing System Assets	2189																								
Override																									
Written Down Value of Plant and Equipment	6751																								
Override																									
Annual Depreciation of Existing Plant and Equipment	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Base Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Existing Loan Payments (Values in Inflated $'000)																									
Existing Loan Payments : Principal (Total:5815)	215	227	239	253	1941	158	166	174	183	192	201	211	222	233	245	257	269	283	146	0	0	0	0	0	0
Existing Loan Payments : Interest (Total:2506)	312	299	287	272	229	141	135	126	117	108	99	88	78	67	55	43	30	17	3	0	0	0	0	0	0
Capital Works Program (Values in 2024/25 $'000)																									
Subsidised Scheme (Total:80428)	1673	1750	5025	7300	2600	1725	1725	975	1475	500	1550	500	500	500	0	0	80	800	3200	4900	1000	10000	10100	500	500
Other New System Assets (Total:26922)	72	10270	520	1270	1370	595	595	345	845	520	870	520	520	520	20	20	40	220	820	1220	20	20	20	20	20
Renewals (Total:46658)	303	1570	1595	1620	2320	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570
Total Capital Works (Total:154008)	2048	13590	7140	10190	6290	3890	3890	2890	3890	2590	3990	2590	2590	2590	1590	1590	1690	2590	5590	7690	2590	11590	11690	2090	2090
Grant For Acquisition of Assets (% of Subsidised Scheme)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.25	31.25	30.61	25.00	25.00	24.75	0.00	0.00
Grant For Acquisition of Assets ($) (Total:8000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	1000	1500	250	2500	2500	0	0
Developer Provided Assets (Total:0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant and Equipment Expenditure / Asset Disposal (Values in 2024/25 $'000)																									
Plant and Equipment Expenditure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from Disposal of Plant and Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Written Down Value of Plant and Equipment Disposed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gain/Loss on Disposal of Plant and Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from Disposal of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Written Down Value of Assets Disposed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gain/Loss on Disposal of System Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Revised/Additional Forecast Data

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
OMA / Revenue Overrides (Values in 2024/25 $'000)																									
Administration	1045	1067	1087	1109	1127	1144	1159	1173	1188	1201	1213	1225	1240	1254	1269	1282	1295	1308	1322	1336	1349	1362	1375	1389	1402
Override																									
Engineering and Supervision	365	373	380	388	394	400	405	410	415	420	424	428	433	438	443	448	453	457	462	467	471	476	481	486	491
Override	365	581	592	604	613	623	631	639	647	654	660	667	675	683	691	698	705	712	719	727	734	741	748	756	764
Operating Expenses	1423	1453	1480	1509	1534	1557	1578	1597	1617	1635	1651	1667	1687	1706	1726	1744	1762	1779	1798	1817	1834	1852	1870	1889	1907
Override	1423	1453	1481	1510	1674	1725	1768	1803	1839	1860	1878	1905	1946	1974	2004	2031	2052	2072	2094	2115	2267	2289	2312	2607	2633
Maintenance Expenses	560	572	583	595	605	614	622	629	637	644	650	656	664	672	680	687	694	701	709	716	723	730	737	745	752
Override																									
Energy Costs	379	387	394	402	409	415	421	426	431	436	440	444	449	454	459	464	469	474	479	484	489	494	499	504	509
Override																									
Chemical Costs	291	297	303	309	314	319	323	327	331	335	338	341	345	349	353	357	361	365	369	373	377	381	385	389	393
Override																									
Other Expenses	333	340	346	353	359	364	369	373	378	382	386	390	395	400	405	409	413	417	421	425	429	433	437	442	446
Override																									
Other Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Override																									
Other Grants	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Override																									
Other Contributions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Override																									
Developer Charges Overrides (Values in 2024/25 $'000)																									
Calculated from Scheme Data	1786	1675	1528	1641	1370	1302	1166	1053	1132	1019	906	906	1109	1075	1132	1007	985	951	1064	1030	962	1019	1019	1087	1019
Override	725	1563	1654	1507	1569	1293	1248	1134	1021	1078	965	852	852	1051	1026	1082	980	960	920	1039	1006	960	1012	1013	1076
Pensioner Rebate (Values in Inflated $)																									
Pensioner Rebate per Pensioner ($)	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Override																									
Pensioner Rebate Subsidy (%)	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
Override																									
Number of Pensioner Assessments	1521	1549	1574	1600	1621	1643	1663	1680	1699	1716	1730	1744	1763	1780	1798	1816	1834	1851	1870	1889	1906	1925	1943	1963	1982
Override																									
Percentage of Pensioners (%)	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70	23.70
Override																									
Pensioner Rebate	133	136	138	140	142	144	146	147	149	150	151	153	154	156	157	159	160	162	164	165	167	168	170	172	173
Pensioner Rebate Subsidy	73	75	76	77	78	79	80	81	82	83	83	84	85	86	86	87	88	89	90	91	92	92	94	95	95
Revenue Split (%)																									
Residential Rates	71.77	72.11	72.42	72.73	72.97	73.22	73.44	73.63	73.83	74.01	74.16	74.31	74.48	74.66	74.84	75.01	75.19	75.35	75.53	75.70	75.85	76.02	76.18	76.35	76.52
Override	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45	73.45
Non-Residential Rates	24.18	23.86	23.58	23.29	23.07	22.83	22.63	22.45	22.27	22.10	21.96	21.83	21.66	21.50	21.33	21.17	21.01	20.86	20.69	20.54	20.39	20.24	20.09	19.93	19.78
Override	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98	24.98
Trade Waste Charges	1.58	1.59	1.59	1.60	1.60	1.61	1.62	1.62	1.62	1.63	1.63	1.63	1.64	1.64	1.65	1.65	1.65	1.66	1.66	1.66	1.67	1.67	1.68	1.68	1.68
Override																									
Other Sales and charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Override																									
Extra Charges	2.47	2.44	2.41	2.38	2.36	2.34	2.31	2.30	2.28	2.26	2.25	2.23	2.22	2.20	2.18	2.17	2.15	2.13	2.12	2.10	2.09	2.07	2.05	2.04	2.02
Override	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-Residential Revenue (%)	25.76	25.45	25.17	24.89	24.67	24.44	24.25	24.07	23.89	23.73	23.59	23.46	23.30	23.14	22.98	22.82	22.66	22.52	22.35	22.20	22.06	21.91	21.77	21.61	21.46
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total Residential Revenue (%)	71.77	72.11	72.42	72.73	72.97	73.22	73.44	73.63	73.83	74.01	74.16	74.31	74.48	74.66	74.84	75.01	75.19	75.35	75.53	75.70	75.85	76.02	76.18	76.35	76.52

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
New Loan Payment Overrides (Values in Inflated $'000)																									
Standard Loan Payments: Principal	0	0	0	55	145	155	165	176	188	200	213	227	243	259	275	293	313	333	356	379	405	431	459	290	0
Standard Loan Payments: Interest	0	0	0	141	355	345	335	325	313	301	288	274	258	243	225	208	188	167	145	122	96	70	41	14	0
Structured Loan Payments: Principal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Structured Loan Payments: Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalised Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Loan Payments: Principal Override	0	0	0	55	145	155	165	176	188	200	213	227	243	259	275	293	313	333	356	379	405	431	459	290	0
Total New Loan Payments: Interest Override	0	0	0	141	355	345	335	325	313	301	288	274	258	243	225	208	188	167	145	122	96	70	41	14	0
Capitalised Interest Override	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix G Financial Model Output Data – Water supply

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

FINMOD
DEPARTMENT OF COMMERCE

Operating Statement

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
EXPENSES																									
Management Expenses	*1584*	*1854*	*1886*	*1921*	*1948*	*1977*	*2001*	*2022*	*2045*	*2064*	*2082*	*2099*	*2121*	*2140*	*2161*	*2179*	*2197*	*2213*	*2233*	*2251*	*2268*	*2286*	*2306*	*2325*	*2343*
Administration	1121	1141	1160	1181	1199	1216	1231	1244	1258	1270	1281	1292	1305	1317	1330	1341	1352	1362	1374	1385	1396	1407	1419	1431	1442
Engineering and Supervision	463	714	726	739	750	761	770	778	787	794	801	808	816	823	831	838	845	851	859	866	872	879	887	894	901
Operation and Maintenance Expenses	*1939*	*1974*	*2006*	*2043*	*2073*	*2101*	*2127*	*2149*	*2173*	*2195*	*2214*	*2234*	*2256*	*2276*	*2299*	*2320*	*2339*	*3098*	*3124*	*3151*	*3176*	*3203*	*3228*	*3257*	*3282*
Operation Expenses	941	958	974	991	1006	1020	1033	1043	1055	1065	1074	1083	1094	1104	1114	1124	1133	1882	1898	1913	1928	1943	1959	1976	1991
Maintenance Expenses	765	779	792	806	818	829	840	848	858	866	873	881	889	897	906	914	921	928	936	944	951	959	966	975	982
Energy Costs	165	168	171	174	177	179	181	183	185	187	189	191	193	195	197	199	201	203	205	207	209	211	213	215	217
Chemical Costs	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
Purchase of Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	*2223*	*2272*	*2272*	*2268*	*2264*	*2339*	*2335*	*2330*	*2340*	*2336*	*2332*	*2328*	*2326*	*2341*	*2389*	*2614*	*2781*	*2779*	*2790*	*2788*	*2785*	*2782*	*2787*	*2798*	*2797*
System Assets	2023	2078	2083	2085	2086	2167	2167	2168	2182	2183	2183	2184	2185	2205	2257	2485	2657	2658	2673	2674	2674	2675	2683	2697	2698
Plant & Equipment	200	194	189	183	178	173	167	163	158	153	149	144	140	136	132	128	125	121	117	114	111	108	104	101	98
Interest Expenses	1276	1200	1126	1052	958	826	723	664	544	110	0	0	0	0	0	0	596	563	530	497	466	434	403	372	342
Other Expenses	490	499	507	516	524	531	538	544	550	555	560	565	571	576	582	587	592	597	602	607	612	617	622	627	632
TOTAL EXPENSES	**7512**	**7799**	**7797**	**7800**	**7767**	**7776**	**7723**	**7710**	**7653**	**7260**	**7188**	**7226**	**7274**	**7334**	**7431**	**7700**	**8506**	**9250**	**9280**	**9294**	**9307**	**9322**	**9347**	**9379**	**9395**
REVENUES																									
Rates & Service Availability Charges	*1469*	*1526*	*1552*	*1580*	*1604*	*1627*	*1648*	*1668*	*1688*	*1705*	*1722*	*1737*	*1756*	*1775*	*1793*	*1810*	*1829*	*1847*	*1866*	*1885*	*1902*	*1921*	*1940*	*1960*	*1979*
Residential	1136	1181	1201	1222	1240	1259	1275	1290	1306	1319	1332	1344	1358	1373	1387	1400	1415	1428	1444	1458	1472	1486	1501	1516	1531
Non-Residential	333	346	352	358	363	368	374	378	382	386	390	394	398	402	406	410	414	418	422	427	431	435	439	444	448
User Charges	*5119*	*5318*	*5408*	*5505*	*5589*	*5667*	*5743*	*5811*	*5881*	*5943*	*6000*	*6054*	*6118*	*6182*	*6246*	*6306*	*6371*	*6434*	*6502*	*6567*	*6628*	*6695*	*6761*	*6828*	*6895*
Sales of Water : Residential	3775	3922	3988	4060	4122	4179	4235	4285	4337	4382	4425	4465	4512	4559	4606	4650	4699	4745	4795	4843	4888	4937	4986	5036	5085
Sales of Water : Non-Residential	1344	1396	1420	1445	1467	1488	1508	1526	1544	1560	1575	1589	1606	1623	1640	1656	1673	1689	1707	1724	1740	1758	1775	1793	1810
Extra Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest Income	1214	1148	1015	996	984	835	763	811	718	600	631	720	810	859	815	357	147	161	179	217	259	299	327	340	379
Other Revenues	143	146	148	151	153	155	157	159	161	163	164	165	167	169	171	172	173	174	175	176	177	178	179	181	182
Grants	*166*	*165*	*164*	*163*	*162*	*160*	*160*	*157*	*156*	*154*	*153*	*152*	*150*	*148*	*147*	*146*	*144*	*143*	*142*	*140*	*139*	*138*	*137*	*136*	*135*
Grants for Acquisition of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pensioner Rebate Subsidy	86	85	84	83	82	80	80	77	76	74	73	72	70	69	67	66	64	64	62	60	59	58	57	56	55
Other Grants	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Contributions	*695*	*1085*	*1016*	*1138*	*957*	*912*	*828*	*716*	*768*	*693*	*618*	*618*	*716*	*678*	*716*	*648*	*618*	*603*	*663*	*648*	*618*	*640*	*655*	*678*	*648*
Developer Charges	605	995	927	1048	867	822	739	626	678	603	528	528	626	588	626	558	528	513	573	558	528	550	565	588	558
Developer Provided Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Contributions	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
TOTAL REVENUES	**8806**	**9388**	**9303**	**9531**	**9448**	**9357**	**9299**	**9323**	**9372**	**9258**	**9289**	**9446**	**9717**	**9810**	**9889**	**9439**	**9282**	**9362**	**9528**	**9634**	**9724**	**9871**	**9999**	**10124**	**10217**
OPERATING RESULT	**1294**	**1589**	**1506**	**1731**	**1681**	**1581**	**1576**	**1613**	**1719**	**1998**	**2101**	**2220**	**2443**	**2477**	**2458**	**1739**	**776**	**112**	**248**	**340**	**417**	**549**	**652**	**744**	**822**
OPERATING RESULT (less Grants for Acq of Assets)	**1294**	**1589**	**1506**	**1731**	**1681**	**1581**	**1576**	**1613**	**1719**	**1998**	**2101**	**2220**	**2443**	**2477**	**2458**	**1739**	**776**	**112**	**248**	**340**	**417**	**549**	**652**	**744**	**822**

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Cashflow Statement

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Cashflow From Operating Activities																									
Receipts																									
Rates and Charges	6588	6845	6960	7084	7192	7294	7392	7480	7569	7648	7722	7791	7874	7957	8039	8116	8200	8280	8369	8452	8530	8616	8702	8788	8874
Interest Income	1214	1148	1015	996	984	835	763	811	718	600	631	720	810	859	815	357	147	161	179	217	259	299	327	340	379
Other Revenues	143	146	148	151	153	155	157	159	161	163	164	165	167	169	171	172	173	174	175	176	177	178	179	181	182
Grants	166	165	164	163	162	160	160	157	156	154	153	152	150	148	147	146	144	143	142	140	139	138	137	136	135
Contributions	695	1085	1016	1138	957	912	828	716	768	693	618	618	716	678	716	648	618	603	663	648	618	640	655	678	648
Total Receipts from Operations	**8806**	**9388**	**9303**	**9531**	**9448**	**9357**	**9299**	**9323**	**9372**	**9258**	**9289**	**9446**	**9717**	**9810**	**9889**	**9439**	**9282**	**9362**	**9528**	**9634**	**9724**	**9871**	**9999**	**10124**	**10217**
Payments																									
Management	1584	1854	1886	1921	1948	1977	2001	2022	2045	2064	2082	2099	2121	2140	2161	2179	2197	2213	2233	2251	2268	2286	2306	2325	2343
Operations (plus WC Inc)	2038	2078	2108	2151	2175	2203	2226	2244	2271	2291	2307	2328	2355	2374	2399	2419	2437	3196	3225	3251	3276	3305	3331	3361	3386
Interest Expenses	1276	1200	1126	1052	958	826	723	664	544	110	0	0	0	0	0	0	596	563	530	497	466	434	403	372	342
Other Expenses	490	499	507	516	524	531	538	544	550	555	560	565	571	576	582	587	592	597	602	607	612	617	622	627	632
Total Payments from Operations	**5388**	**5631**	**5627**	**5640**	**5605**	**5538**	**5487**	**5475**	**5411**	**5020**	**4949**	**4992**	**5046**	**5091**	**5142**	**5185**	**5822**	**6569**	**6590**	**6607**	**6622**	**6642**	**6662**	**6685**	**6703**
Net Cash from Operations	**3418**	**3757**	**3676**	**3891**	**3843**	**3819**	**3812**	**3848**	**3961**	**4238**	**4340**	**4454**	**4670**	**4720**	**4747**	**4254**	**3460**	**2793**	**2938**	**3027**	**3102**	**3229**	**3336**	**3438**	**3514**
Cashflow from Capital Activities																									
Receipts																									
Proceeds from Disposal of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Payments																									
Acquisition of Assets	800	6400	2719	1930	1130	7030	1001	999	2000	999	1000	1000	900	2400	5399	20900	15900	900	1900	900	900	900	1400	1900	850
Net Cash from Capital Activities	**-800**	**-6400**	**-2719**	**-1930**	**-1130**	**-7030**	**-1001**	**-999**	**-2000**	**-999**	**-1000**	**-1000**	**-900**	**-2400**	**-5399**	**-20900**	**-15900**	**-900**	**-1900**	**-900**	**-900**	**-900**	**-1400**	**-1900**	**-850**
CashFlow from Financing Activities																									
Receipts																									
New Loans Required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10000	0	0	0	0	0	0	0	0
Payments																									
Principal Loan Payments	587	608	629	651	1954	1189	589	609	5258	4451	0	0	0	0	0	0	269	278	286	294	303	312	321	331	341
Net Cash from Financing Activities	**-587**	**-608**	**-629**	**-651**	**-1954**	**-1189**	**-589**	**-609**	**-5258**	**-4451**	**0**	**0**	**0**	**0**	**0**	**0**	**9731**	**-278**	**-286**	**-294**	**-303**	**-312**	**-321**	**-331**	**-341**
TOTAL NET CASH	**2031**	**-3250**	**328**	**1310**	**759**	**-4400**	**2223**	**2240**	**-3297**	**-1212**	**3339**	**3455**	**3771**	**2319**	**-652**	**-16645**	**-2710**	**1615**	**752**	**1833**	**1899**	**2017**	**1615**	**1207**	**2323**
Current Year Cash	2031	-3250	328	1310	759	-4400	2223	2240	-3297	-1212	3339	3455	3771	2319	-653	-16645	-2709	1615	751	1833	1899	2017	1615	1207	2323
Cash & Investments @Year Start	23816	25094	21207	20908	21572	21680	16776	18446	20083	16298	14646	17462	20307	23376	24947	23587	6740	3913	5368	5941	7547	9171	10862	12113	12933
Cash & Investments @Year End	25847	21844	21535	22219	22330	17280	18999	20686	16787	15085	17985	20916	24078	25696	24295	6942	4031	5529	6119	7774	9446	11187	12477	13321	15256
Capital Works Funding:																									
nternal Funding for New Works ($'000)	70	4080	400	110	110	6110	80	80	1080	80	80	80	80	1506	3905	17080	2830	80	1080	80	80	80	580	1080	80
Internal Funding for Renewals	730	2320	2320	1820	1020	920	920	920	920	920	920	920	820	895	1495	3820	3070	820	820	820	820	820	820	820	770
New Loans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10000	0	0	0	0	0	0	0	0
Grants	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Capital Works	**800**	**6400**	**2719**	**1930**	**1130**	**7030**	**1001**	**999**	**2000**	**999**	**1000**	**1000**	**900**	**2400**	**5400**	**20900**	**15899**	**900**	**1900**	**900**	**900**	**900**	**1400**	**1900**	**850**

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Statement of Financial Position

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DEPARTMENT OF COMMERCE

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Cash and Investments	25847	21208	20299	20334	19840	14906	15911	16820	13252	11561	13383	15110	16888	17498	16062	4456	2512	3345	3594	4433	5230	6014	6512	6750	7505
Receivables	2372	2415	2455	2499	2537	2572	2604	2630	2660	2686	2708	2731	2758	2783	2810	2834	2857	2879	2903	2927	2949	2973	2998	3023	3047
Inventories	25	25	25	26	26	26	26	26	26	26	26	26	26	26	26	27	27	28	28	29	29	29	29	29	30
Property, Plant & Equipment	*114290*	*118250*	*118539*	*118052*	*116780*	*121341*	*119887*	*118444*	*117999*	*116567*	*115146*	*113735*	*112233*	*112223*	*115169*	*133398*	*146464*	*144538*	*143605*	*141680*	*139761*	*137850*	*136437*	*135517*	*133553*
System Assets (1)	108492	112815	113451	113295	112339	117203	116036	114868	114685	113502	112319	111136	109850	110045	113187	131602	144845	143087	142314	140540	138766	136991	135708	134910	133062
Plant & Equipment	5798	5435	5088	4757	4441	4139	3851	3576	3314	3064	2826	2599	2383	2178	1982	1796	1619	1451	1291	1139	996	859	730	607	491
Other Assets	425	433	440	448	455	461	467	472	478	482	486	490	494	499	504	508	512	516	520	525	529	533	538	542	547
TOTAL ASSETS	**142959**	**142330**	**141758**	**141359**	**139637**	**139307**	**138895**	**138392**	**134414**	**131322**	**131748**	**132092**	**132399**	**133029**	**134571**	**141222**	**152372**	**151306**	**150651**	**149593**	**148498**	**147399**	**146513**	**145861**	**144681**
LIABILITIES																									
Bank Overdraft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Creditors	621	632	643	654	664	673	681	688	695	702	708	714	721	727	735	741	747	752	758	765	771	777	783	790	796
Borrowings	19502	18326	17164	16013	13593	12008	11070	10138	4585	0	0	0	0	0	0	0	9731	9170	8616	8071	7533	7001	6476	5956	5441
Provisions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL LIABILITIES	**20123**	**18958**	**17807**	**16667**	**14257**	**12681**	**11751**	**10826**	**5280**	**702**	**708**	**714**	**721**	**727**	**735**	**741**	**10477**	**9922**	**9375**	**8836**	**8303**	**7778**	**7259**	**6746**	**6237**
NET ASSETS COMMITTED	**122836**	**123372**	**123951**	**124692**	**125381**	**126626**	**127144**	**127566**	**129134**	**130620**	**131040**	**131378**	**131678**	**132301**	**133837**	**140482**	**141895**	**141384**	**141276**	**140757**	**140195**	**139621**	**139254**	**139116**	**138444**
EQUITY																									
Accumulated Operating Result	71040	70560	70011	69704	69354	68916	68484	68103	67839	67861	67985	68225	68681	69157	69600	69313	68070	66200	64519	62980	61563	60318	59213	58233	57359
Asset Revaluation Reserve	51796	55051	58537	62147	65861	69654	73730	77887	82125	86484	90927	95456	100071	104769	109617	114753	120904	127877	134972	142240	149633	157152	164798	172598	180585
TOTAL EQUITY	**122836**	**124008**	**125188**	**126577**	**127871**	**129000**	**130232**	**131432**	**132669**	**134144**	**135643**	**137184**	**138868**	**140499**	**142070**	**142968**	**143414**	**143567**	**143801**	**144098**	**144411**	**144795**	**145220**	**145687**	**146195**
(1) Notes to System Assets																									
Current Replacement Cost	163218	167298	167698	167808	167918	174028	174108	174188	175268	175348	175428	175509	175588	177094	180998	198078	210908	210988	212068	212148	212227	212307	212887	213967	214047
Less: Accumulated Depreciation	54726	54483	54247	54512	55578	56825	58072	59320	60582	61845	63109	64373	65738	67049	67811	66476	66063	67901	69754	71607	73462	75317	77180	79057	80986
Written Down Current Cost	108492	112815	113451	113295	112339	117203	116036	114868	114685	113502	112319	111136	109850	110045	113187	131602	144845	143087	142314	140540	138766	136991	135708	134910	133062

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Performance Indicators

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	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Typical Residential Bills	810	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825
Average Residential Bills (2024/25$)	750	766	767	768	769	770	771	772	774	774	775	776	776	778	778	779	780	780	781	782	782	783	784	784	785
Mgmnt Cost / Assessment (2024/25$)	216	249	249	248	248	248	249	249	249	248	249	249	249	249	249	248	249	249	248	249	249	248	249	249	248
OMA Cost per Assessment (2024/25$)	480	513	513	512	513	512	513	512	513	513	513	513	513	513	513	513	513	597	597	597	597	597	597	597	597
Operating Sales Margin (%)	17.86	19.92	19.52	20.95	19.55	18.45	17.99	17.23	17.85	17.42	16.97	17.19	18.33	18.07	18.11	15.22	13.41	5.58	6.41	6.58	6.60	7.14	7.53	7.93	7.98
Economic Real Rate of Return (%)	1.19	1.39	1.36	1.51	1.42	1.30	1.28	1.24	1.31	1.29	1.28	1.32	1.45	1.44	1.43	1.04	0.84	0.36	0.42	0.44	0.45	0.50	0.53	0.57	0.59
Debt Service Ratio	0.21	0.19	0.19	0.18	0.31	0.22	0.14	0.14	0.62	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07
Debt/Equity Ratio	0.16	0.15	0.14	0.13	0.11	0.09	0.09	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04
Interest Cover	2.01	2.32	2.34	2.65	2.76	2.91	3.18	3.43	4.16	19.10	0.00	0.00	0.00	0.00	0.00	0.00	2.30	1.20	1.47	1.68	1.89	2.26	2.62	3.00	3.40
Return on capital (%)	1.80	1.96	1.86	1.97	1.89	1.73	1.66	1.65	1.68	1.61	1.59	1.68	1.85	1.86	1.83	1.23	0.90	0.45	0.52	0.56	0.59	0.67	0.72	0.77	0.80
Cash and Investments (2024/25$'000)	25847	21844	21535	22219	22330	17280	18999	20686	16787	15085	17985	20916	24078	25696	24295	6942	4031	5529	6119	7774	9446	11188	12477	13321	15256
Debt outstanding (2024/25$'000)	19502	18326	17164	16013	13593	12008	11070	10138	4585	0	0	0	0	0	0	0	9731	9170	8616	8071	7533	7001	6476	5956	5441
Net Debt (2024/25$'000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5700	3641	2497	297	0	0	0	0	0

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

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STANDARD LOAN PAYMENT SCHEDULE

Drawdown		2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
2040/41 Principal	16047																	432	459	487	516	548	581	616	654	694
Interest																		956	930	903	872	842	808	773	735	695
Total Principal	**16047**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	432	459	487	516	548	581	616	654	694
Total Interest		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	956	930	903	872	842	808	773	735	695

Nambucca VC Water Fund Financial Model Jan 2025 : IWCM Water - Preferred C

Summary Report of Assumptions and Results

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DEPARTMENT OF COMMERCE

	2024/25	2028/29	2033/34	2038/39	2043/44	2048/49	2053/54
Inflation Rates - General (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Inflation Rates - Capital Works (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Borrowing Interest Rate (%)	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Term of New Loans (years)	20	20	20	20	20	20	20
Investment Interest Rate (%)	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Growth Rate - Residential (%)	1.66	1.28	0.96	0.96	0.93	0.89	0.88
Developer Charges per Assessment - Residential (2024/25 $)	10021	7538	7538	7538	7538	7538	7538
Subsidised Scheme Capital Works ($m)	0.07	0.11	0.08	2.33	0.08	0.08	0.08
Grants on Acquisition of Assets ($m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Renewals ($m)	0.73	1.02	0.92	1.50	0.82	0.77	0.77
Renewals (%)	0.45	0.61	0.52	0.83	0.39	0.36	0.36
Cash and Investments ($m)	25.85	19.84	11.56	16.06	4.43	7.50	10.41
Borrowing Outstanding ($m)	19.50	13.59	0.00	0.00	8.07	5.44	2.93
Mgmnt Cost / Assessment	216	248	248	249	249	248	249
Debt Equity Ratio	0.16	0.09	0.00	0.00	0.03	0.02	0.01
OMA Cost Per Assessment	480	513	513	513	597	597	597
Economic Real Rate of Return (%)	1.19	1.42	1.29	1.43	0.44	0.59	0.79
Return on Capital (%)	1.80	1.89	1.61	1.83	0.56	0.80	1.09
Net Debt ($m)	0.00	0.00	0.00	0.00	0.30	0.00	0.00
Debt Service Ratio	0.21	0.31	0.49	0.00	0.08	0.07	0.05
Average Residential Bills	750	769	774	778	782	785	788
Typical Residential Bills (2024/25$)	810	825	825	825	825	825	825

Appendix H Financial Model Output Data – Sewerage

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

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DEPARTMENT OF COMMERCE

Operating Statement

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
EXPENSES																									
Management Expenses	*1410*	*1648*	*1679*	*1713*	*1740*	*1767*	*1790*	*1812*	*1835*	*1855*	*1873*	*1892*	*1915*	*1937*	*1960*	*1980*	*2000*	*2020*	*2041*	*2063*	*2083*	*2103*	*2123*	*2145*	*2166*
Administration	1045	1067	1087	1109	1127	1144	1159	1173	1188	1201	1213	1225	1240	1254	1269	1282	1295	1308	1322	1336	1349	1362	1375	1389	1402
Engineering and Supervision	365	581	592	604	613	623	631	639	647	654	660	667	675	683	691	698	705	712	719	727	734	741	748	756	764
Operation and Maintenance Expenses	*2653*	*2710*	*2761*	*2816*	*3001*	*3073*	*3135*	*3185*	*3238*	*3275*	*3306*	*3346*	*3404*	*3450*	*3496*	*3539*	*3576*	*3612*	*3651*	*3689*	*3856*	*3894*	*3933*	*4245*	*4287*
Operation Expenses	1423	1453	1481	1510	1674	1725	1768	1803	1839	1860	1878	1905	1946	1974	2004	2031	2052	2072	2094	2115	2267	2289	2312	2607	2633
Maintenance Expenses	560	572	583	595	605	614	622	629	637	644	650	656	664	672	680	687	694	701	709	716	723	730	737	745	752
Energy Costs	379	387	394	402	409	415	421	426	431	436	440	444	449	454	459	464	469	474	479	484	489	494	499	504	509
Chemical Costs	291	297	303	309	314	319	323	327	331	335	338	341	345	349	353	357	361	365	369	373	377	381	385	389	393
Depreciation	*2441*	*2619*	*2700*	*2825*	*2880*	*2910*	*2940*	*2955*	*2985*	*2994*	*3027*	*3038*	*3048*	*3060*	*3055*	*3051*	*3049*	*3060*	*3118*	*3208*	*3220*	*3371*	*3523*	*3528*	*3532*
System Assets	2216	2401	2488	2619	2681	2716	2752	2772	2807	2822	2860	2875	2890	2906	2906	2906	2908	2924	2986	3080	3096	3250	3405	3414	3421
Plant & Equipment	225	218	212	206	200	194	188	183	178	172	167	163	158	153	149	144	140	136	132	128	125	121	117	114	111
Interest Expenses	312	290	271	378	519	419	394	367	339	313	288	262	236	211	185	161	136	111	87	70	53	38	21	7	0
Other Expenses	333	340	346	353	359	364	369	373	378	382	386	390	395	400	405	409	413	417	421	425	429	433	437	442	446
TOTAL EXPENSES	**7149**	**7607**	**7756**	**8085**	**8499**	**8534**	**8628**	**8692**	**8776**	**8819**	**8880**	**8928**	**8998**	**9057**	**9101**	**9139**	**9174**	**9220**	**9318**	**9455**	**9641**	**9839**	**10037**	**10366**	**10431**
REVENUES																									
Rates & Service Availability Charges	*6688*	*6899*	*7176*	*7462*	*7729*	*8005*	*8271*	*8364*	*8471*	*8559*	*8634*	*8716*	*8811*	*8905*	*9004*	*9099*	*9192*	*9287*	*9390*	*9487*	*9582*	*9679*	*9781*	*9885*	*9985*
Residential	4991	5148	5355	5568	5767	5973	6171	6240	6320	6385	6442	6503	6573	6644	6718	6788	6857	6928	7005	7077	7148	7220	7296	7373	7448
Non-Residential	1697	1751	1821	1894	1962	2032	2100	2124	2151	2174	2193	2213	2237	2261	2287	2311	2335	2359	2385	2410	2434	2459	2485	2512	2537
Trade Waste Charges	107	112	116	122	125	131	137	137	140	142	143	144	147	148	151	153	154	157	159	160	163	164	167	169	171
Other Sales and Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extra Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest Income	1013	792	459	264	131	97	86	102	105	126	130	147	179	216	278	349	412	455	436	373	399	269	124	162	215
Other Revenues	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grants	*77*	*77*	*75*	*74*	*74*	*72*	*71*	*70*	*69*	*67*	*65*	*65*	*64*	*63*	*61*	*60*	*59*	*308*	*1057*	*1556*	*305*	*2553*	*2553*	*52*	*51*
Grants for Acquisition of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	1000	1500	250	2500	2500	0	0
Pensioner Rebate Subsidy	73	73	72	70	69	68	67	66	65	64	62	61	60	59	57	56	55	54	53	52	51	49	49	48	47
Other Grants	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Contributions	*725*	*1563*	*1654*	*1507*	*1569*	*1293*	*1248*	*1134*	*1021*	*1078*	*965*	*852*	*852*	*1051*	*1026*	*1082*	*980*	*960*	*920*	*1039*	*1006*	*960*	*1012*	*1013*	*1076*
Developer Charges	725	1563	1654	1507	1569	1293	1248	1134	1021	1078	965	852	852	1051	1026	1082	980	960	920	1039	1006	960	1012	1013	1076
Developer Provided Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Contributions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL REVENUES	**8610**	**9443**	**9481**	**9429**	**9629**	**9599**	**9813**	**9808**	**9805**	**9973**	**9938**	**9924**	**10052**	**10383**	**10521**	**10742**	**10797**	**11167**	**11962**	**12615**	**11454**	**13626**	**13637**	**11280**	**11497**
OPERATING RESULT	**1461**	**1836**	**1725**	**1343**	**1129**	**1065**	**1185**	**1116**	**1029**	**1153**	**1058**	**996**	**1054**	**1326**	**1420**	**1603**	**1623**	**1946**	**2644**	**3160**	**1813**	**3787**	**3599**	**914**	**1066**
OPERATING RESULT (less Grants for Acq of Assets)	**1461**	**1836**	**1725**	**1343**	**1129**	**1065**	**1185**	**1116**	**1029**	**1153**	**1058**	**996**	**1054**	**1326**	**1420**	**1603**	**1623**	**1696**	**1644**	**1660**	**1563**	**1287**	**1100**	**914**	**1066**

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Cashflow Statement

FINMOD
DEPARTMENT OF COMMERCE

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Cashflow From Operating Activities																									
Receipts																									
Rates and Charges	6795	7011	7292	7584	7854	8136	8408	8502	8611	8700	8777	8860	8957	9054	9156	9252	9346	9444	9549	9647	9745	9844	9948	10054	10156
Interest Income	1013	792	459	264	131	97	86	102	105	126	130	147	179	216	278	349	412	455	436	373	399	269	124	162	215
Other Revenues	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grants	77	77	75	74	74	72	71	70	69	67	65	65	64	63	61	60	59	308	1057	1556	305	2553	2553	52	51
Contributions	725	1563	1654	1507	1569	1293	1248	1134	1021	1078	965	852	852	1051	1026	1082	980	960	920	1039	1006	960	1012	1013	1076
Total Receipts from Operations	**8610**	**9443**	**9481**	**9429**	**9629**	**9599**	**9813**	**9808**	**9805**	**9973**	**9938**	**9924**	**10052**	**10383**	**10521**	**10742**	**10797**	**11167**	**11962**	**12615**	**11454**	**13626**	**13637**	**11280**	**11497**
Payments																									
Management	1410	1648	1679	1713	1740	1767	1790	1812	1835	1855	1873	1892	1915	1937	1960	1980	2000	2020	2041	2063	2083	2103	2123	2145	2166
Operations (plus WC Inc)	2676	2733	2783	2840	3024	3096	3156	3206	3260	3296	3327	3367	3427	3472	3518	3560	3598	3634	3674	3711	3878	3918	3956	4269	4311
Interest Expenses	312	290	271	378	519	419	394	367	339	313	288	262	236	211	185	161	136	111	87	70	53	38	21	7	0
Other Expenses	333	340	346	353	359	364	369	373	378	382	386	390	395	400	405	409	413	417	421	425	429	433	437	442	446
Total Payments from Operations	**4731**	**5011**	**5079**	**5284**	**5641**	**5646**	**5709**	**5758**	**5813**	**5845**	**5874**	**5911**	**5972**	**6020**	**6068**	**6110**	**6147**	**6183**	**6223**	**6269**	**6444**	**6491**	**6538**	**6863**	**6923**
Net Cash from Operations	**3879**	**4432**	**4402**	**4145**	**3988**	**3953**	**4104**	**4049**	**3992**	**4127**	**4064**	**4013**	**4080**	**4363**	**4453**	**4632**	**4650**	**4984**	**5738**	**6346**	**5011**	**7134**	**7099**	**4418**	**4574**
Cashflow from Capital Activities																									
Receipts																									
Proceeds from Disposal of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Payments																									
Acquisition of Assets	2048	13590	7140	10190	6290	3890	3890	2890	3889	2589	3990	2590	2589	2590	1590	1590	1689	2590	5590	7690	2590	11590	11690	2090	2090
Net Cash from Capital Activities	**-2048**	**-13590**	**-7140**	**-10190**	**-6290**	**-3890**	**-3890**	**-2890**	**-3889**	**-2589**	**-3990**	**-2590**	**-2589**	**-2590**	**-1590**	**-1590**	**-1689**	**-2590**	**-5590**	**-7690**	**-2590**	**-11590**	**-11690**	**-2090**	**-2090**
CashFlow from Financing Activities																									
Receipts																									
New Loans Required	0	0	0	2000	3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Payments																									
Principal Loan Payments	215	220	225	282	1853	270	277	285	293	300	308	316	326	335	344	353	363	373	295	216	224	232	240	147	0
Net Cash from Financing Activities	**-215**	**-220**	**-225**	**1719**	**1146**	**-270**	**-277**	**-285**	**-293**	**-300**	**-308**	**-316**	**-326**	**-335**	**-344**	**-353**	**-363**	**-373**	**-295**	**-216**	**-224**	**-232**	**-240**	**-147**	**0**
TOTAL NET CASH	**1616**	**-9379**	**-2964**	**-4327**	**-1156**	**-207**	**-64**	**875**	**-190**	**1238**	**-234**	**1107**	**1164**	**1437**	**2519**	**2689**	**2598**	**2021**	**-147**	**-1560**	**2196**	**-4687**	**-4831**	**2181**	**2484**
Current Year Cash	1616	-9379	-2964	-4327	-1156	-207	-64	875	-191	1237	-234	1107	1164	1437	2519	2689	2597	2021	-146	-1560	2196	-4687	-4831	2181	2484
Cash & Investments @Year Start	19937	20925	11210	8007	3573	2346	2077	1955	2747	2482	3610	3278	4257	5264	6506	8762	11118	13316	14890	14315	12383	14154	9191	4233	6227
Cash & Investments @Year End	**21553**	**11547**	**8247**	**3680**	**2417**	**2139**	**2013**	**2830**	**2556**	**3719**	**3377**	**4385**	**5422**	**6701**	**9025**	**11451**	**13715**	**15337**	**14744**	**12754**	**14579**	**9467**	**4360**	**6414**	**8712**
Capital Works Funding:																									
nternal Funding for New Works ($'000)	1745	12020	5545	6570	970	2320	2320	1320	2320	1020	2420	1020	1020	1020	20	20	120	770	3020	4620	770	7520	7620	520	520
Internal Funding for Renewals	303	1570	1595	1620	2320	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570	1570
New Loans	0	0	0	2000	3000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grants	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	1000	1500	250	2500	2500	0	0
Total Capital Works	**2048**	**13590**	**7140**	**10190**	**6290**	**3890**	**3890**	**2890**	**3890**	**2590**	**3990**	**2590**	**2589**	**2590**	**1590**	**1590**	**1690**	**2590**	**5590**	**7690**	**2591**	**11590**	**11690**	**2090**	**2090**

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Statement of Financial Position

FINMOD
DEPARTMENT OF COMMERCE

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Cash and Investments	21553	11547	8247	3680	2417	2139	2013	2830	2557	3720	3378	4387	5423	6703	9026	11453	13717	15339	14745	12756	14580	9468	4362	6416	8713
Receivables	1456	1486	1515	1545	1570	1594	1616	1635	1656	1675	1691	1708	1728	1748	1768	1787	1805	1822	1842	1861	1879	1898	1916	1936	1955
Inventories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Property, Plant & Equipment	*95053*	*105833*	*110095*	*117294*	*120547*	*121382*	*122196*	*122004*	*122791*	*122277*	*123139*	*122599*	*122056*	*121508*	*119972*	*118446*	*117028*	*116505*	*118930*	*123369*	*122701*	*130887*	*139026*	*137565*	*136103*
System Assets (1)	88527	99716	104368	111939	115549	116723	117861	117979	119060	118828	119958	119673	119372	119056	117740	116423	115205	114871	117475	122085	121579	129919	138204	136880	135549
Plant & Equipment	6526	6117	5727	5354	4999	4659	4335	4026	3731	3450	3182	2927	2683	2452	2232	2023	1823	1634	1454	1284	1122	968	823	685	554
Other Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL ASSETS	**118062**	**118866**	**119857**	**122518**	**124534**	**125115**	**125824**	**126469**	**127004**	**127672**	**128209**	**128694**	**129207**	**129959**	**130766**	**131686**	**132550**	**133666**	**135517**	**137985**	**139160**	**142253**	**145305**	**145917**	**146771**
LIABILITIES																									
Bank Overdraft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Creditors	995	1016	1035	1055	1072	1089	1103	1116	1130	1143	1155	1166	1180	1193	1207	1220	1233	1245	1258	1271	1283	1295	1308	1322	1335
Borrowings	5600	5217	4839	6417	7376	6891	6413	5942	5476	5016	4562	4113	3667	3225	2787	2353	1922	1493	1155	905	654	404	152	1	1
Provisions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL LIABILITIES	**6595**	**6232**	**5874**	**7472**	**8449**	**7980**	**7516**	**7058**	**6607**	**6160**	**5717**	**5279**	**4847**	**4418**	**3994**	**3573**	**3154**	**2738**	**2412**	**2176**	**1937**	**1699**	**1461**	**1323**	**1336**
NET ASSETS COMMITTED	**111467**	**112634**	**113982**	**115046**	**116085**	**117135**	**118308**	**119411**	**120398**	**121512**	**122492**	**123415**	**124360**	**125541**	**126772**	**128112**	**129396**	**130929**	**133105**	**135810**	**137223**	**140554**	**143844**	**144594**	**145435**
EQUITY																									
Accumulated Operating Result	66622	66517	66305	65717	64932	64106	63424	62693	61896	61247	60521	59754	59068	58673	58385	58287	58213	58464	59405	60835	60876	62890	64658	63689	62900
Asset Revaluation Reserve	44845	46117	47677	49329	51153	53029	54884	56718	58502	60266	61971	63660	65292	66867	68387	69825	71182	72465	73700	74975	76347	77664	79186	80905	82536
TOTAL EQUITY	**111467**	**112634**	**113982**	**115046**	**116085**	**117135**	**118308**	**119411**	**120398**	**121512**	**122492**	**123415**	**124360**	**125541**	**126772**	**128112**	**129396**	**130929**	**133105**	**135810**	**137223**	**140554**	**143844**	**144594**	**145435**
(1) Notes to System Assets																									
Current Replacement Cost	144616	156636	162181	170752	174722	177043	179362	180682	183001	184020	186440	187460	188480	189501	189521	189541	189660	190680	194700	200820	201840	211859	221980	222499	223020
Less: Accumulated Depreciation	56089	56920	57813	58812	59173	60320	61501	62703	63941	65193	66483	67788	69108	70444	71781	73117	74455	75809	77225	78735	80260	81940	83776	85619	87471
Written Down Current Cost	88527	99716	104368	111939	115549	116723	117861	117979	119060	118828	119958	119673	119372	119056	117740	116423	115205	114871	117475	122085	121579	129919	138204	136880	135549

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Performance Indicators

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DEPARTMENT OF COMMERCE

	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
Typical Residential Bills	828	838	856	874	892	910	928	928	928	928	928	928	928	928	928	928	928	928	928	928	928	928	928	928	928
Average Residential Bills (2024/25$)	778	787	807	825	843	862	879	881	882	882	882	884	884	885	885	886	886	887	888	888	889	889	890	890	890
Mgmnt Cost / Assessment (2024/25$)	201	230	230	231	230	230	230	230	231	230	230	230	230	230	230	230	230	231	230	230	230	230	230	230	230
OMA Cost per Assessment (2024/25$)	580	609	609	609	627	631	633	635	637	637	636	637	640	640	641	642	642	642	642	642	657	657	657	686	686
Operating Sales Margin (%)	10.00	15.42	17.03	15.91	15.97	14.60	15.34	14.22	13.03	13.61	12.40	11.36	11.25	12.99	12.95	13.62	12.97	12.93	12.30	12.63	11.27	9.72	9.06	6.83	7.54
Economic Real Rate of Return (%)	0.80	1.26	1.40	1.24	1.26	1.14	1.22	1.13	1.03	1.10	0.99	0.91	0.91	1.09	1.11	1.20	1.15	1.16	1.09	1.10	0.99	0.81	0.72	0.55	0.63
Debt Service Ratio	0.06	0.05	0.05	0.07	0.25	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.00
Debt/Equity Ratio	0.05	0.05	0.04	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Interest Cover	5.68	7.32	7.38	4.55	3.18	3.54	4.01	4.04	4.03	4.68	4.67	4.81	5.47	7.28	8.67	10.95	12.95	16.24	19.91	24.86	30.41	35.20	52.39	129.86	0.00
Return on capital (%)	1.50	1.79	1.66	1.41	1.32	1.19	1.25	1.17	1.08	1.15	1.05	0.98	1.00	1.18	1.23	1.34	1.33	1.43	1.58	1.72	1.24	1.74	1.59	0.63	0.73
Cash and Investments (2024/25$'000)	21553	11547	8247	3680	2417	2139	2013	2830	2557	3720	3378	4387	5423	6703	9026	11453	13717	15339	14745	12756	14580	9468	4362	6416	8713
Debt outstanding (2024/25$'000)	5600	5217	4839	6417	7376	6891	6413	5942	5476	5016	4562	4113	3667	3225	2787	2353	1922	1493	1155	905	654	404	152	1	1
Net Debt (2024/25$'000)	0	0	0	2737	4959	4752	4400	3112	2919	1296	1184	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

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DEPARTMENT OF COMMERCE

STANDARD LOAN PAYMENT SCHEDULE

Drawdown			2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49
2027/28	Principal	2186				55	59	63	67	72	77	82	87	93	99	106	112	120	128	136	145	155	165	176	187	0	0
	Interest					141	137	133	129	125	120	115	110	104	98	92	84	77	69	60	52	42	32	21	9	0	0
2028/29	Principal	3376					86	92	98	104	111	118	126	134	144	153	163	173	185	197	211	224	240	255	272	290	0
	Interest						218	212	206	200	193	186	178	170	160	151	141	131	119	107	93	80	64	49	32	14	0
2049/50	Principal	6281																									
	Interest																										
2050/51	Principal	6469																									
	Interest																										
2051/52	Principal	11107																									
	Interest																										
2052/53	Principal	9152																									
	Interest																										
Total Principal		**38571**	0	0	0	55	145	155	165	176	188	200	213	227	243	259	275	293	313	333	356	379	405	431	459	290	0
Total Interest			0	0	0	141	355	345	335	325	313	301	288	274	258	243	225	208	188	167	145	122	96	70	41	14	0

Nambucca VC Sewer Fund Financial Model Jan 2025 : IWCM - Preferred scenar

Summary Report of Assumptions and Results

FINMOD
DEPARTMENT OF COMMERCE

	2024/25	2028/29	2033/34	2038/39	2043/44	2048/49	2053/54
Inflation Rates - General (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Inflation Rates - Capital Works (%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Borrowing Interest Rate (%)	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Term of New Loans (years)	20	20	20	20	20	20	20
Investment Interest Rate (%)	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Growth Rate - Residential (%)	1.70	1.30	0.98	1.04	0.99	0.95	0.94
Developer Charges per Assessment - Residential (2024/25 $)	12760	11320	11320	11320	11320	11320	11320
Subsidised Scheme Capital Works ($m)	1.67	2.60	0.50	0.00	4.90	0.50	0.00
Grants on Acquisition of Assets ($m)	0.00	0.00	0.00	0.00	1.50	0.00	0.00
Renewals ($m)	0.30	2.32	1.57	1.57	1.57	1.57	1.57
Renewals (%)	0.21	1.33	0.85	0.83	0.78	0.70	0.63
Cash and Investments ($m)	21.55	2.42	3.72	9.03	12.76	8.71	5.56
Borrowing Outstanding ($m)	5.60	7.38	5.02	2.79	0.91	0.00	12.72
Mgmnt Cost / Assessment	201	230	230	230	230	230	230
Debt Equity Ratio	0.05	0.06	0.03	0.01	0.00	0.00	0.04
OMA Cost Per Assessment	580	627	637	641	642	686	719
Economic Real Rate of Return (%)	0.80	1.26	1.10	1.11	1.10	0.63	0.19
Return on Capital (%)	1.50	1.32	1.15	1.23	1.72	0.73	0.26
Net Debt ($m)	0.00	4.96	1.30	0.00	0.00	0.00	7.17
Debt Service Ratio	0.06	0.25	0.06	0.05	0.03	0.00	0.11
Average Residential Bills	778	843	882	885	888	890	893
Typical Residential Bills	828	892	928	928	928	928	928