# Integrated Water Cycle Management Strategy and Strategic Business Plan

## 2022 Review and Update

**Draft Report**

**December 2022**

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**JOB 22-005: EUROBODALLA IWCM REVIEW**
**IWCM STRATEGY AND STRATEGIC BUSINESS PLAN – 2022 REVIEW AND UPDATE**

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# DOCUMENT STRUCTURE

Eurobodalla Shire Council has reviewed and updated its Integrated Water Cycle Management (IWCM) Strategy and Strategic Business Plan (SBP). Part A of this document provides the information required for the IWCM Strategy development as listed in the *Integrated Water Cycle Management Strategy Check List – February 2019* (Department of Industry, 2019) as relevant to a review of an adopted IWCM Strategy. Part B and Part C provide the additional information required for the SBP and financial plan development as listed in the *Water Supply and Sewerage Strategic Business Planning and Financial Planning Check List – July 2014* (NSW Office of Water, 2014b).

# EXECUTIVE SUMMARY

Eurobodalla Shire Council (ESC) adopted its first Integrated Water Cycle Management (IWCM) Strategy in 2003 and reviewed and updated the IWCM Strategy in 2016. Key components of the IWCM Strategy have been implemented including pricing and demand management, water supply improvements, water filtration plants, sewerage system and STP augmentation and the development of village sewerage schemes. Council continues to undertake strategic planning of its urban water services including review of key data such as population growth, water supply availability and servicing requirements.

This current IWCM Strategy has been developed from a review of Council's adopted strategic direction and considers the available information in developing ESC's future urban water strategy. In general, this IWCM Strategy confirms the appropriateness of Council's current strategic direction.

The key issues addressed by this current IWCM Strategy (i.e. this document) are drought security, sewerage system and treatment capacity and the adequacy of village water supply and sewerage services. Key projects planned for the next few years are:

- Provision of a reticulated water supply and sewerage system in Nelligen.
- Provision of a reticulated sewerage system in Akolele.
- Construction of a new 3,120 ML southern water storage.
- Construction of a new southern water treatment plant (WTP).
- Sewage treatment plant (STP) upgrades – Batemans Bay, Tomakin, Moruya and Kianga.
- Malua Bay sewer diversion (from Batemans Bay STP to Tomakin STP).

The key management issue faced by ESC continues to be water supply security. Based on secure yield analysis, the existing supply with the new southern storage is expected to be sufficient to meet demand only until 2031. To address the longer term, the water supply augmentation strategy with the new southern storage, new southern WTP, raising the Deep Creek Dam spillway and transfer systems will provide water supply security until approximately 2070. This strategy (shown on Figure 1 and Figure 2) will provide the required drought security with staged implementation of the strategy components. The current potable water demand management measures have been successful and the current expenditure on water conservation measures is considered to be appropriate. The forecast dry year demand and the secure yield of the water supply augmentation strategy are shown on Figure 3.

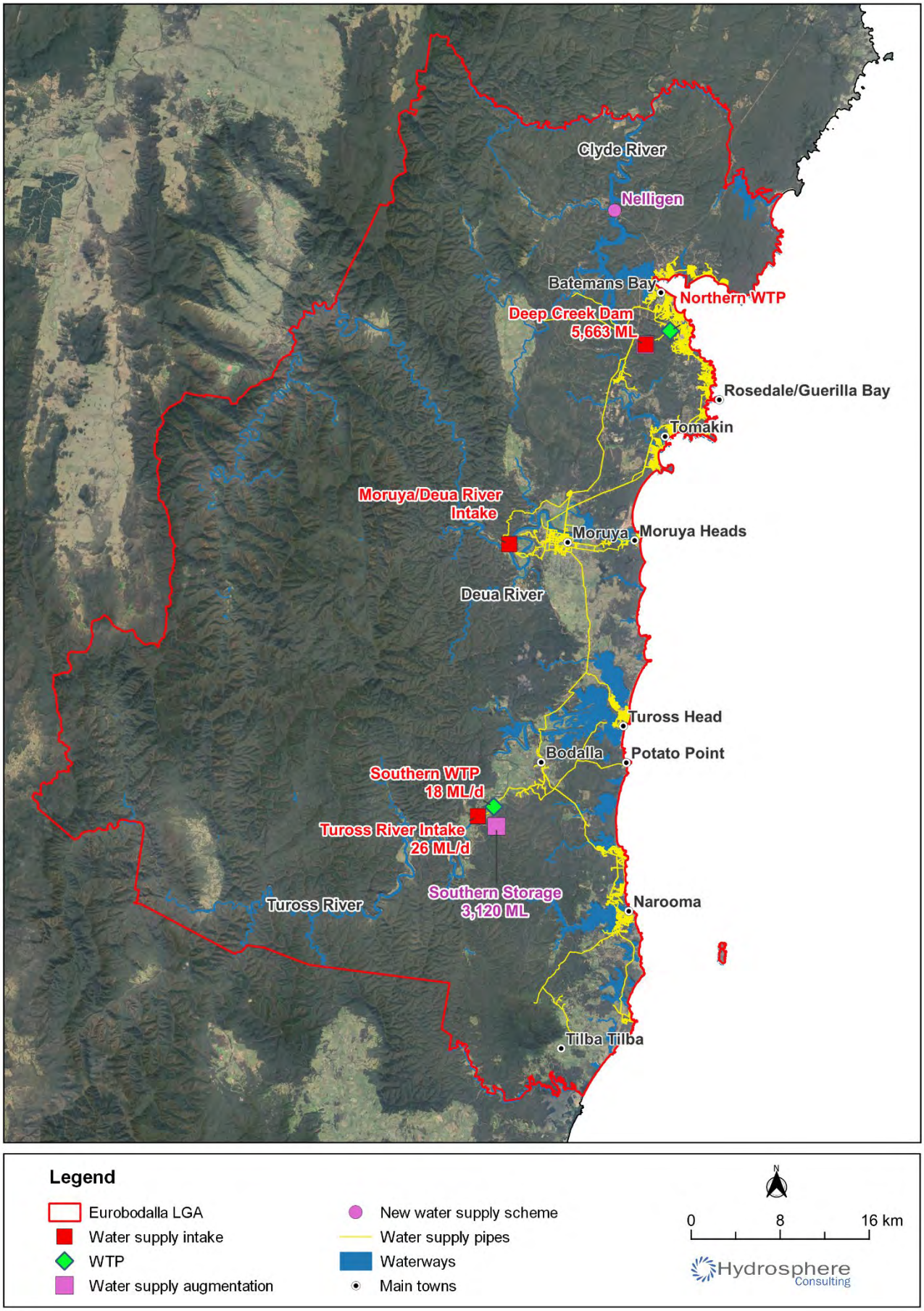


**Figure 1: Water supply augmentation strategy**

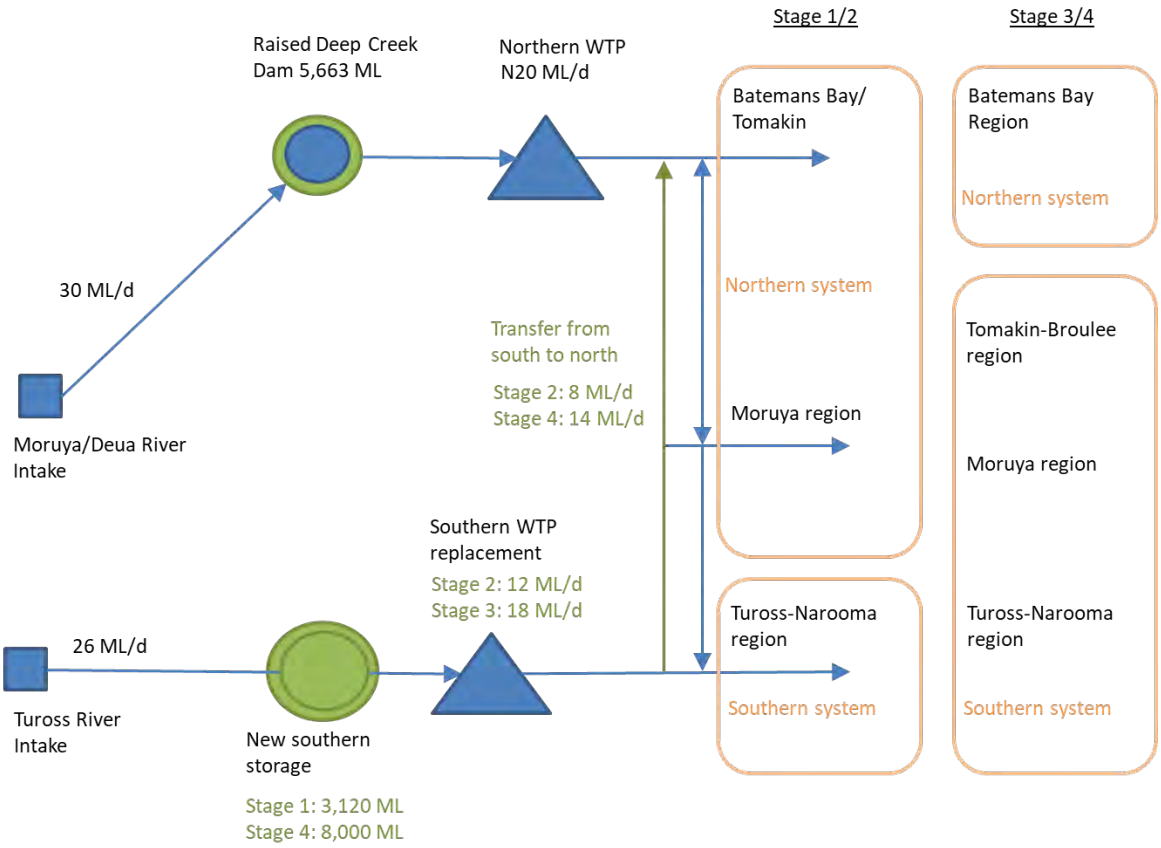


**Figure 2: Water supply augmentation strategy schematic**

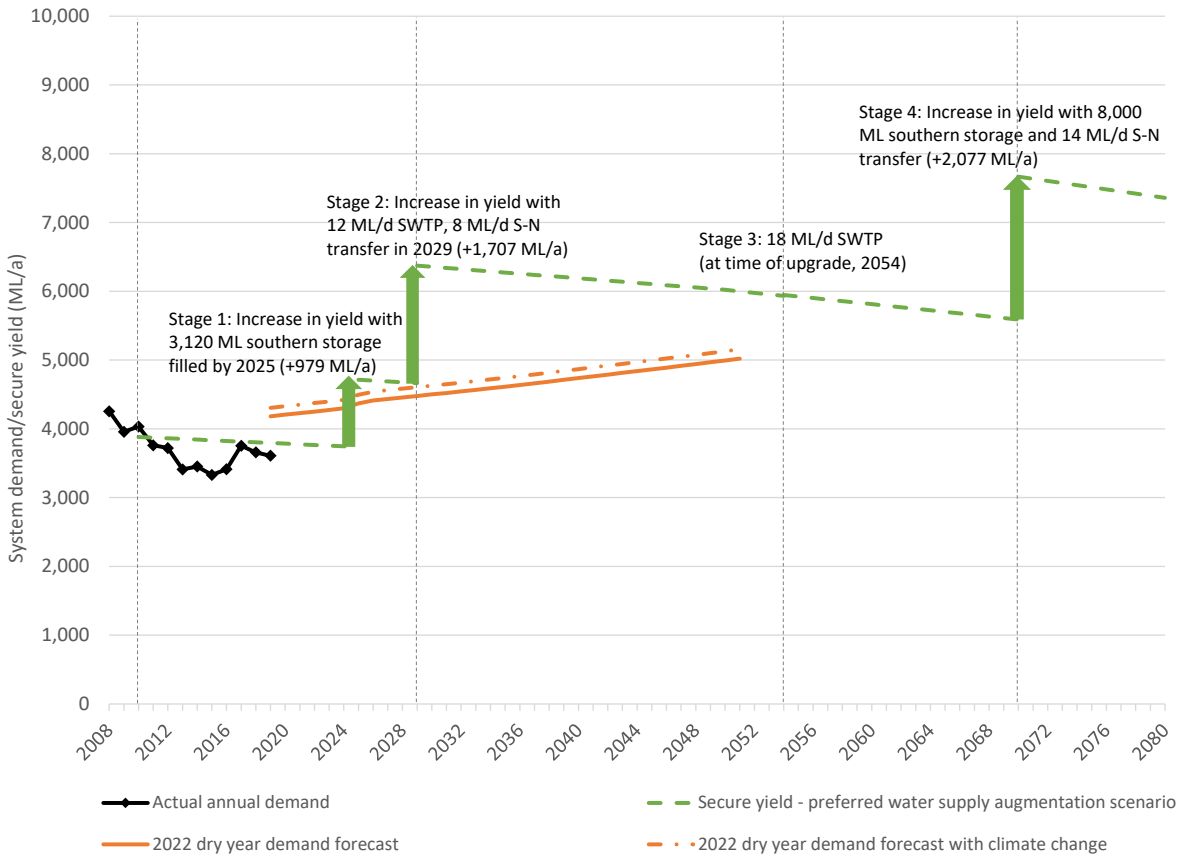


**Figure 3: Forecast dry year demand and secure yield of water supply augmentation strategy**

Sewer network modelling has been undertaken to evaluate system flows, predicted overflow locations and frequency to identify catchments/locations that would benefit from sewer relining to reduce inflow and infiltration. Individual assets will be replaced/refurbished on a priority basis as part of the asset renewal program based on the results of CCTV inspections and the network modelling.

Four out of the six STPs experience clear variation between off-peak and peak loads and the treatment capacity is insufficient to treat the peak loads. This is due to the high proportion of holiday visitors but is exacerbated by high inflow and infiltration in some sewer catchments. Transfer of the southern catchments from Batemans Bay STP to Tomakin STP will address capacity issues at Batemans Bay, optimise the use of existing assets, utilise a better performing ocean outfall at Tomakin and facilitate more future reuse options at Tomakin than at Batemans Bay. STP upgrades and inflow and infiltration reduction measures will be progressively implemented in parallel with scheduled asset upgrades. The existing effluent management practices are considered to be appropriate. Recycled water schemes at Moruya and Tuross will be expanded to maximise capacity and efficiency.

The risks to the environment and public health, community opinions, technical considerations and the availability of funding have been considered in the prioritisation of village water supply and sewerage schemes. While non-build options such as on-site sewerage management (OSSM) system inspections, water sensitive urban design and water conservation measures can reduce the risks of OSSM systems and should be Council's focus until improved management systems are provided, it is considered that a significant residual risk from the village OSSM systems remains. The IWCM Strategy includes the provision of improved water supply and sewerage services to Akolele by 2023 and Nelligen by 2024 with approved grant funding. The provision of sewerage and water supply schemes to the remaining unserviced villages (South Durras, Mystery Bay, Central Tilba, Tilba Tilba and Congo) is not currently eligible for state or federal government subsidy. Based on the results of water quality investigations and considering site constraints, community feedback and the high cost of constructing a reticulated sewerage scheme, Council is not proposing to construct a reticulated sewerage system or water supply for these villages in the short-medium term. Council will continue to monitor the health of the waterways and the performance and costs of managing OSSM systems for residents in all unsewered areas to reassess the need for upgraded sewerage systems. Council will continue to pursue funding for the South Durras water supply and sewerage scheme from the NSW Government given the identified water quality contamination, potential health risks and the high sensitivity of the coastal lakes and lagoons in the area. If there is any deterioration in water quality or increased community desire for centralised water supply and sewerage systems, feasibility studies will be undertaken to inform the decision-making process.

The sewerage augmentation strategy is shown on Figure 4.

The capital works described above will be supported by ongoing strategic planning including review of demographic and water cycle projections, water supply and sewerage system modelling, drinking water management, recycled water management and review of best-practice planning documents.

This review of Council's IWCM Strategy has confirmed that the existing strategic direction is appropriate and should continue to be implemented as the preferred IWCM scenario. Updated capital works programs and operating budgets to continue this implementation are provided as part of this review. The adopted levels of service (for drought security, drinking water quality, water supply, sewer overflows, STP licence compliance and availability of service) will all be met by the preferred IWCM scenario.

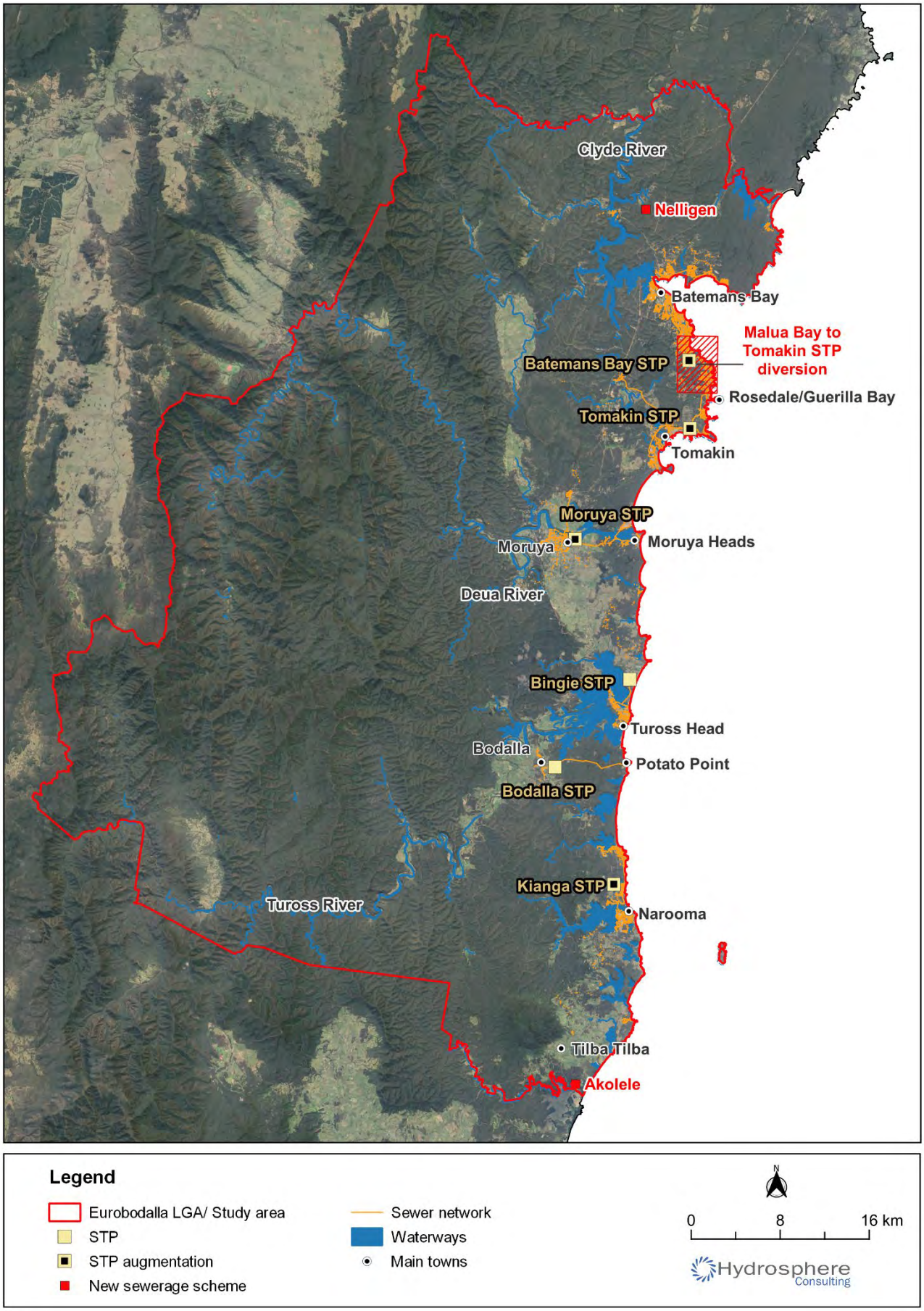


**Figure 4: Sewerage augmentation strategy**

The capital works program documents the anticipated future capital works requirements and provides a basis for financial planning and capital budgeting. The estimated capital investment over the next 30 years for water supply is $301 million with $77.8 million funded through external grants. About 53% of this amount is for improving levels of service, particularly drought security and the Nelligen water supply scheme. Approximately 47% of the expenditure is for renewal of existing assets. The estimated capital investment over the next 30 years for sewerage services is $317 million with $3.1 million funded through external grants. About 52% of this amount is for renewal of existing assets, with 48% for improving levels of service, particularly village sewerage schemes (Akolele and Nelligen).

It is recommended that Council continues to implement the ongoing and short-term components of the preferred IWCM Strategy including:

- Asset renewals.
- STP upgrades.
- Nelligen water supply and sewerage schemes.
- Akolele sewerage scheme.
- Malua Bay diversion (from Batemans Bay STP to Tomakin STP).
- The new southern dam.
- New southern WTP.
- Ongoing community consultation and water quality monitoring to review the need for the remaining village water supply and sewerage schemes.

The implementation of the IWCM Strategy should be supported by:

- Human resources as identified in the Strategic Business Plan (Part B).
- Ongoing strategic planning and review of data and assumptions.
- Funding:
    - The recommended water supply and sewerage price paths as identified in the financial plans (Part C).
    - Income from developer charges.
    - Loans for major capital projects.
    - External funding as it becomes available, particularly for larger projects with environmental or public health drivers such as village water supply and sewerage schemes.

Thirty-year financial plans have been developed for the water supply and sewerage businesses. The financial plans indicate the typical residential bill for sewerage will need to increase in the medium term to fund the identified expenditure requirements. The recommended medium-term price paths (in 2024$, not including payment of dividends) are provided on Figure 5 and Figure 6.

The IWCM Strategy and SBP will be reviewed concurrently every five years following the release of new Census data and the update of demand forecasts and system modelling.

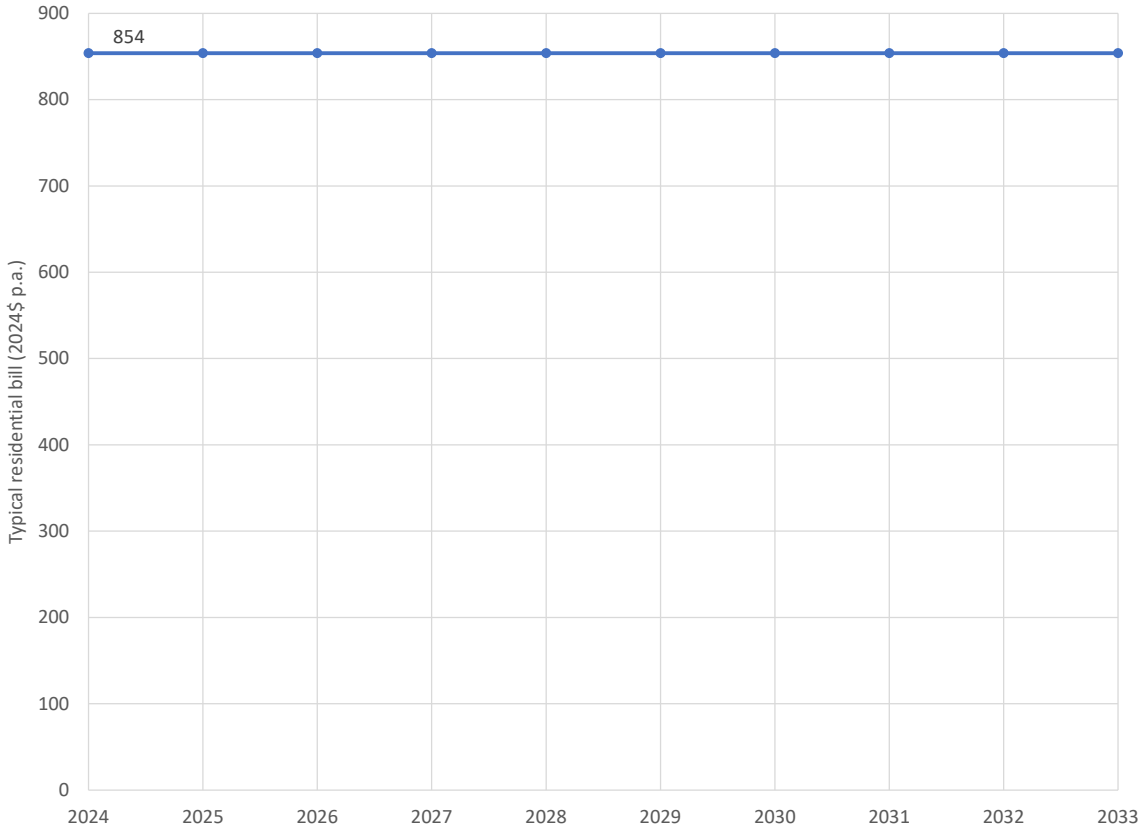


**Figure 5: Recommended water supply price path**

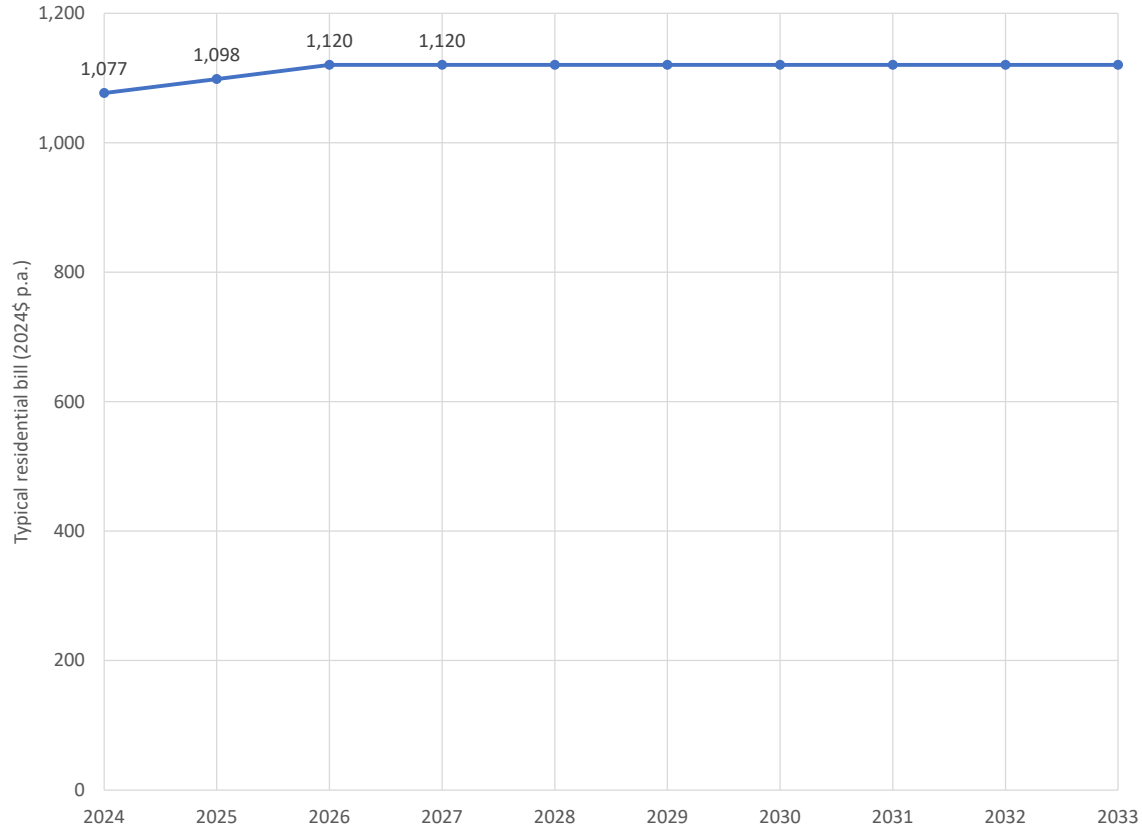


**Figure 6: Recommended sewerage price path**

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# PART A: IWCM STRATEGY

## 1. BACKGROUND

Eurobodalla Shire Council (ESC) owns and operates the town water and sewerage systems and infrastructure in compliance with regulatory requirements, relevant land use planning considerations and general council regulations. The Eurobodalla Integrated Water Cycle Management Strategy (IWCM Strategy) ensures that all water security, water quality and sewage management needs and risks relating to ESC's town water supply and sewerage systems are addressed for future planning. The IWCM Strategy sets levels of service and associated investment priorities.

The Eurobodalla IWCM Strategy was originally adopted in 2003. In 2016 the IWCM strategy was reviewed and updated with new data on population growth, demand forecasts, water supply availability and servicing requirements as well as updated water supply and sewerage operational data. ESC has been progressively implementing water supply and sewerage improvements in accordance with its *Integrated Water Cycle Management Strategy and Strategic Business Plan* (IWCM Strategy and SBP, Hydrosphere Consulting, 2016a) adopted by Council at its ordinary meeting on 13 December 2016.

The 2016 IWCM Strategy was prepared in accordance with the *Best-Practice Management of Water Supply and Sewerage Guidelines* (DWE, 2007) and the *Integrated Water Cycle Management Strategy Check List – July 2014* (NSW Office of Water, 2014a). The *Integrated Water Cycle Management Strategy - IWCM Issues Paper* (IWCM Issues Paper, Hydrosphere Consulting, 2016b) provided background information and presented the issues to be addressed. The 2016 IWCM Strategy included the following components to address the identified issues:

- Waterwise education.
- Continued demand management.
- Provision of reticulated water supply and sewerage in Nelligen and South Durras.
- Design, approvals and construction of a new southern storage.
- Sewage treatment plant (STP) upgrades.
- Provision of reticulated sewerage in Rosedale and Guerrilla Bay.
- Provision of reticulated sewerage in Bodalla.
- Malua Bay sewer diversion (from Batemans Bay STP to Tomakin STP).
- Water supply and sewerage asset renewals.
- Planning for other village water supply and sewerage schemes.

The 2016 SBP addresses the *Water Supply and Sewerage Strategic Business Planning and Financial Planning Check List – July 2014* (NSW Office of Water, 2014b). The 2016 SBP addressed the management and operation of the ESC water supply and sewerage businesses. The SBP documented Council's asset management objectives and strategies as well as the resources required to meet the adopted levels of service.

The IWCM Strategy and SBP are reviewed concurrently every five years following the release of new Census data. This report provides the 2022 review and update of the IWCM Strategy and SBP considering the implementation progress of the adopted strategies and actions, any new information available including the updated population, demographic and water supply and sewerage demand projections and presents the revised strategy. The financial plan has also been updated to demonstrate affordability of the revised strategy. The requirements of the *Integrated Water Cycle Management Strategy Check List – February 2019* (Department of Industry, 2019) have been considered in the review of the 2022 IWCM Strategy.

# 2. EXISTING WATER SUPPLY AND SEWERAGE SYSTEMS

## 2.1 Water Supply System

ESC operates one water supply system consisting of two sub-systems, the northern system and the southern system as shown on Figure 7 and Figure 8. The water supply system services urban areas between Maloney's Beach in the north and Mystery Bay and Tilba Tilba in the south including the main population centres of Batemans Bay, Moruya and Narooma. The majority of towns and villages are supplied with water through the regional water supply scheme while rural areas of the Shire (including the villages of Nelligen, South Durras and Congo) rely on local water supplies such as rainwater tanks and private groundwater bores. Akolele in the south of the Shire is serviced by Bega Valley Shire Council. The water supply system is depicted on Figure 7 and Figure 8.

The northern system draws water from the Deua/Moruya River which feeds into an off-river storage (Deep Creek Dam, capacity 4,900 ML) at a rate of up to 30 ML/d. The Buckenboura River intake was recently decommissioned due to limited water availability and operational issues. The northern system includes a water treatment plant (WTP) at Denham's Beach. The southern system draws water from the Tuross River/Tuross alluvial aquifer (bores) at a rate of up to 4 ML/d which feeds directly to the southern WTP (SWTP, i.e. no raw water storage) on the Tuross River west of Bodalla. The sub-systems can operate independently, or the entire scheme can be supplied from the northern system. This north-to-south operation provides operational flexibility during droughts when insufficient water is available from the Tuross supply or the groundwater quality is poor, during floods when the bore integrity has been compromised and during periods of low demand. The whole of the Shire is fed by the northern system throughout the year apart from the peak season when areas south of the dotted line on Figure 8 are fed by the southern system.

The northern WTP (NWTP) was commissioned in mid-2011 with a capacity of 20 ML/d. Raw water is pumped from Deep Creek Dam to the WTP where it is dosed with lime and carbon dioxide, poly-aluminium chloride and fluoride. Powdered activated carbon (PAC) is dosed for algal toxin removal when considered necessary. Dosed water flows into a flocculation tank to allow coagulation before it flows to a dissolved air flotation filtration (DAFF) unit. Filtered water gravitates to the clear water tank and through an ultraviolet (UV) disinfection unit to the Denhams Beach reservoir. Water is also chlorinated at the outlet to the clear water pump station to maintain residual chlorine in the distribution system. DAFF filters are backwashed automatically after a set time with water from the clear water tank via a backwash pump. Backwash wastewater from the filters is discharged to the wastewater tank via a wastewater collection pit. Wastewater from the wastewater tank is pumped to sludge thickeners. The supernatant is disinfected by a UV unit prior to being pumped back to the head of the plant chamber. Sludge is transferred to the sludge drying bed for

dewatering. Drainage from the sludge drying bed is pumped back to the wastewater tank. Supernatant can be PAC dosed if required (Hydrosphere Consulting, 2016b).

The SWTP was commissioned in 2012 and is located near the Tuross River pumping station. The WTP was originally designed with a capacity of 6 ML/d but is operated at 4 ML/d to improve water quality performance. Raw water is pumped from the bores located along the river into a balance tank via a spray type aerator. Sodium hydroxide is dosed into the inlet tank for pH correction. Aerated water is then dosed with sodium hypochlorite and PAC coagulant. Dosed water flows to eight pressure sand filters via two hydrocyclone mixers into the clearwater tank. The pressure filters are backwashed automatically with differential pressures, with the water from the other filters. Filter backwash wastewater gravitates to the sludge lagoon. After a set time, the top lagoon decants into the bottom lagoon before being pumped back to the WTP header tank. Filtered water is disinfected with sodium hypochlorite and UV and fluoridated then supplied to the reticulation system (Hydrosphere Consulting, 2016b).

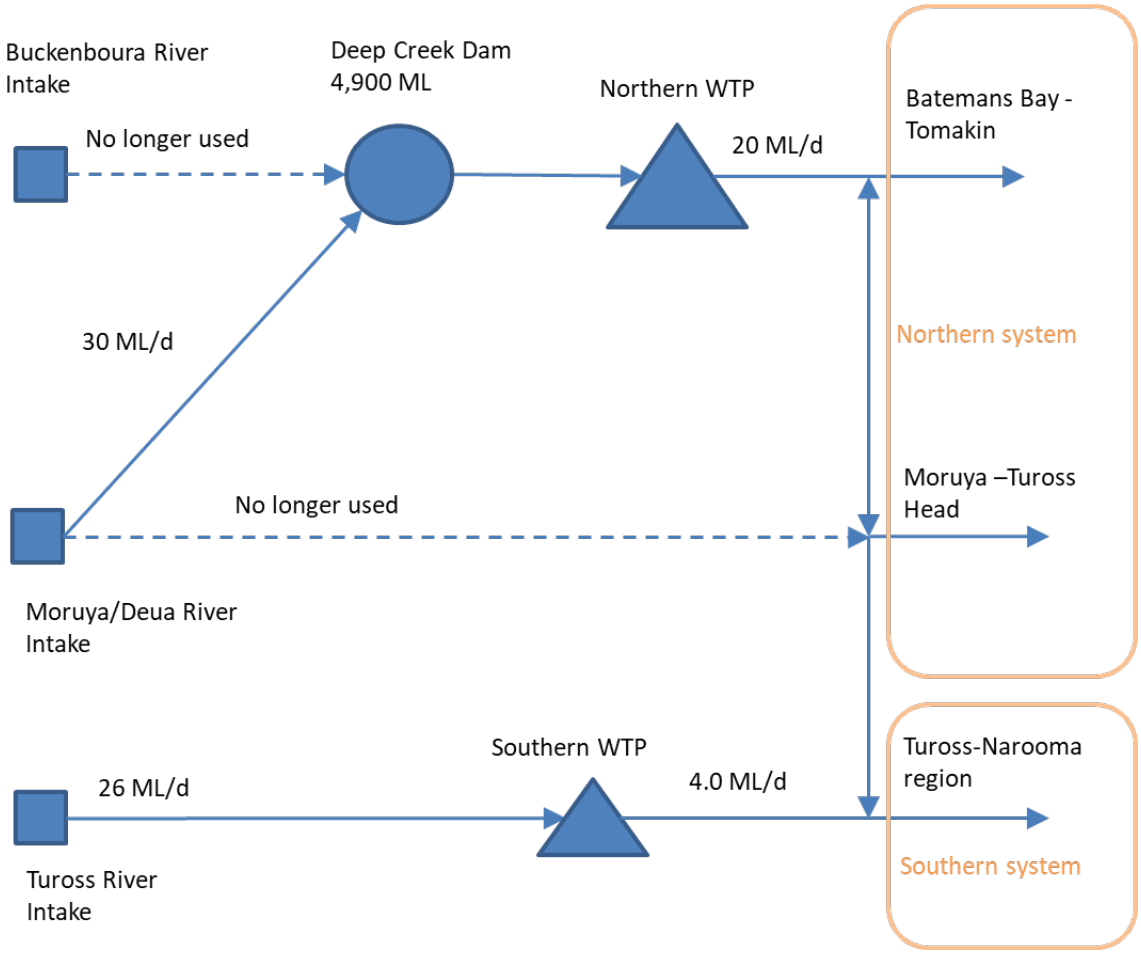


**Figure 7: Water supply system schematic – existing system**


**Figure 8: Eurobodalla water supply system - existing**

## 2.2 Sewerage Systems

ESC operates six sewerage schemes servicing the areas of Batemans Bay, Tomakin (including Rosedale/Guerilla Bay), Moruya, Tuross, Bodalla (including Potato Point) and Narooma. The collection and transfer systems and STP locations are shown on Figure 9 and described in the following sections. The majority of towns and villages are connected to a sewerage network while rural areas of the Shire rely on OSSM systems. Villages which are not connected to sewerage include South Durras, Nelligen, Akolele, Mystery Bay, Congo, Central Tilba and Tilba Tilba.

### 2.2.1 Batemans Bay sewerage scheme

The Batemans Bay sewerage scheme provides sewage collection, transport and treatment facilities for the localities of Maloneys Beach, Long Beach, Surfside, North Batemans Bay, Batemans Bay, Catalina, Batehaven, Sunshine Bay, Denhams Beach, Surf Beach, Lilli Pilli and Malua Bay. The scheme includes collection and transfer systems which comprise 235 km of gravity mains, 83 km pressure pipe, 57 sewage pumping stations (SPSs), associated rising mains and a small pressure sewer system catchment. Sewage is transferred to the Batemans Bay STP. The sewer network servicing this area is extensive and is grouped into three catchments (Figure 10):

- The northern catchment serving the area north of Clyde River with 20 SPSs.
- The central catchment covering the central commercial areas with 25 SPSs.
- The southern catchment servicing the Lilli Pilli and Malua Bay areas (south of the STP) with 12 SPSs.

Three major pumping stations (BB01, BB54 and BB40) discharge flow directly to the Batemans Bay STP.

Standby generators (mobile) and detention storage are available for all SPSs.

The Batemans Bay STP was originally constructed in the late 1970s to cater for a design load of 15,000 equivalent persons (EP). The original STP was based on an extended aeration activated sludge process with tertiary filtration and was upgraded in 2012 to include tertiary filtration, UV disinfection, effluent reuse, aerobic digestion of sludge and mechanical dewatering. The 2012 upgrade aimed to increase the plant's capacity to 25,800 EP however the capacity of the secondary clarifiers, the aeration system and the tertiary filtration system is lower than this capacity (PWA, 2018c).

Waste activated sludge from the secondary treatment process is transferred into two aerobic digesters where the sludge is stabilised and thickened. The digesters are aerated by a diffused aeration system. The stabilised and thickened sludge is thickened via a mobile centrifuge and stockpiled for transport to the Bega Valley for beneficial reuse on agricultural land.

UV disinfected effluent is transferred to a reuse effluent storage tank. Excess effluent discharges into the ocean via an outfall. UV disinfected effluent utilised for reuse is further disinfected by chlorination (dosing with liquid chlorine). Tertiary treated effluent is reused on-site (equipment wash down and irrigation) and off-site at the Catalina Country Club golf course and Hanging Rock sports fields.


**Figure 9: Eurobodalla sewerage systems - existing**

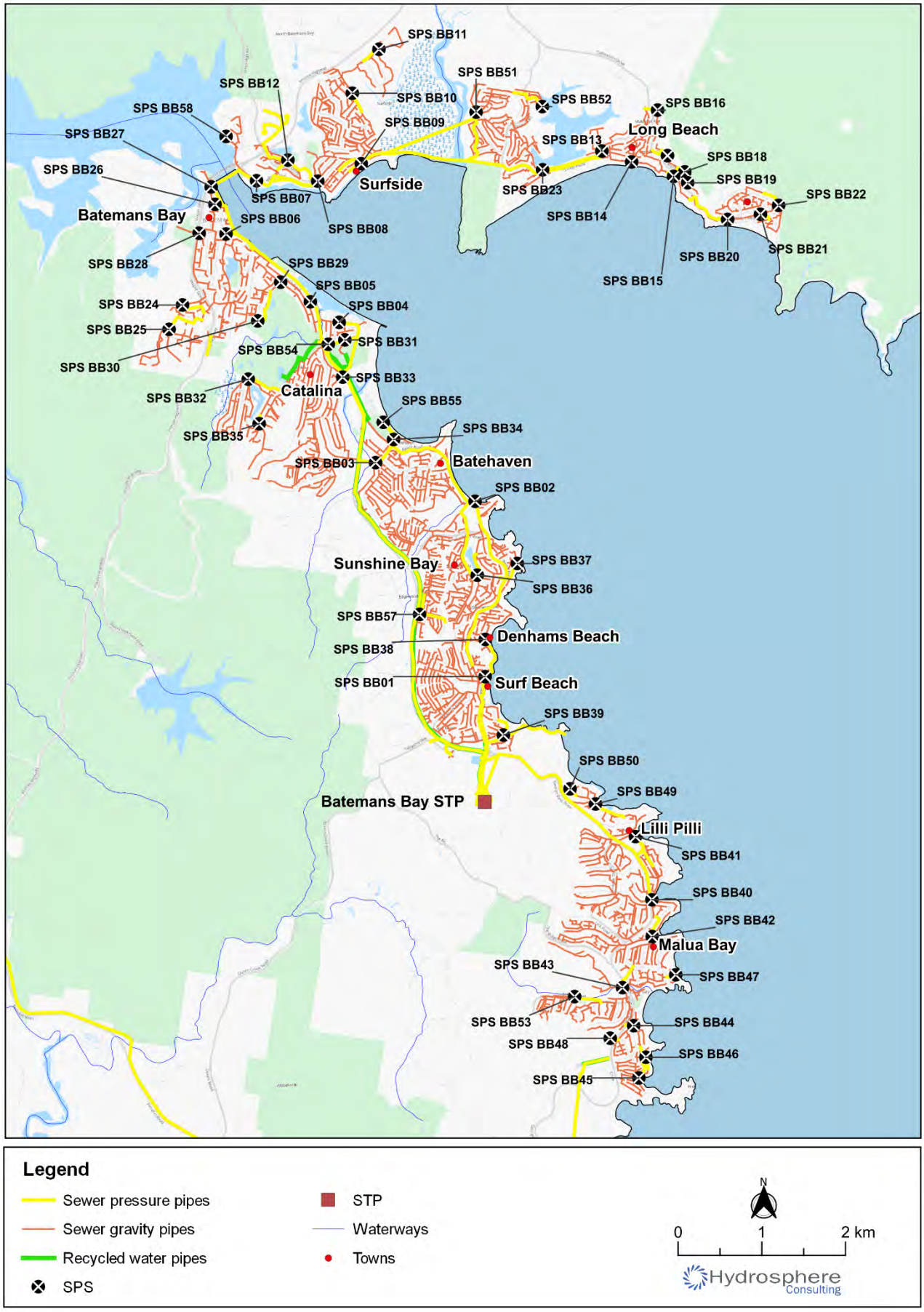


**Figure 10: Batemans Bay sewerage system**

### 2.2.2 Tomakin sewerage scheme

The Tomakin sewerage scheme provides sewage collection, transport and treatment facilities for Tomakin, Mossy Point, Broulee and Mogo comprising mixed urban and commercial development. A pressure sewerage scheme was constructed for Rosedale and Guerilla Bay in 2017 with treatment at the Tomakin STP. The scheme comprises 43 km of gravity mains, 34 km of pressure pipe, 26 SPSs and associated rising mains (Figure 11). Standby generators (mobile) and detention storage are available for all SPSs.

Sewage is transferred to the Tomakin STP for treatment. The STP is a continuous extended aeration plant originally commissioned in 1985 with a nominal design capacity of 10,000 EP. Final treated effluent from the Tomakin STP is discharged to the ocean through a near shore ocean outfall. The outfall main from the STP consists of approximately 1,200 m of 525 mm diameter pipeline from the effluent ponds to the ocean discharge at Long Nose Point.

A reclaimed water pumping station supplies reclaimed water via a pressure pump. Disinfection is provided by an in-line UV disinfection unit. Reclaimed water is used on-site for operation and maintenance including wash down of equipment. Reclaimed water is also supplied from this system to a storage tank which is used for filling water tanker trucks by a booster pump for dust suppression and roadwork operations.


**Figure 11: Tomakin sewerage system**

### 2.2.3 Moruya sewerage scheme

The Moruya sewerage scheme provides sewage collection, transport and treatment facilities for several localities comprising mixed urban and commercial development including Moruya, North Moruya and South Head. The source of the wastewater is mainly residential properties and a small number of commercial and industrial customers. The sewerage scheme supports the highest ratio of permanent to holiday residents in Eurobodalla Shire. The scheme includes collection and transfer systems which comprise 65 km of gravity mains, 23 km of pressure pipe, 20 SPSs and associated rising mains. Standby generators (mobile) and detention storage are available for all SPSs. The SPSs include some lift pumping stations. Three major pumping stations (MO01, MO05 and MO10) discharge flow directly to the Moruya STP.

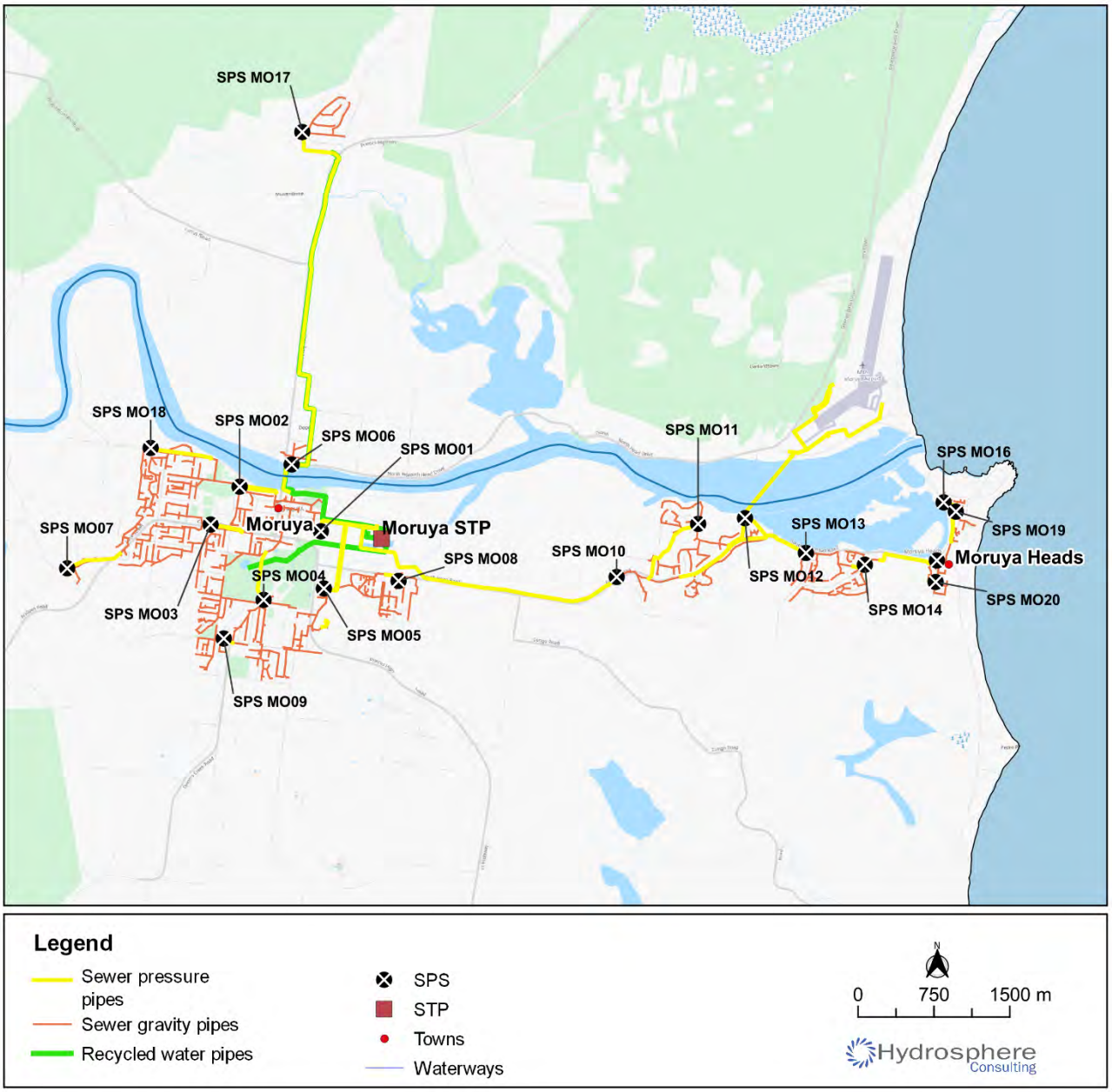


**Figure 12: Moruya sewerage system**

The Moruya STP has a capacity of 8,000 EP with an extended aeration process and tertiary treatment. Dewatered sludge from drying beds is stockpiled for transport to Bega Valley for beneficial reuse on agricultural land.

Tertiary treated effluent from the STP is either discharged to Ryan's Creek, a tributary of the Moruya River or recycled at a number of locations (GMWater, 2020):

- Moruya golf course – effluent reuse on the Moruya Golf Course commenced in the early 1990s. Effluent is held in an aerated storage dam on the course for irrigation.
- High school – spare capacity in the golf course pumping system is used to supply effluent to the Moruya High School for irrigation.
- The Ack Weyman Oval is supplied with recycled water stored at the golf course when there is spare capacity for irrigation.
- Riverside Park and amphitheatre located on the southern side of Moruya River used for markets and concerts for irrigation.
- Dust suppression - water is collected by tankers and used during construction.
- On-site use at the Moruya STP.

A pipeline to supply recycled water to the North Moruya industrial estate is currently not in use.

### 2.2.4 Tuross sewerage scheme

The Tuross sewerage scheme provides sewage collection, transport and treatment facilities for Tuross Head as well as overflows from the Turlinjah effluent reuse scheme (Figure 13). The area serviced by the schemes comprises mixed urban and commercial development. The Tuross Head scheme includes collection and transfer systems which comprise 42 km of gravity mains, 12 km of pressure mains, 10 SPSs and associated rising mains.

The Turlinjah scheme is based on common effluent drainage. The scheme includes collection and transfer systems which comprise 880 m of gravity mains, 3 SPSs and associated rising mains (Figure 13). Septic effluent is transferred to a reed bed treatment system with the final effluent available for reuse by four farmers. Surplus effluent is discharged to the Tuross Head scheme via a 4.9 km long pressure gravity main. Standby generators (mobile or fixed) and detention storage are available for all SPSs.

Wastewater collected within the Tuross Head sewerage scheme is pumped to the Bingie STP via sewage pumping station TU01. The existing plant is based on the Intermittent Decant Extended Aeration (IDEA), Pasveer channel secondary treatment process. Secondary treated effluent is either discharged to exfiltration beds or filtered and pumped to an effluent reuse storage pond.

The Bingie STP was commissioned in 1984 with design capacity of 4,000 EP (NSW Public Works, 2015a) and upgraded in 2022 to 5,800 EP. The Turlinjah treatment plant consists of a holding tank which receives flows from SPS TJ01, two reed beds in series, a UV disinfection unit and a holding tank from which the effluent is pumped to distribution tank No. 1 located north of the reed bed plant. Reclaimed water is drawn from distribution tank No. 1 for supply to the reuse scheme. Overflows from distribution tank No. 1 are directed to distribution tank No. 2 from which they are transferred to the Tuross sewerage scheme via a pressure gravity main. Dewatered sludge from drying beds is stockpiled for transport to the Bega Valley for beneficial reuse on agricultural land.

Effluent is currently pumped from the balance pond, UV disinfected and then pumped to a storage pond from which it is drawn for on-site reuse activities within the STP such as process washdown. Effluent is pumped

from the storage pond to the Tuross Golf Course for irrigation. Excess effluent is discharged via exfiltration beds.


**Figure 13: Tuross Head sewerage system**

### 2.2.5 Bodalla sewerage scheme

The Bodalla sewerage scheme collects and treats sewage from Bodalla and Potato Point. The transfer system consists of a low-pressure sewerage system with on-site macerator pumps that grind the sewage into a fine slurry and pump the slurry into the pressure sewer network and to the Bodalla STP (Figure 14). The scheme became operational in October 2018. Treated effluent is discharged to an effluent storage pond before being used for irrigation on the neighbouring farm. When the irrigation area is saturated and the effluent storage pond is full, effluent is discharged to Borang Creek, approximately 1.2 km upstream of Borang Lake. The intent is to discharge to local waters (Borang Creek) only when the irrigation demand is less than the treated effluent supply over a sustained wet weather period.

The original concept was to deliver the STP in two stages. Stage 1 was sized for 650 EP and was to service the current Bodalla population and Stage 2 was to service the current needs of Bodalla and Potato Point in addition to anticipated growth. ESC constructed both STP stages at the same time (1,300 EP). The plant

includes primary treatment at the inlet works, two IDEA tanks which include a preselector anoxic zone, chlorination and UV disinfection. The IDEA biological process includes nitrification / denitrification and chemical phosphorus removal (ASpect Process Services, 2019). Dewatered biosolids are processed and stored on-site before being transferred off site for disposal.

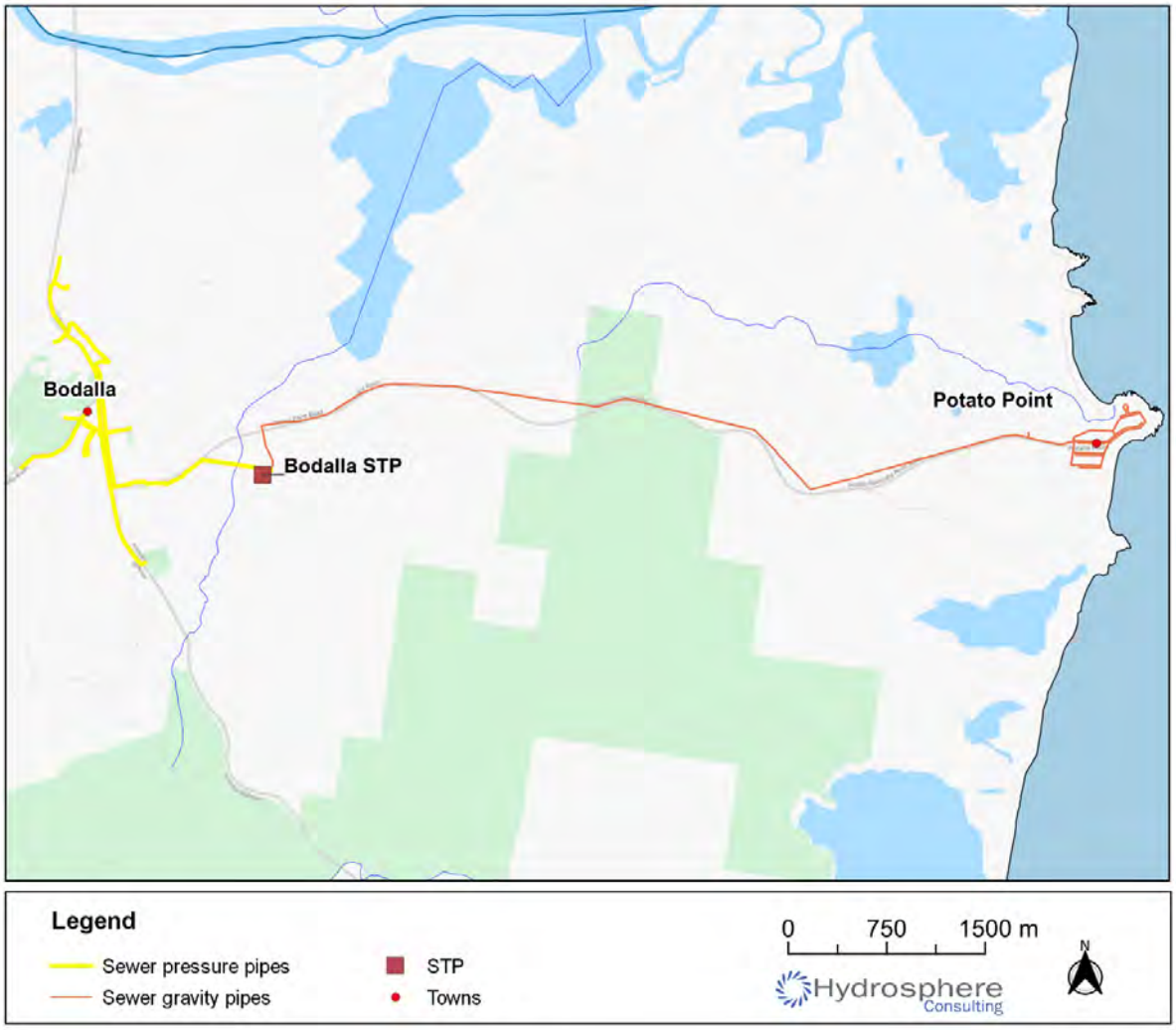


**Figure 14: Bodalla sewerage system (Potato Point scheme constructed in 2022)**

### 2.2.6 Narooma sewerage scheme

The Narooma sewerage scheme provides sewage collection, transport and treatment facilities for the localities of Dalmeny, Kianga, North Narooma and Narooma. The area serviced by the Narooma scheme, comprises mixed urban and commercial development. The Narooma scheme includes collection and transfer systems which comprise 98 km of gravity mains, 18 km of pressure pipes, 21 SPSs and associated rising mains (Figure 15). Sewage is transferred to the Narooma STP located at Kianga. Standby generators (mobile) and detention storage are available for all SPSs.

The Narooma STP (at Kianga) was originally constructed in the late 1970s with a capacity of 4,000 EP with secondary treatment (two Pasveer channels). In the late 1980s the plant was upgraded with a capacity of 8,000 EP. The plant operates with an aeration ditch biological reactor. Some treated effluent is reused on-site with the remainder discharged via an ocean outfall. Sludge lagoons provide biosolids stabilisation through cryophilic anaerobic digestion. Dewatering of sludge is undertaken in a sludge drying bed.

Dewatered sludge from drying beds is stockpiled for transport to the Bega Valley for beneficial reuse on agricultural land.

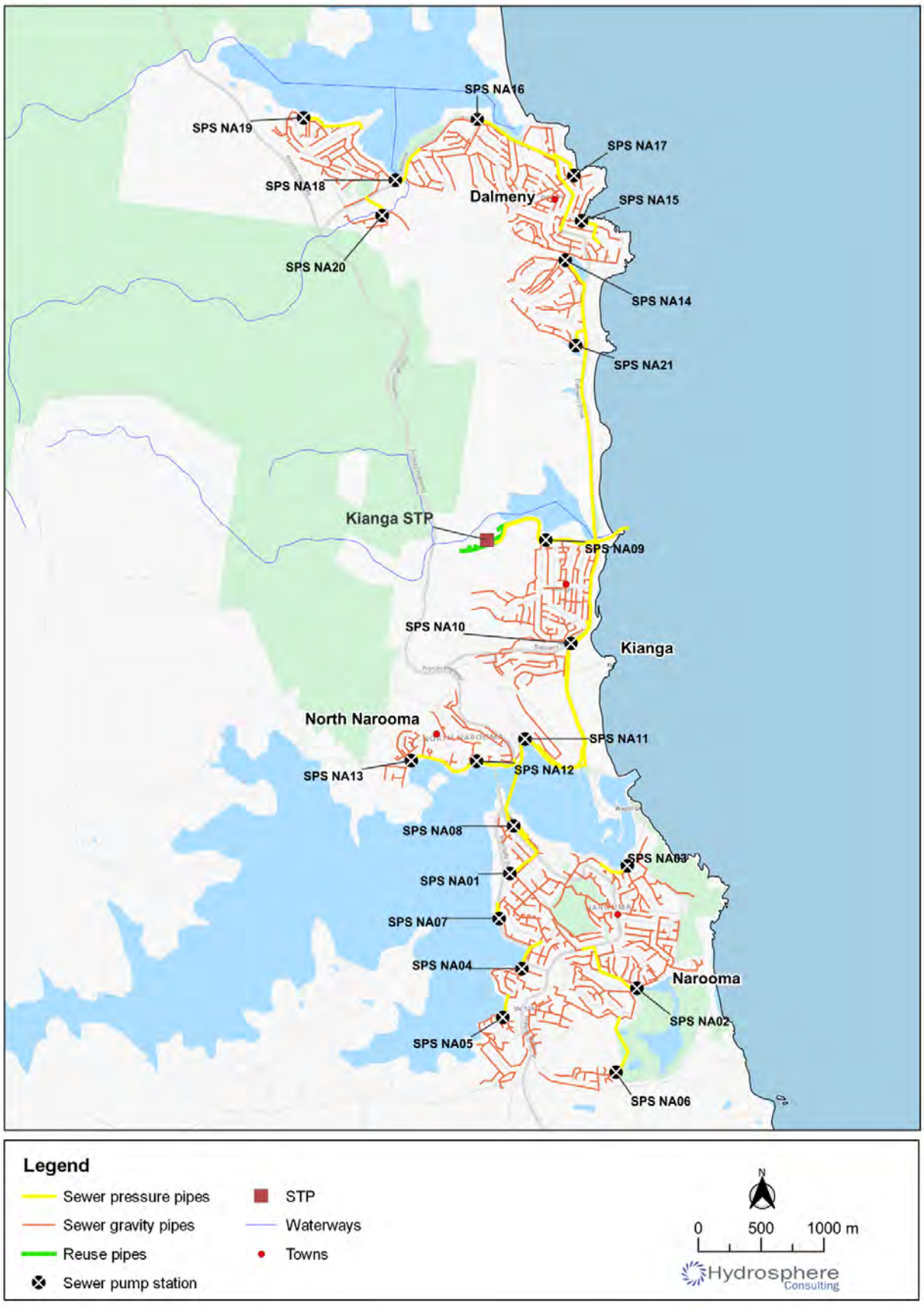


**Figure 15: Narooma sewerage system**

# 3. POPULATION AND DEMOGRAPHIC PROJECTIONS

In 2014, NSW Public Works completed a study on the population, water demand and sewer loads for ESC (NSW Public Works, 2014a). The study projected the distribution of the future population and dwellings, the future residential demand for water supply services, the growth in non-residential demand and the future sewage flows. PWA (2020) updated that analysis and projected the growth to 2051 based on the 2016 census figures and the most recent flow data from the water supply and sewerage schemes.

The water supply analysis uses the water production data (the treated water delivered into the system) and the customer billing data (metered consumption). Future demand has been estimated from the expected growth in the water supply areas and unit demands for each customer type. The average dry weather flow (ADWF) and peak wet weather flow (PWWF) and unit hydraulic loads have been analysed for each sewerage system. Future sewage loads have been estimated from expected growth in the catchment areas.

An addendum to PWA (2020) was prepared (PWA, 2022a) with system modifications and revised assumptions on population and dwelling projections and demand of new dwellings.

## 3.1 Population

The population forecast (PWA, 2020) provides estimates for the following data for the Eurobodalla Shire:

- Regional population.
- Visitor population.
- Non-private dwelling populations (e.g. aged care and hospitals).
- Serviced populations and dwellings.
- Future population growth.
- Future dwelling projections.

The 2019 average population was estimated using a combination of Council data and data from the Australian Bureau of Statistics (ABS) and is summarised in Table 1. A breakdown of future average and peak population served with water supply is given in Table 2.

**Table 1: 2019 estimated average population**

| Area | | Private dwellings | Hospital, nursing home and retirement villages | Average visitor population in commercial accommodation | Total average population |
|---|---|---|---|---|---|
| Sewered areas with reticulated water | Batemans Bay - North of Clyde River | 3,375 | 0 | 115 | 3,490 |
| | Batemans Bay - Clyde River to STP | 8,982 | 899 | 532 | 10,413 |
| | Batemans Bay south of STP | 2,293 | 0 | 7 | 2,300 |
| | Bodalla | 290 | 0 | 0 | 290 |
| | Moruya | 3,559 | 168 | 83 | 3,810 |
| | Narooma | 5,438 | 503 | 541 | 6,481 |
| | Tomakin | 3,479 | 221 | 167 | 3,867 |
| | Tuross | 2,211 | 0 | 58 | 2,270 |
| | Potato Point | 279 | 0 | 0 | 279 |
| Sewered areas without water | Turlinjah | 89 | 0 | 0 | 89 |
| Unsewered areas with water - not scheduled to be sewered | | 1,459 | 0 | 120 | 1,579 |
| Unsewered areas without water - scheduled to be sewered and connected to reticulated water | Nelligen | 200 | 0 | 0 | 200 |
| Unsewered areas without water not scheduled to be serviced | | 3,411 | 0 | 0 | 3,411 |
| **Total** | | **35,065** | **1,791** | **1,624** | **38,479** |

Source: PWA (2020)

**Table 2: Forecast population – water supply areas**

| Component | 2019 Population[1] | 2025 Population[2] | 2050 Population[2] |
|---|---|---|---|
| Water serviced permanent population[1] | 33,155 | 34,364 | 38,928 |
| Non-serviced permanent population[1] | 3,700 | 3,610 | 4,090 |
| Average visitor population | 1,624 | 1,673 | 1,896 |
| **Average population** | **38,479** | **39,647** | **44,914** |
| Additional peak visitor population (peak periods)[1,2] | 7,235 | 7,455 | 8,445 |
| Holiday house visitors (private)[1,2] | 20,821 | 21,429 | 24,509 |
| **Peak population** | **66,535** | **68,532** | **77,867** |

1. Adapted from PWA (2020).
2. Growth rate 0.5% p.a. (PWA, 2020).

## 3.2 Water Supply Demand

The water demand analysis (PWA, 2020; PWA, 2022a) provides forecasts for:

- Average (rainfall) year demand (WTP production) for current climate and with climate change – for revenue planning.
- Dry year demand (WTP production) for current climate and with climate change – to assess drought security.
- Peak day demand (WTP production) for current climate and with climate change – to assess system reliability.

Annual and peak day forecasts are shown in the following figures. The previous 2014 forecasts used in the 2016 IWCM Strategy are also shown here. The 2022 forecasts are considered to be more accurate than the 2014 forecasts as minimal data were available on WTP production and demand at that time.

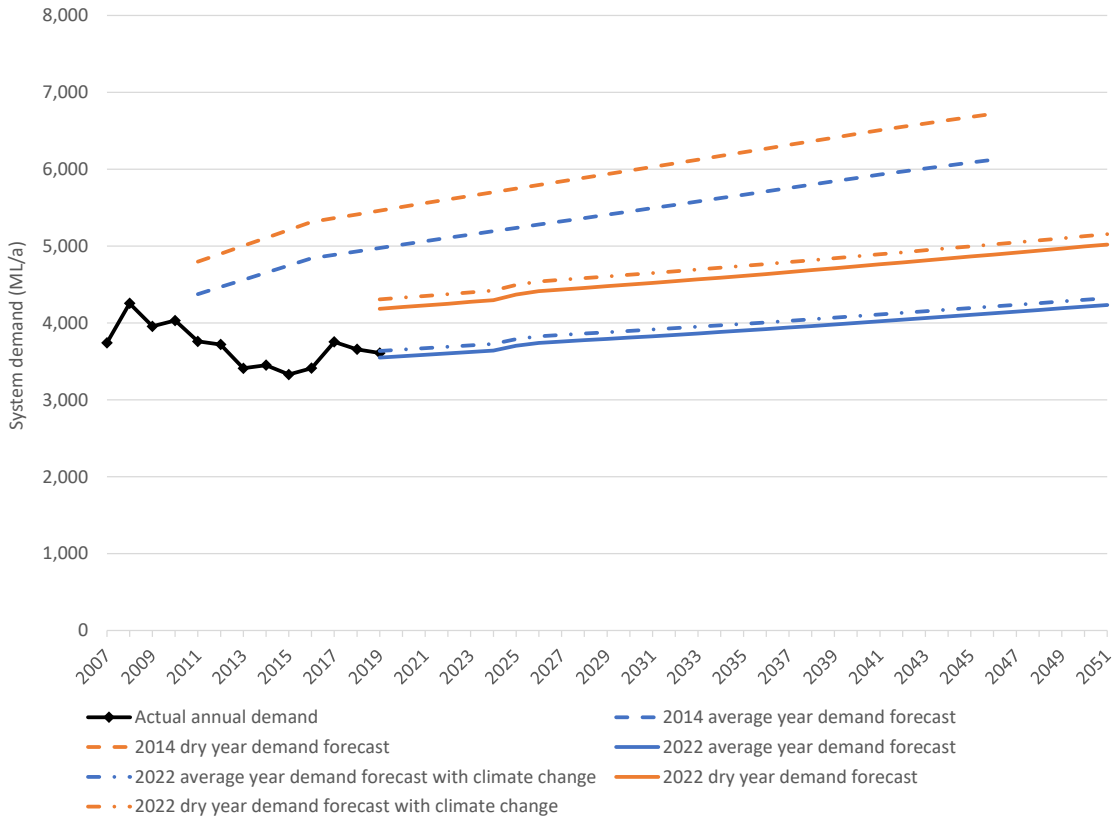


**Figure 16: Historical annual demand, average and dry year demand forecasts**

Source: NSW Public Works (2014a), PWA (2022a)

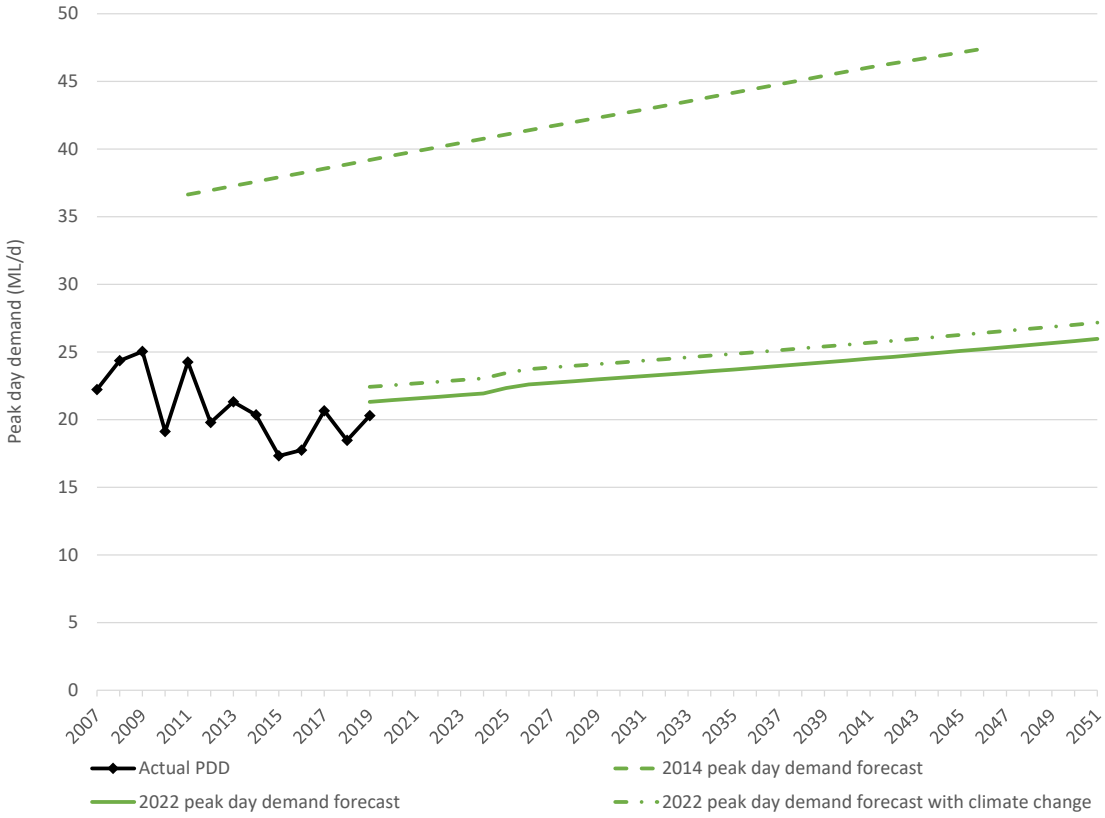


**Figure 17: Historical peak day demand and peak day demand forecasts**

Source: PWA (2022a)

## 3.3 Sewerage System Demand

The sewer demand analysis (PWA, 2020; PWA, 2022a) provides forecasts for EP and ADWF for each sewerage system as shown in the following figures. The 2014 EP forecasts used in the 2016 IWCM Strategy are also shown on these figures.

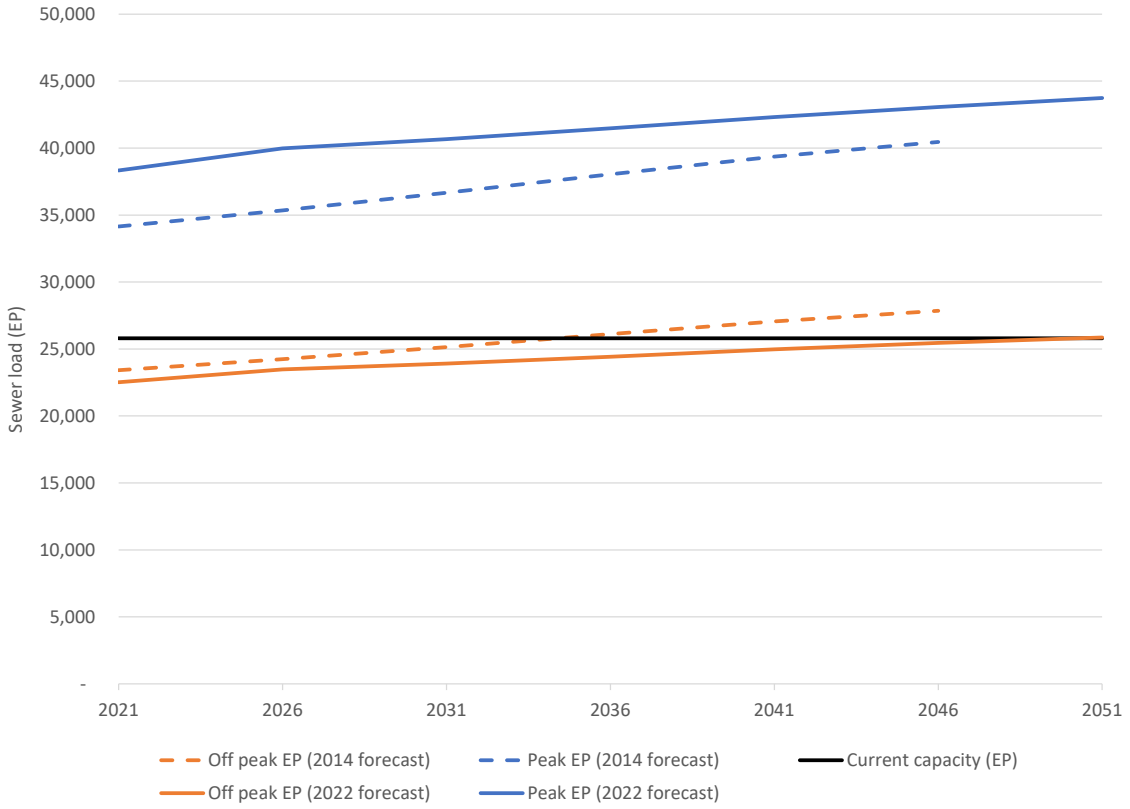


**Figure 18: Forecast sewer load (EP) and STP capacity – Batemans Bay**

Source: PWA (2022a)

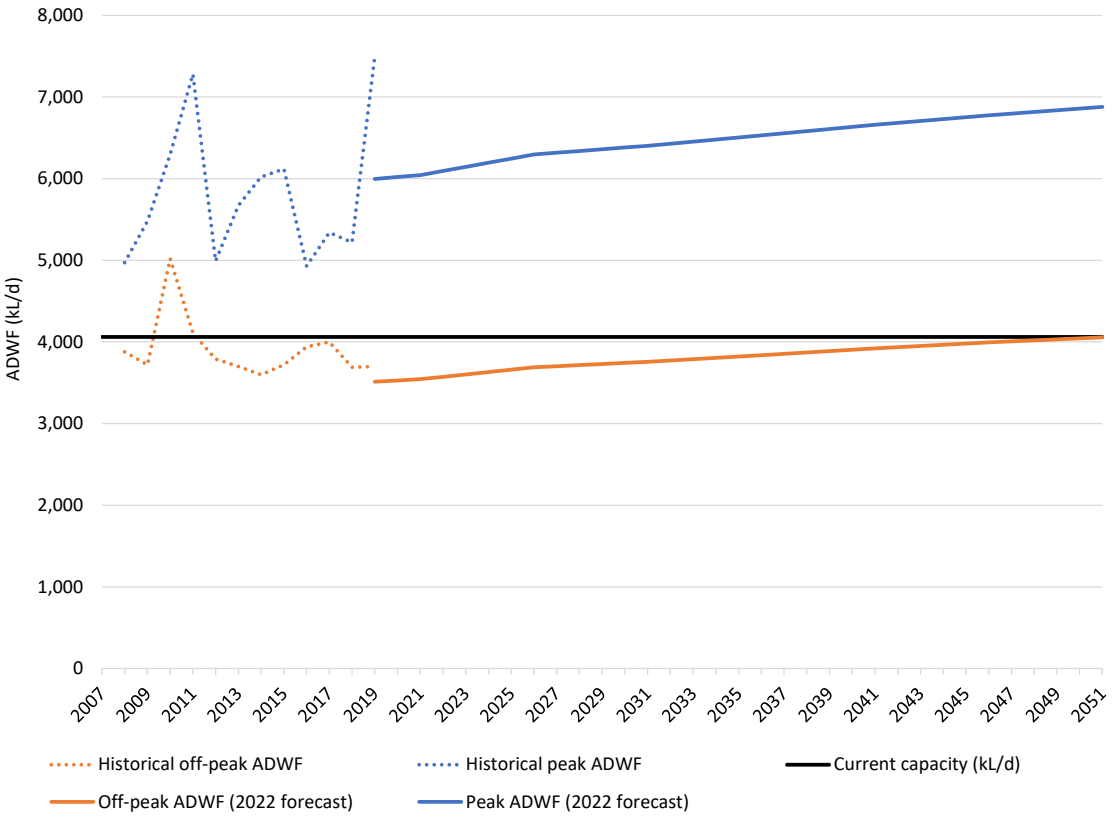


**Figure 19: Historical and forecast sewer load (ADWF) and STP capacity – Batemans Bay**

Source: PWA (2022a). Sewer load = 157 L/EP/day

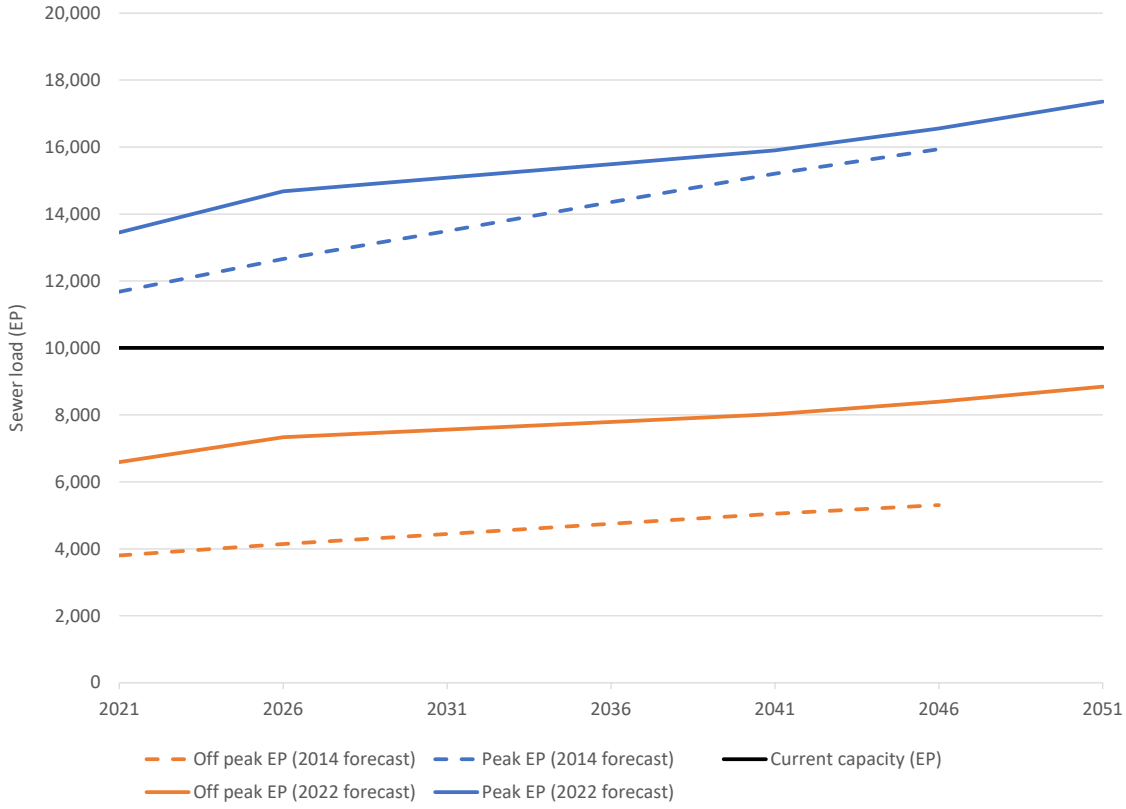


**Figure 20: Forecast sewer load (EP) and STP capacity – Tomakin**

Source: PWA (2022a)

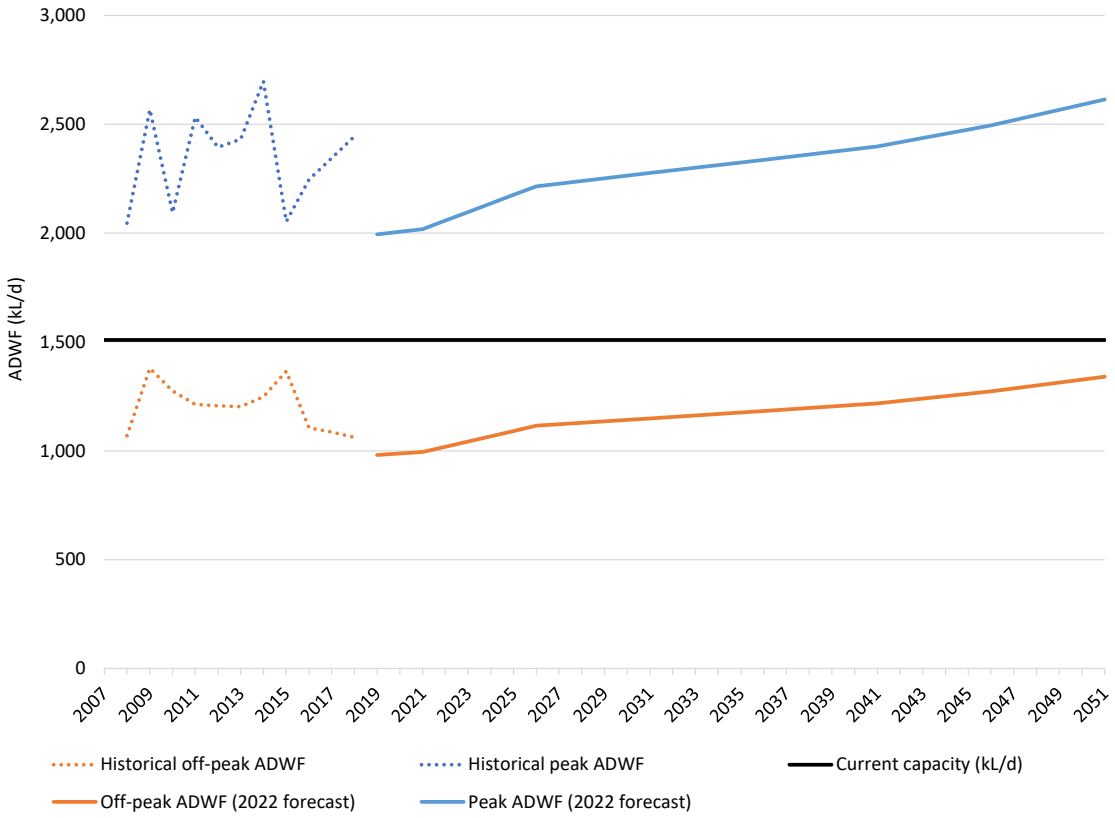


**Figure 21: Historical and forecast sewer load (ADWF) and STP capacity – Tomakin**

Source: PWA (2022a). Sewer load = 151 L/EP/day

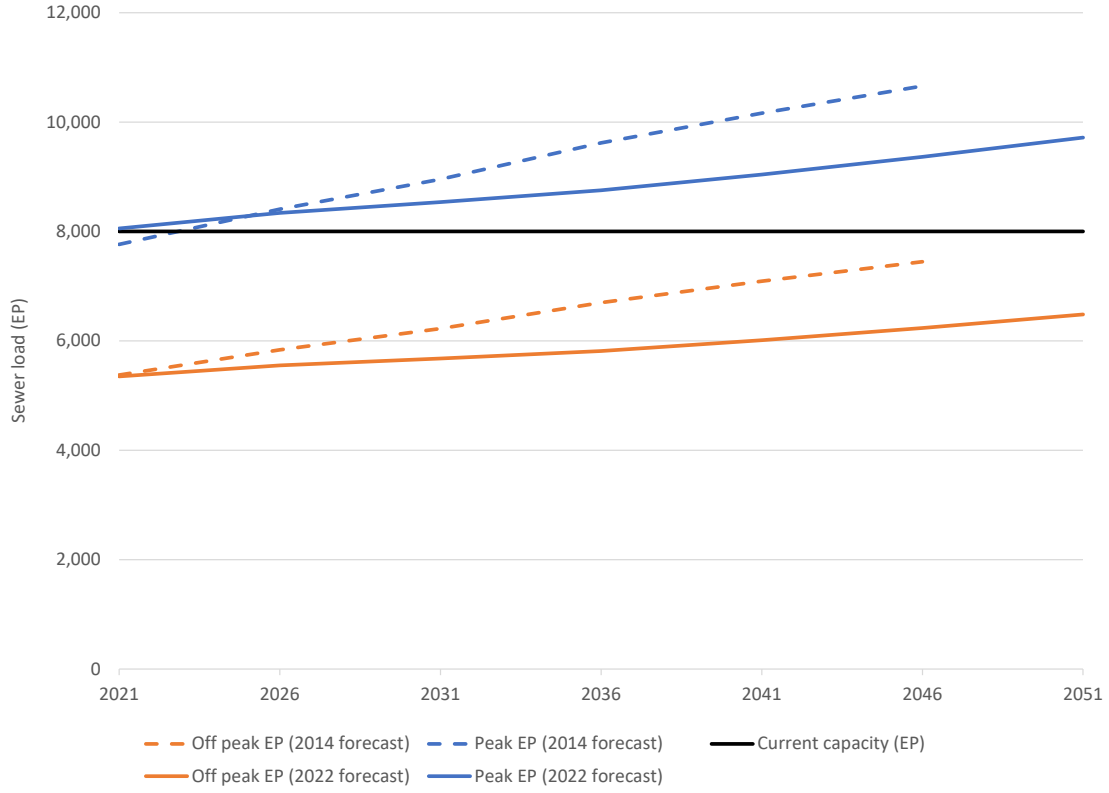


**Figure 22: Forecast sewer load (EP) and STP capacity – Moruya**

Source: PWA (2022a)

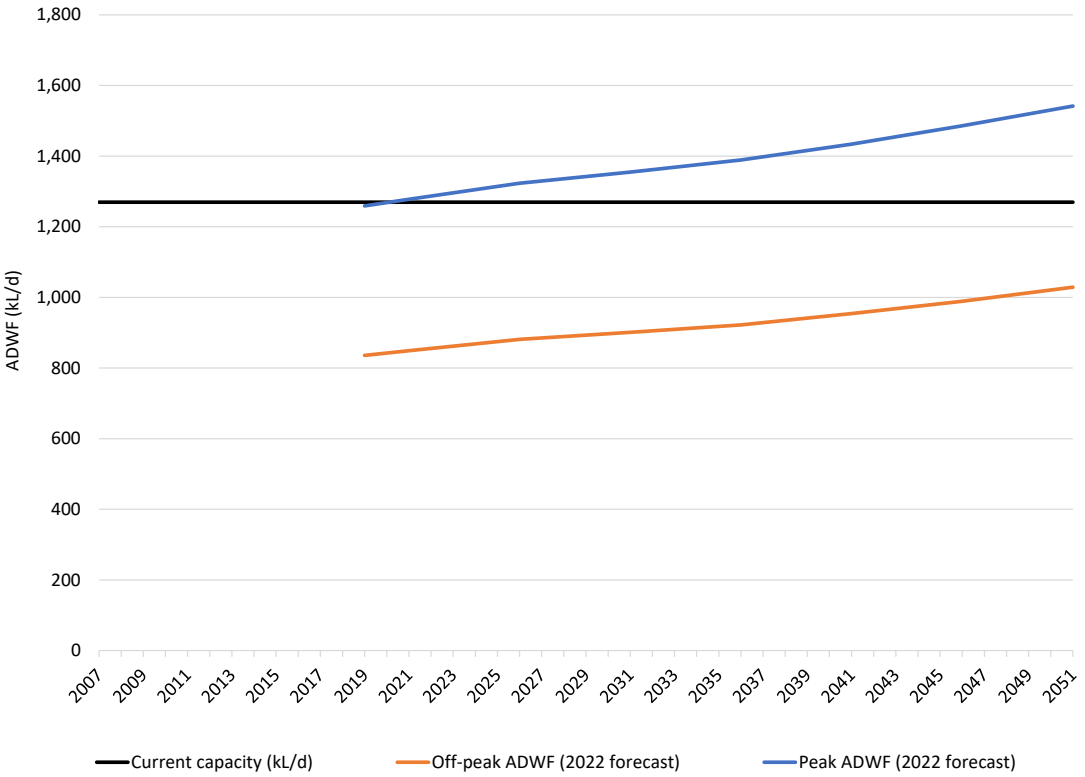


**Figure 23: Historical and forecast sewer load (ADWF) and STP capacity – Moruya**

Source: PWA (2022a). Sewer load = 159 L/EP/day. Historical STP inflows are not considered to be representative of sewer generation due to exfiltration and infiltration and are therefore not recorded

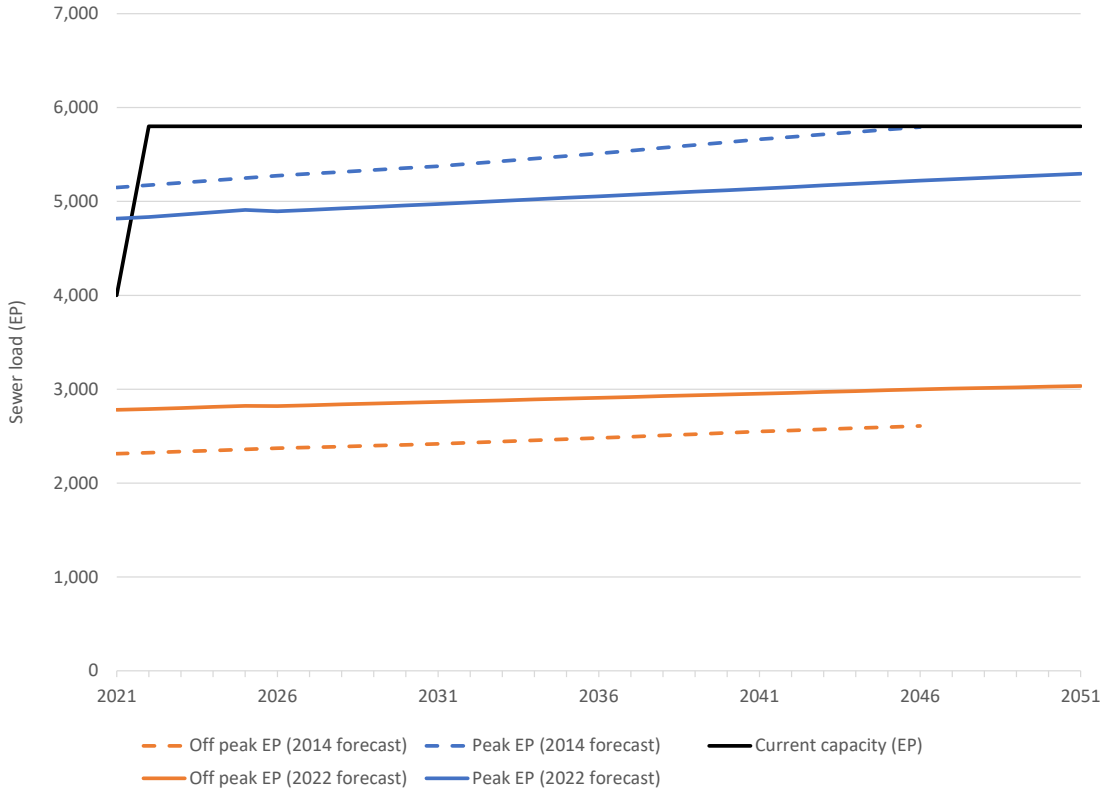


**Figure 24: Forecast sewer load (EP) and STP capacity – Tuross**

Source: PWA (2022a)

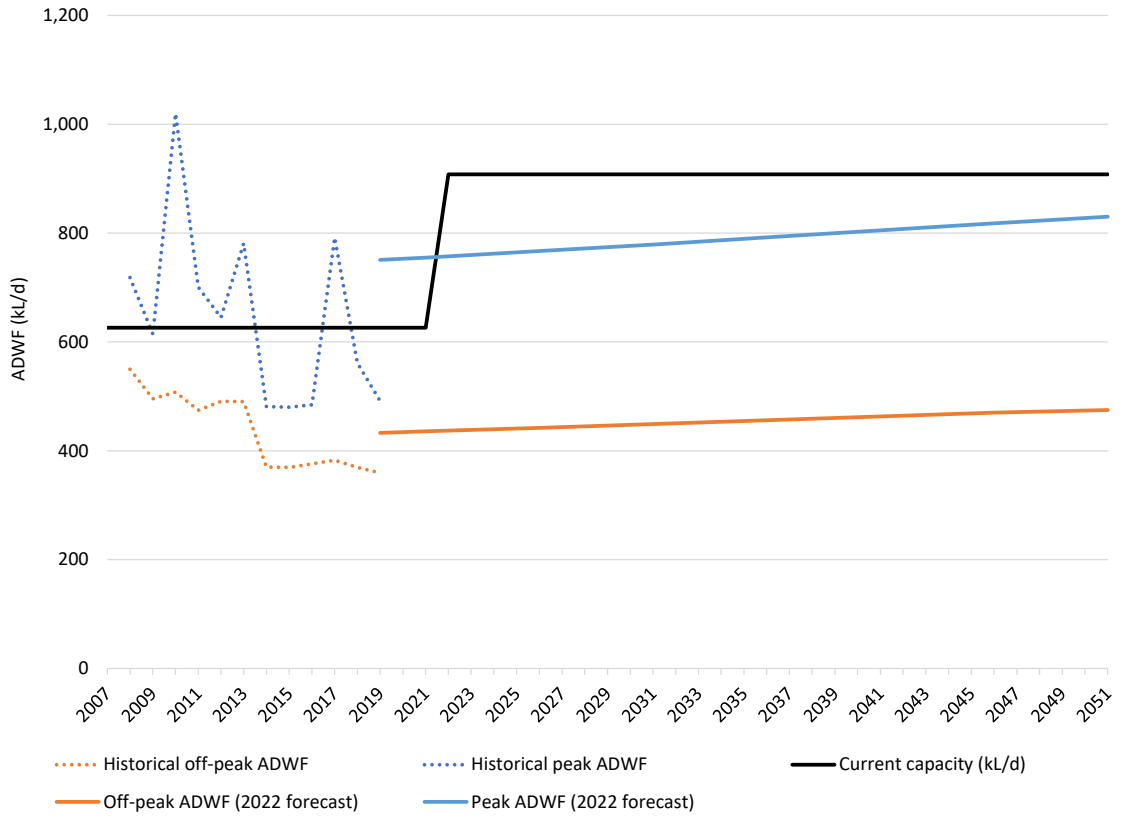


**Figure 25: Historical and forecast sewer load (ADWF) and STP capacity – Tuross**

Sewer load = 157 L/EP/day (PWA, 2022a)

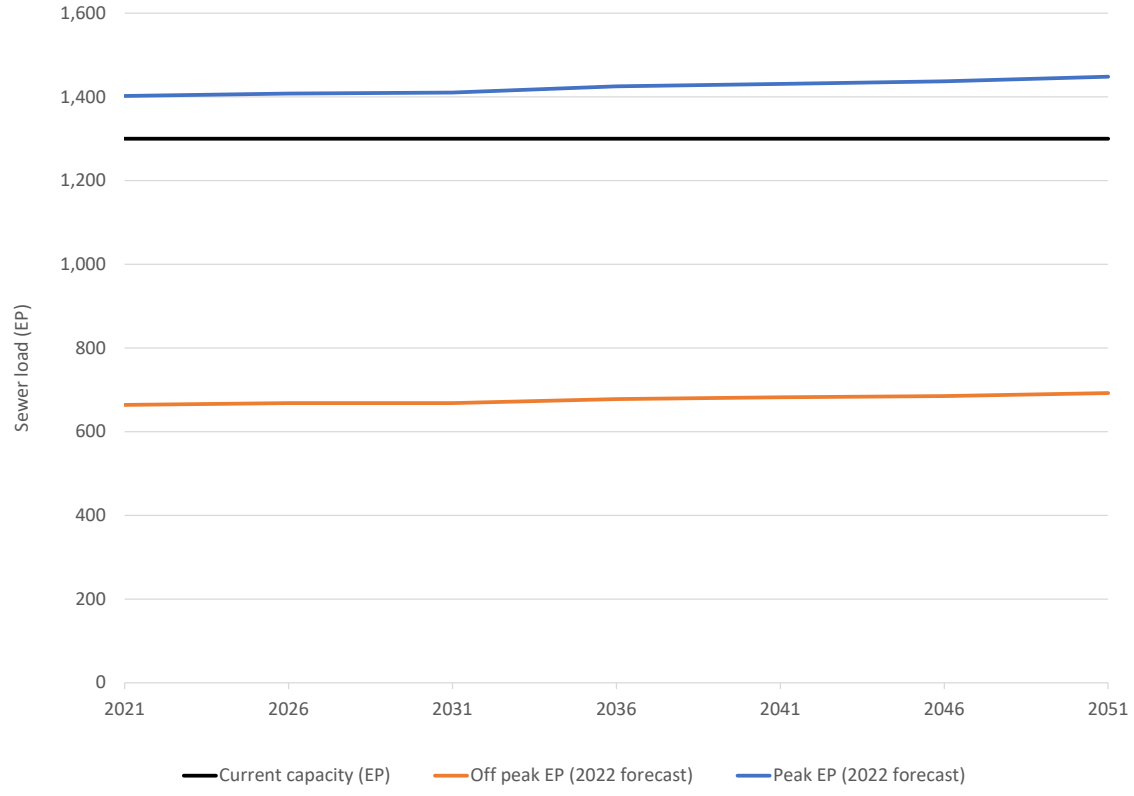


**Figure 26: Forecast sewer load (EP) and STP capacity – Bodalla**

Source: PWA (2022a)

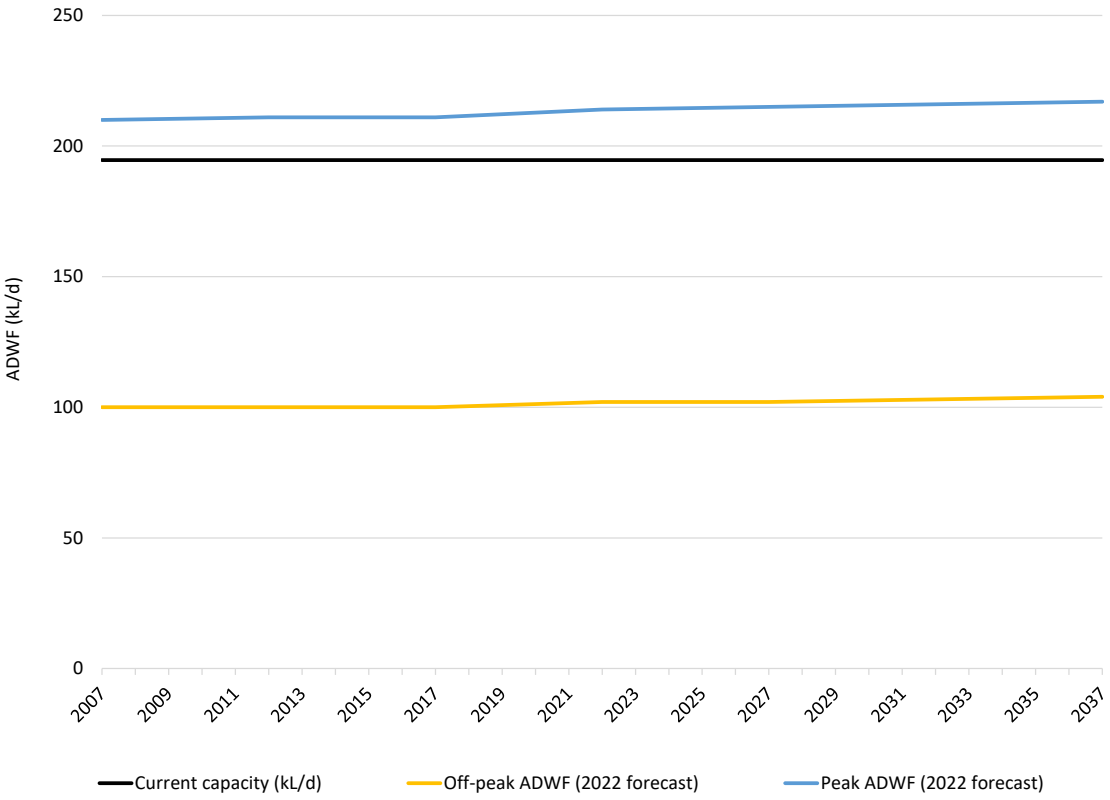


**Figure 27: Historical and forecast sewer load (ADWF) and STP capacity – Bodalla**

Sewer load = 150 L/EP/day (PWA, 2022a)

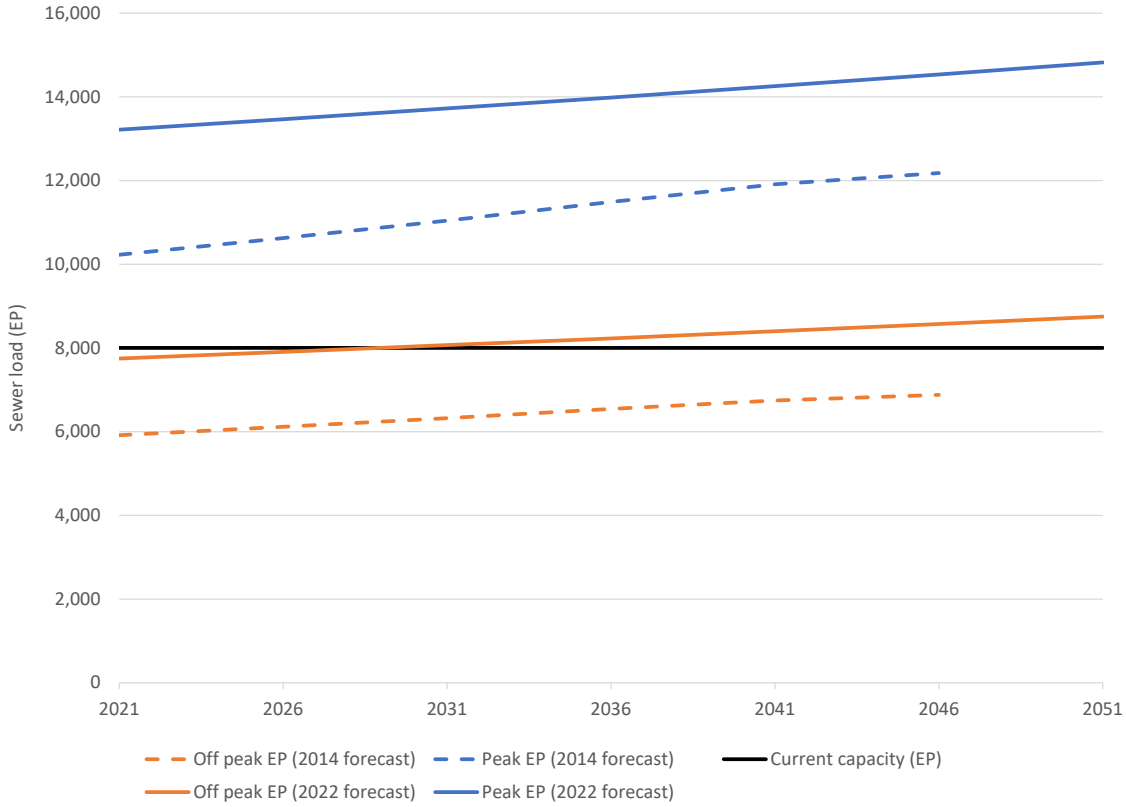


**Figure 28: Forecast sewer load (EP) and STP capacity – Narooma**

Source: PWA (2022a)

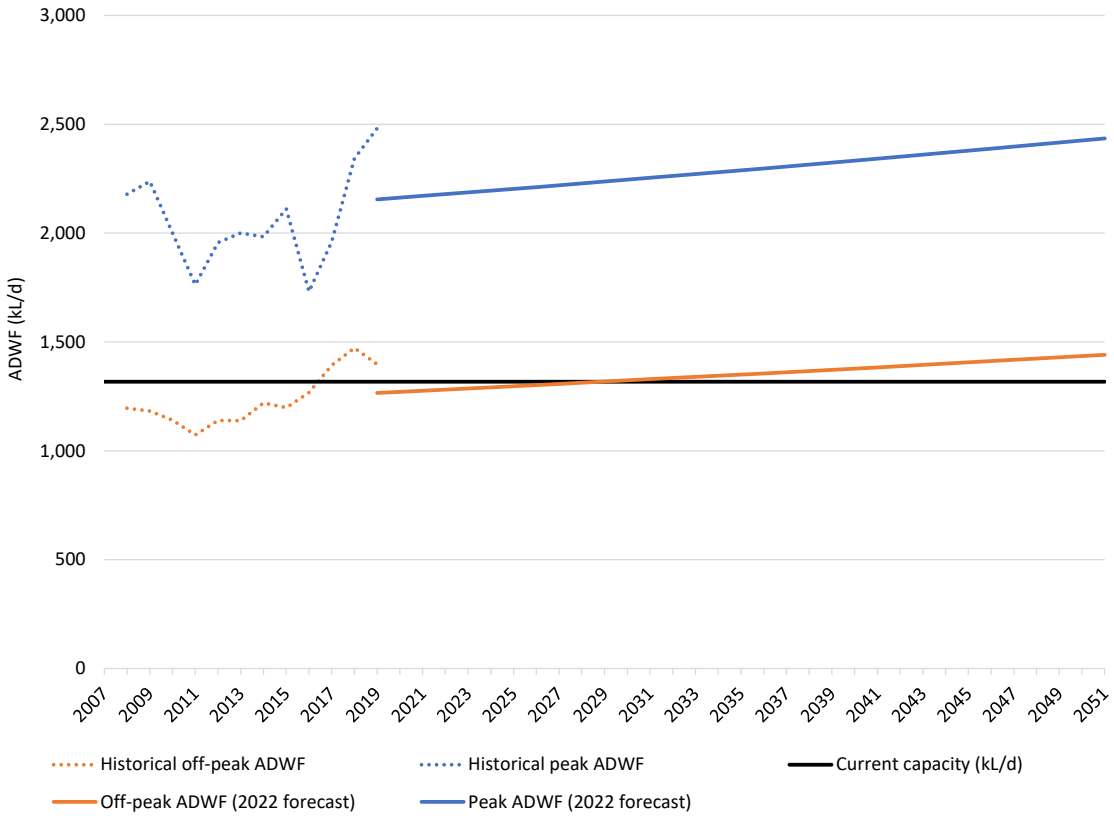


**Figure 29: Historical and forecast sewer load (ADWF) and STP capacity – Narooma**

Sewer load = 165 L/EP/day (PWA, 2022a)

# 4. LEVELS OF SERVICE

The levels of service for water supply and sewerage are listed in Table 3 and Table 4. The levels of service are targets that ESC aims to achieve and are not associated with a customer contract.

**Table 3: Water supply levels of service**

| Description | Units | Target Level of Service |
|---|---|---|
| *System Performance* | | |
| Minimum pressure upstream of water meter | m head | 20 |
| Maximum static pressure | m head | 80 |
| Availability of water for fire fighting | - | Water will be available from fire hydrants for fire-fighting at minimum flow rates determined by guidelines for specific types of development as set out in Local Government Regulations and the conditions established by NSW Fire & Rescue |
| *Consumption Restrictions in Droughts* | | |
| Maximum duration of restrictions | Months per 10-year period | 6 (i.e. 5% of the time) |
| Maximum frequency of restrictions | number of times per 10 years | 1 (i.e. 10% of years) |
| Ability to supply demand through the worst drought on record | % of water demand | 90 (i.e. a 10% reduction in consumption). |
| *Interruptions to Supply (per year per supply)* | | |
| Planned (95% of time) | | |
| Maximum duration | hours | 8 |
| Maximum occurrence | Per year per customer | 1 |
| Notice given to domestic customers | days | 2 |
| Unplanned | | |
| Maximum duration | hours | 6 |
| Maximum occurrence | Per year per customer | 1 |
| Maximum interruptions to supply | properties per 1,000 properties p.a. | 100 |

| Description | Units | Target Level of Service |
|---|---|---|
| *Service Provided* | | |
| Time to provide an individual, residential connection to water supply in serviced area | Business days | 10 |
| Time to test a customer's water meter | Business days | 10 |
| *Customer Complaints* | | |
| Verbal inquiry response time | Business days | 2 |
| Written inquiry response time | Business days | 10 |
| *Water Quality* | | |
| Potable Water Quality | | Australian Drinking Water Guidelines (ADWG, NHMRC and NRMMC, 2011) |
| *Priority, Issues and Effects* | | *Response Time (time to have staff on-site or to investigate a problem or answer an enquiry)* |
| Priority 1: A complete failure to maintain continuity of supply to multiple customers or critical user at critical time | | |
| Possible Issues: Broken water main, broken service, jammed hydrant, no water, dirty water, leak creating a major issue.<br>Typical Effects: Personal injury or risk to public health, loss of supply, major property damage, failure to maintain quality or quantity of service, large volume of water wasted, significant unplanned depletion of service reservoir, major environmental impact. | | 1 hour (business hours)<br>2 hours (after hours) |
| Priority 2: Failure to maintain continuity of supply to a single customer or critical user at a non-critical time | | |
| Possible Issues: Poor pressure, leaking tap, stop tap, water main/service, valve or hydrant, minor leak on footpath or roadway, partial failure of connections, faulty or damaged meter.<br>Typical Effects: Minor property damage, minor environmental impact | | 4 hours (business hours)<br>4 hours (after hours) |
| Priority 3: Known fault, non-urgent | | |
| Possible Issues: Service disconnection, faulty hydrant/valve, missing hydrant/valve lid.<br>Typical Effects: Water hammer, need for preventative maintenance, minor customer impact. | | Within 5 business days |

**Table 4: Sewerage levels of service**

| Description | Units | Target Level of Service |
|---|---|---|
| *Availability of Service* | | |
| Residential Areas | - | All urban residential and industrial areas where practicable. |
| *Frequency of System Failures* | | |
| Wet weather sewer overflows | ARI | 1 in 5-year |
| *Customer Complaints* | | |
| Verbal inquiry response time | Business days | 2 |
| Written inquiry response time | Business days | 10 |
| Odours | Events per 1,000 properties per year | <1 |
| *Effluent Discharge Compliance* | | |
| Compliance with Licence Conditions | % | 100 |

# 5. WATER SUPPLY STRATEGY

## 5.1 Drought and Emergency Management

### 5.1.1 Existing drought management regime

Council prepared a drought relief options report for the Shire in 2002 to develop emergency response strategies in order to manage the extended drought of 2002/03. Modifications to the Eurobodalla water supply (including Moruya River to Deep Creek Dam transfer pipeline, the Northern WTP and the Southern WTP) and the experiences gained and emergency response measures implemented during the 2002/03 drought were incorporated into the *Eurobodalla Water Supply Drought Management Plan* (Public Works, 2011) which provides the current restriction regime and drought response measures.

The restriction triggers, based on the level in Deep Creek Dam (DCD), Tuross River aquifer, the flow in Moruya River and weather patterns are shown in Table 5 as well as the target demand at each restriction level for each season. Council actions at each restriction level are documented in the 2011 plan.

**Table 5: Drought restriction regime**

| Level | DCD scenario | Triggers | | | | Average target demand (ML/d) | | |
|---|---|---|---|---|---|---|---|---|
| | | DCD level | Tuross aquifer level | Moruya River flow | Weather pattern[1] | Summer | Shoulder | Winter |
| 0 | Not stated | Not stated | | | | 16.7 | 13.1 | 12.6 |
| 1 | Falling | ≤ 90% | 100% | < 5 ML/d | Predicted rainfall SOI | 15.9 | 12.4 | 12.0 |
| | Rising | ≥ 80% | 100% | > 5 ML/d | | | | |
| 2 | Falling | ≤ 70% | 100% | 0 ML/d | Predicted rainfall SOI | 14.2 | 11.1 | 10.7 |
| | Rising | ≥ 65% | 100% | > 5 ML/d | | | | |
| 3 | Falling | ≤ 60% | ≤ 80% | 0 ML/d | Predicted rainfall SOI | 13.9 | 10.8 | 10.5 |
| | Rising | ≥ 50% | 100% | > 5 ML/d | | | | |
| 4 | Falling | ≤ 40% | ≤ 55% | 0 ML/d | Predicted rainfall SOI | 13.4 | 10.5 | 10.1 |
| | Rising | ≥ 35% | 100% | > 5 ML/d | | | | |
| 5 | Falling | ≤ 30% | ≤ 40% | 0 ML/d | Predicted rainfall SOI | 11.7 | 9.1 | 8.8 |
| | Rising | No stated | 100% | > 5 ML/d | | | | |
| 6 | Empty | 0% | 0% | 0 ML/d | Predicted rainfall SOI | 5.1 | 5.1 | 5.1 |

Source: NSW Public Works (2011)

1. No details specified

Permanent water conservation measures (at Level 0) are recommended by ESC:

- Use water between 4pm and 10am only, using hand-held hoses, drip-irrigation systems, fixed sprinklers or micro-spray systems.
- Only wash hard surfaces (paths, decks, driveways) with a trigger-nozzle hose when cleaning up after dangerous spills, prior to painting, or removing growths of algae or moss.
- Wash private vehicles, boats and flush motors on grass areas where possible using buckets and a final rinse with a trigger nozzle hose at any time.
- Cover private swimming pools and external spas when not in use.
- Washing boats and trailers at boat ramps is always prohibited.

In times of drought, Council's *Water Restrictions Policy 2022* is implemented by following the *Eurobodalla Water Supply Drought Management Plan* (Public Works, 2011). The restriction regime for levels 1 to 5 provides increasing restrictions on outdoor water use and applies to all water users including residents, visitors, businesses and organisations.

A Drought and Emergency Response Contingency Plan (DERCP) will be prepared with consideration of the adopted water supply augmentation strategy and experiences from recent droughts and emergencies (Section 12).

### 5.1.2 Supplementary supply options

The Shire is currently dependent on the storage available in Deep Creek Dam as the primary source of water in dry periods. As the dam is drawn down, the risk of Cyanobacteria (blue green algae) and other water quality issues has been addressed by the Northern WTP which is capable of treating the worst quality raw water from the dam. Alternative supply options considered in the *Eurobodalla Water Supply Drought Management Plan* (Public Works, 2011) include:

- Groundwater from Broulee bores with a package WTP.
- Desalination of either brackish water or seawater.
- Supply from Brogo Dam (Bega Valley Shire Council) with connection to the ESC water supply system at Central Tilba.
- Dromedary Creek and Little Dromedary Creek weir (former supply to Central Tilba and Narooma).
- Water carting from Tilba Dam (with local WTP) or Shoalhaven City Council water supplies.

### 5.1.3 Historical drought performance

The Shire experienced droughts in 1980, 1982, 2002-05, 2007, 2009 and 2019/20. Experience during recent droughts as well as the 2019/20 drought and bushfires has informed Council's planning for emergency response. The 2019/2020 bushfire season was particularly severe and lead to high water demands for water by fire fighters, residents and business owners. Due to the bushfires, the WTP was evacuated and was therefore not operational. Many residents also started/continued to set-up sprinklers to wet down properties over much of the Shire regardless of whether their property was under imminent threat as they were unsure if they would be able to return to their property if the situation changed. Water demand increased as residents watered lawns and gardens and filled tanks. On the morning of Saturday 4 January 2020 demand increased considerably as some residents on the outskirts left sprinklers going before relocating into town, some residents in town hosed buildings and used sprinklers and fire crews filled trucks and tankers (PWA, 2020).

#### Historic rainfall

Annual rainfall across the Shire is shown on Figure 30 and summarised in Table 6.

**Table 6: Summary of rainfall across the Shire (1970 – 2021 calendar years)**

| Location | Lat | Long | Elevation (m) | Annual minimum (mm) | Annual mean (mm) | Annual maximum (mm) |
|---|---|---|---|---|---|---|
| DCD catchment | -35.75 | 150.15 | 57.0 | 419 (1982) | 959 | 1,764 |
| Central Tilba | -36.30 | 150.10 | 42.7 | 405 (1982) | 977 | 1,688 |
| Surfside | -35.70 | 150.20 | 27.8 | 411 (1982) | 976 | 1,741 |
| Moruya | -35.90 | 150.15 | 18.6 | 463 (1980) | 971 | 1,751 |

Source: Queensland Government (2022)

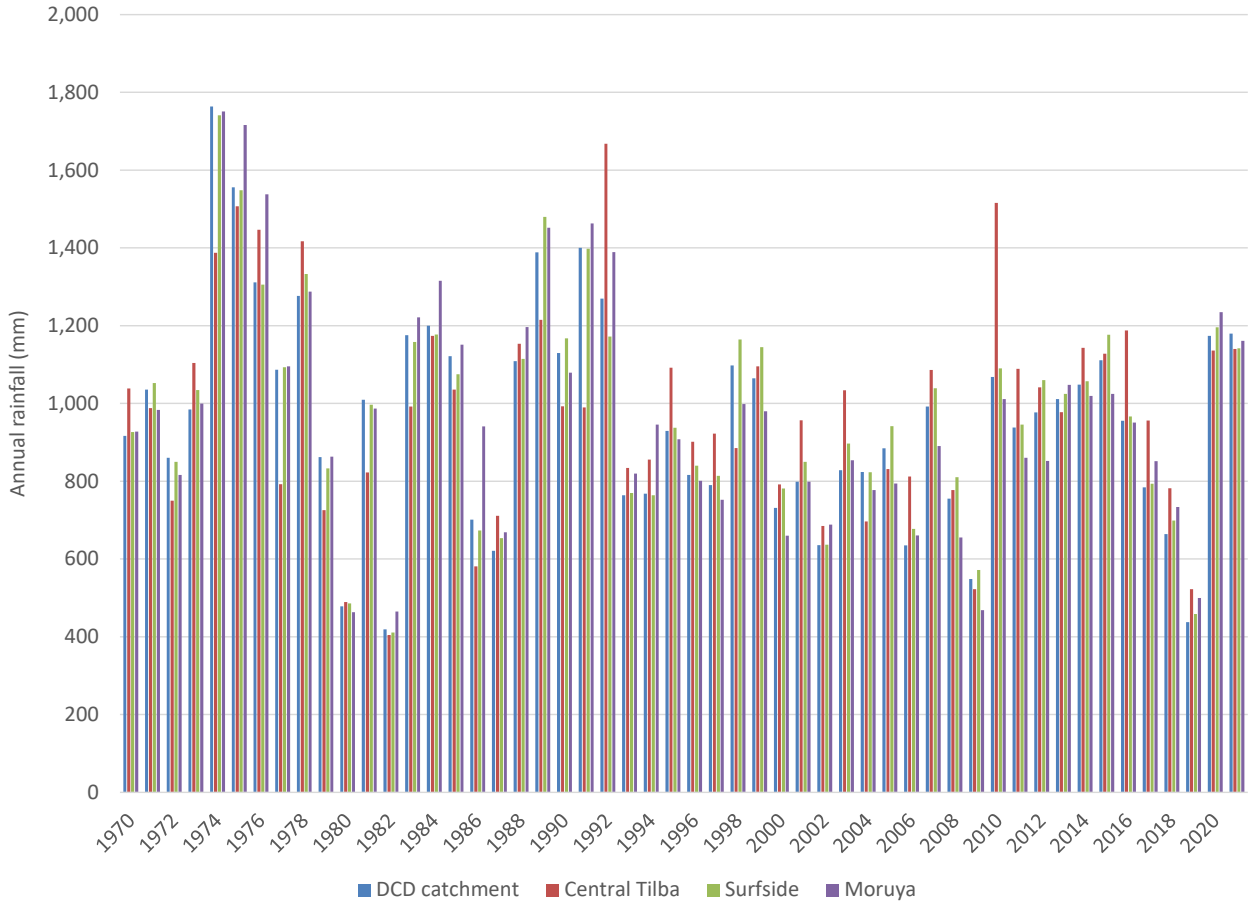


**Figure 30: Annual rainfall across the Shire 1970 – 2021 (calendar years)**

Source: Queensland Government (2022)

DCD catchment: 35.75˚S, 150.15˚E, 57m; Central Tilba: 36.3 ˚S, 150.1 ˚E, 42.7 m; Surfside: 35.7 ˚S, 150.2 ˚E, 27.8 m; Moruya: 35.9 ˚S, 150.15 ˚E, 18.6m.

## Restrictions

The history of water restrictions since 2002 and the seasonal unrestricted and restricted demand are shown in Table 7. Prior to the introduction of restrictions in 2002, there was low rainfall during winter and spring and consumption increased during that time but decreased once level 1 restrictions were introduced.

**Table 7: Restrictions imposed and daily average demand (2002 – 2022)**

| Level | Start | End | Days | Daily demand (ML/d)[1] | | | |
|---|---|---|---|---|---|---|---|
| | | | | Summer | Autumn | Winter | Spring |
| 0 | 1/01/2002 | 8/10/2002 | 280 | 14.09 | 13.88 | 15.56 | 17.45 |
| 1 | 9/10/2002 | 22/10/2002 | 13 | | | | 13.53 |
| 3 | 23/10/2002 | 5/02/2003 | 105 | 13.46 | | | 12.38 |
| 4 | 6/02/2003 | 25/02/2003 | 19 | 10.39 | | | |
| 3 | 26/02/2003 | 10/03/2003 | 12 | 12.61 | 10.78 | | |
| 2 | 11/03/2003 | 25/10/2003 | 228 | | 10.95 | 11.38 | 13.99 |
| 1 | 26/10/2003 | 25/11/2003 | 30 | | | | 12.66 |
| 0 | 26/11/2003 | 2/06/2004 | 189 | 15.62 | 13.68 | | 16.02 |
| 1 | 3/06/2004 | 31/08/2004 | 89 | | | 11.46 | |
| 3 | 1/09/2004 | 31/01/2005 | 152 | 14.30 | | | 11.95 |
| 2 | 1/02/2005 | 11/04/2005 | 69 | 10.62 | 11.69 | | |
| 0 | 12/04/2005 | 23/10/2006 | 559 | 14.12 | 12.35 | 9.48 | 10.89 |
| 1 | 24/10/2006 | 31/01/2007 | 99 | 12.26 | | | 10.34 |
| 2 | 1/02/2007 | 25/03/2007 | 52 | 9.61 | 8.84 | | |
| 1 | 26/03/2007 | 14/05/2007 | 49 | | 8.95 | | |
| 0 | 15/05/2007 | 18/11/2008 | 553 | 13.75 | 11.12 | 9.36 | 10.76 |
| 1 | 19/11/2008 | 24/03/2009 | 125 | 11.52 | 11.65 | | 8.86 |
| 2 | 25/03/2009 | 6/12/2009 | 256 | 11.66 | 11.37 | 12.42 | 10.87 |
| 3 | 7/12/2009 | 23/02/2010 | 78 | 13.16 | | | |
| 2 | 24/02/2010 | 1/06/2010 | 97 | 7.62 | 5.64 | | |
| 1 | 2/06/2010 | 20/07/2010 | 48 | | 6.48 | | |
| 0 | 21/07/2010 | 19/10/2018 | 3,012 | 10.02 | 8.83 | 8.47 | 8.71 |
| 1 | 20/10/2018 | 30/11/2018 | 41 | | | | 7.39 |
| 2 | 1/12/2018 | 27/01/2019 | 57 | 11.84 | | | |
| 0 | 28/01/2019 | 13/10/2019 | 258 | 10.73 | 9.68 | 9.31 | 9.96 |
| 3 | 14/10/2019 | 1/12/2019 | 48 | 10.92 | | | 10.57 |
| 4 | 2/12/2019 | 27/02/2020 | 87 | 9.28 | | | |
| 3 | 28/02/2020 | 4/04/2020 | 36 | 7.74 | 8.95 | | |

| Level | Start | End | Days | Daily demand (ML/d)[1] | | | |
|---|---|---|---|---|---|---|---|
| | | | | Summer | Autumn | Winter | Spring |
| 2 | 5/04/2020 | 14/05/2020 | 39 | | 8.82 | | |
| 0 | 15/05/2020 | 30/06/2022 | 776 | 10.93 | 9.29 | 9.00 | 9.24 |

1. Total demand from DCD (Northern WTP) and the Southern WTP

It appears that restrictions were generally successful in reducing demand (Table 8) with a reduction of between 2% and 39% (average 16%). The demand in January 2020 increased due to the bushfires.

**Table 8: Average unrestricted and restricted demand since 2002**

| Level | Days | % of time | Daily demand (ML/d)[1] | | | |
|---|---|---|---|---|---|---|
| | | | Summer | Autumn | Winter | Spring |
| 0 | 5,627 | 75% | 12.75 | 11.26 | 10.20 | 11.86 |
| 1 | 563 | 8% | 11.46 | 9.69 | 11.46 | 10.56 |
| 2 | 729 | 10% | 7.78 | 7.36 | 7.93 | 8.29 |
| 3 | 431 | 6% | 12.03 | 9.87 | No data | 11.63 |
| 4 | 106 | 1% | 9.83 | No data | No data | No data |

1. Total demand from DCD (Northern WTP) and the Southern WTP)

The impact of restrictions over the last ten years is shown in Table 9. In the last ten years, restrictions have been imposed for 308 days (8% of the time) or twice in 10 years. The restricted demand was 86% of the unrestricted demand (on average).

**Table 9: Impact of restrictions (2013 – 2022)**

| Level | Days | % of time | Daily demand (ML/d)[1] | | | | | % of unrestricted demand |
|---|---|---|---|---|---|---|---|---|
| | | | Summer | Autumn | Winter | Spring | Average | |
| 0 | 3,335 | 92% | 10.52 | 9.16 | 8.86 | 9.30 | 9.46 | 100% |
| 1 | 41 | 1% | No data | No data | No data | 7.39 | 7.39 | 68% |
| 2 | 96 | 3% | 11.84 | 8.82 | No data | No data | 10.33 | 95% |
| 3 | 84 | 2% | 9.33 | 8.95 | No data | 10.57 | 9.62 | 89% |
| 4 | 87 | 2% | 9.28 | No data | No data | No data | 9.28 | 85% |

1. Total demand from DCD (Northern WTP) and the Southern WTP)

## Drought operations and communications

During the 2019/20 drought, ESC developed fact sheets for residents, visitors and businesses on the level 1, 2, 3 and 4 restriction requirements, the enquiries and complaints process, infringement process and bore water signage. Council operational and communication actions were also reviewed and updated. Five roadside signs showing the restriction level were installed throughout the Shire and adjusted as required. The communications plan includes the provision of restriction information on Council's website and noticeboard, media releases, posters and brochures distributed to community and visitor centres, rates notices, newsletters, social media, radio ads, cinema ads, brochures emailed to real estate agents, schools, accommodation facilities and signage at boat ramps.

ESC monitors and records extraction from each water source, inflow to WTPs and treated water production. Raw and treated water quality are also monitored and recorded. River flow is recorded from gauging stations on the Tuross River, Deua/ Moruya River and Buckenboura Rivers in accordance with the Water Sharing Plans. Deep Creek Dam water level is monitored and record daily (data available since 2010). The Tuross River aquifer level is not monitored.

## Deep Creek Dam

The water level in Deep Creek Dam, DCD restriction triggers, rainfall in the catchment and DCD demand (direct to reticulation until 2011 or NWTP inflow since 2011) are shown on Figure 31 (since 2002). The dam performance and restrictions imposed during the droughts of 2002/03, 2004/05, 2006/07, 2009/2010 and 2018-20 are shown on Figure 32 to Figure 36 respectively.

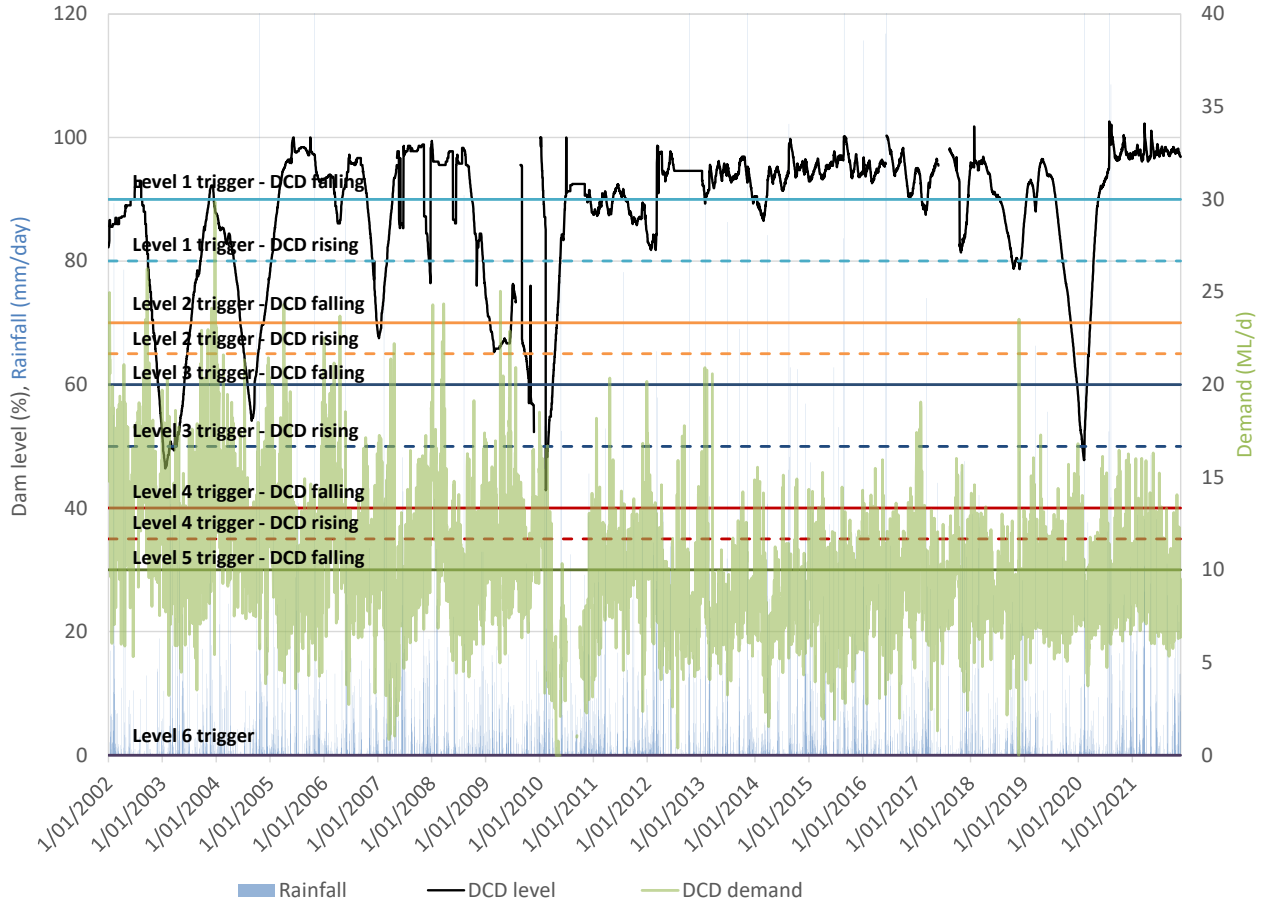


**Figure 31: Deep Creek Dam water level, rainfall, demand and restriction triggers since 2002**

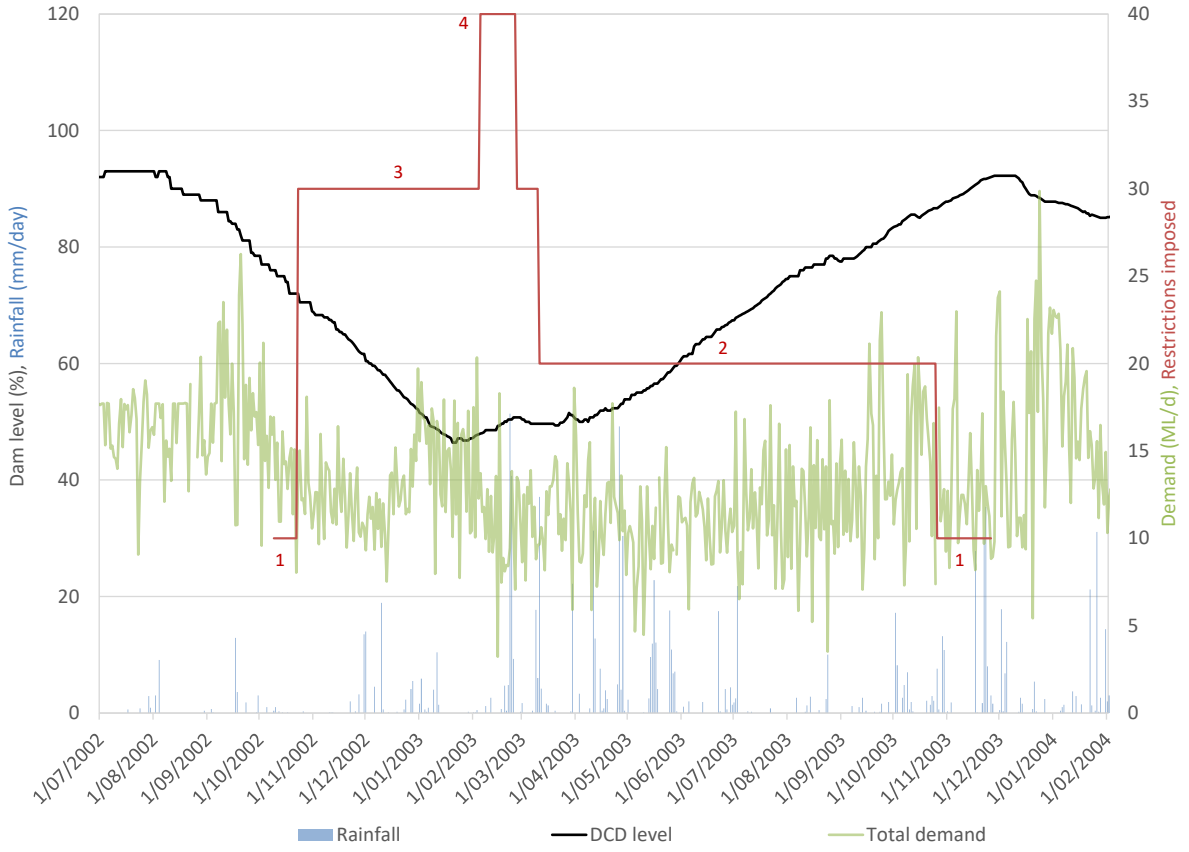


**Figure 32: Deep Creek Dam water level, rainfall, demand and restrictions imposed – 2002/03**

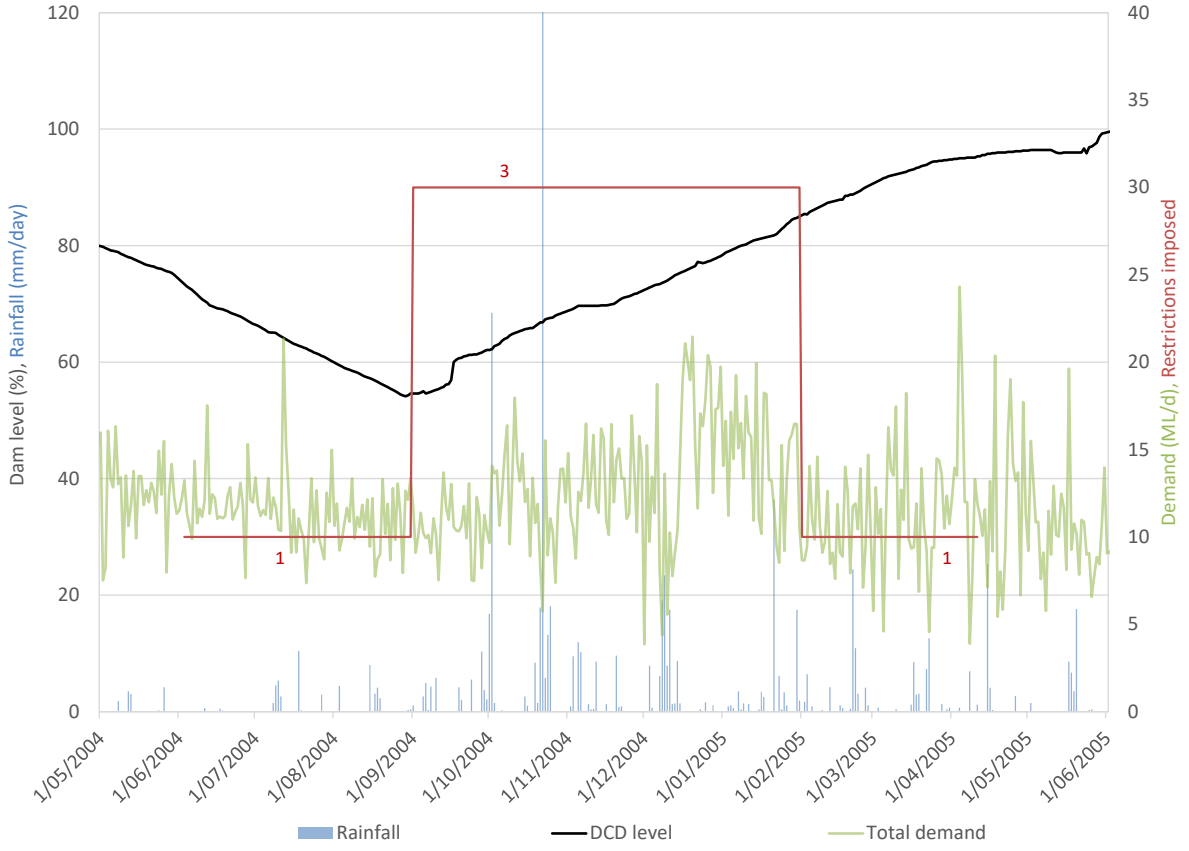


**Figure 33: Deep Creek Dam water level, rainfall, demand and restrictions imposed – 2004/05**

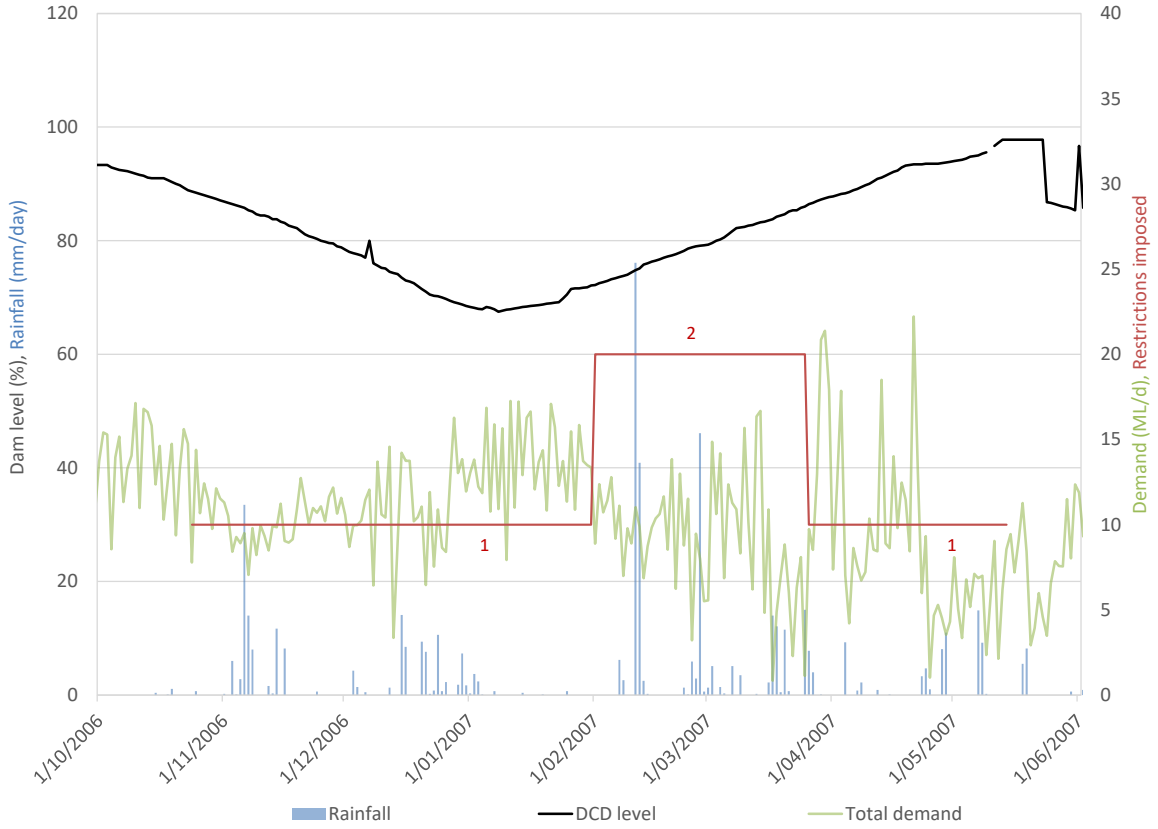


**Figure 34: Deep Creek Dam water level, rainfall, demand and restrictions imposed – 2006/07**

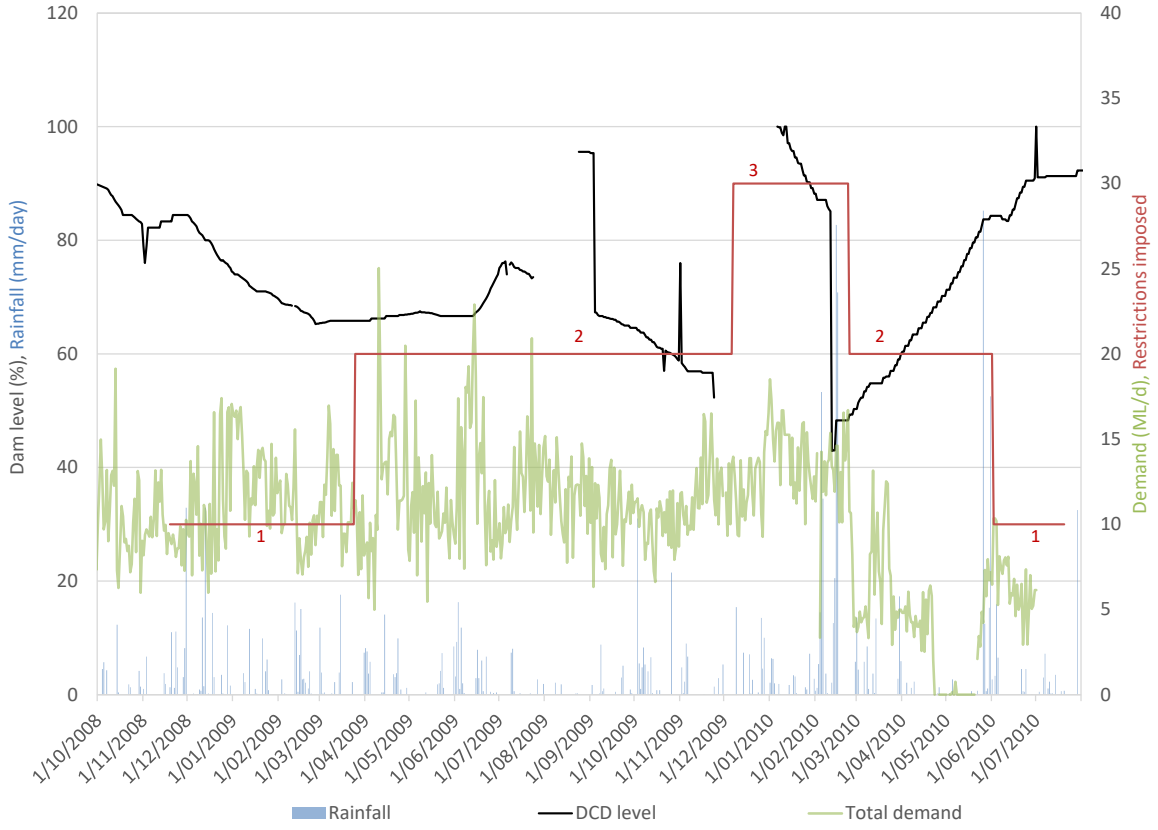


**Figure 35: Deep Creek Dam water level, rainfall, demand and restrictions imposed – 2009/10**

Some Deep Creek Dam level data are not available.

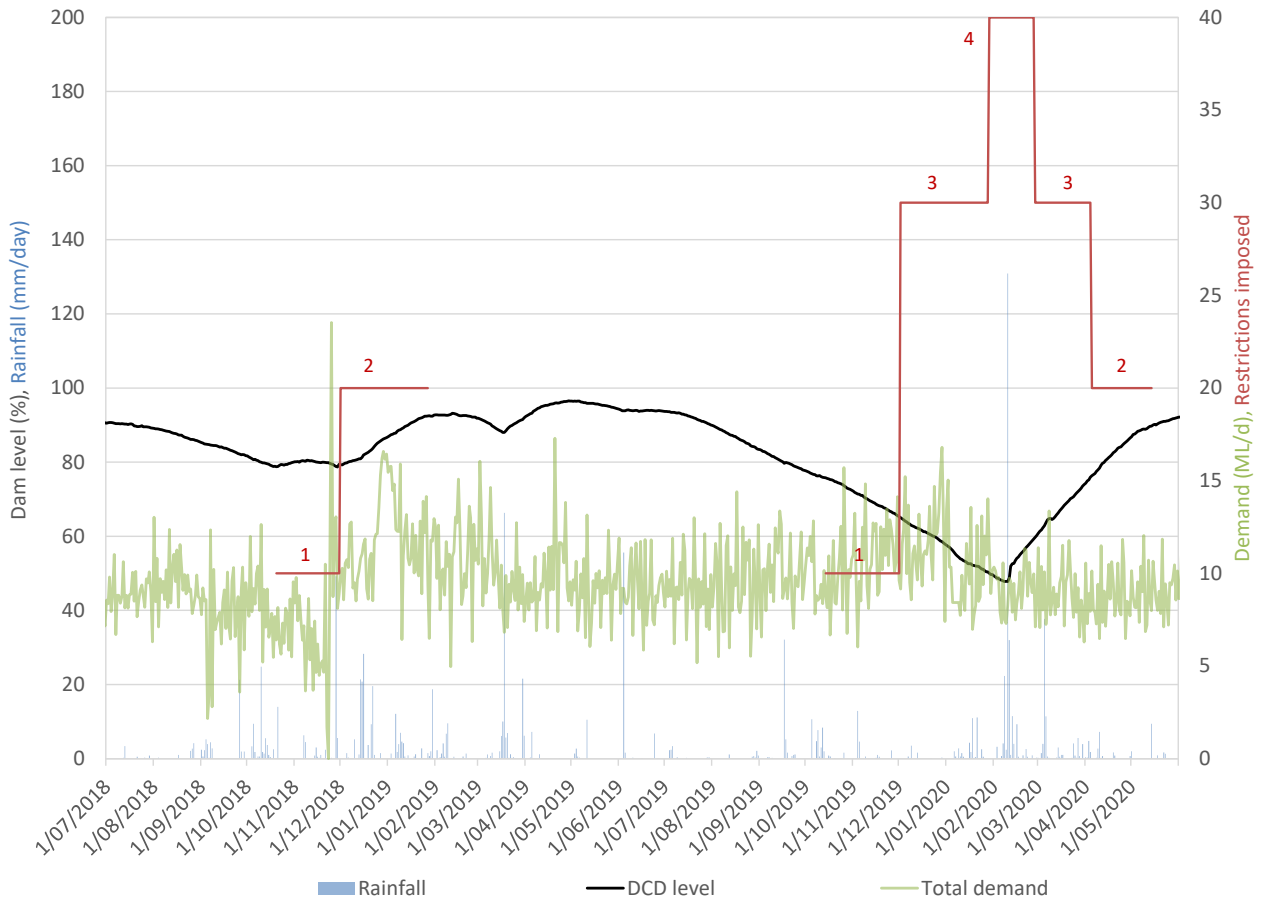


**Figure 36: Deep Creek Dam water level, rainfall, demand and restrictions imposed – 2018-20**

## Stream flows

Stream flows are recorded at the following gauging stations (reference points for Water Sharing Plan extraction rules):

- Buckenboura River at Buckenboura no. 3 (216009), 35.71˚S, 150.04˚E, 181.3 m (water source not currently used).
- Deua River at Riverview (217007), 35.91˚S, 150.01˚E, 15.3 m.
- Tuross River at Eurobodalla (218008), 36.13˚S, 150.00˚E, 1.2 m.

The available stream flow data and water sharing plan extraction rules are shown in the following figures.

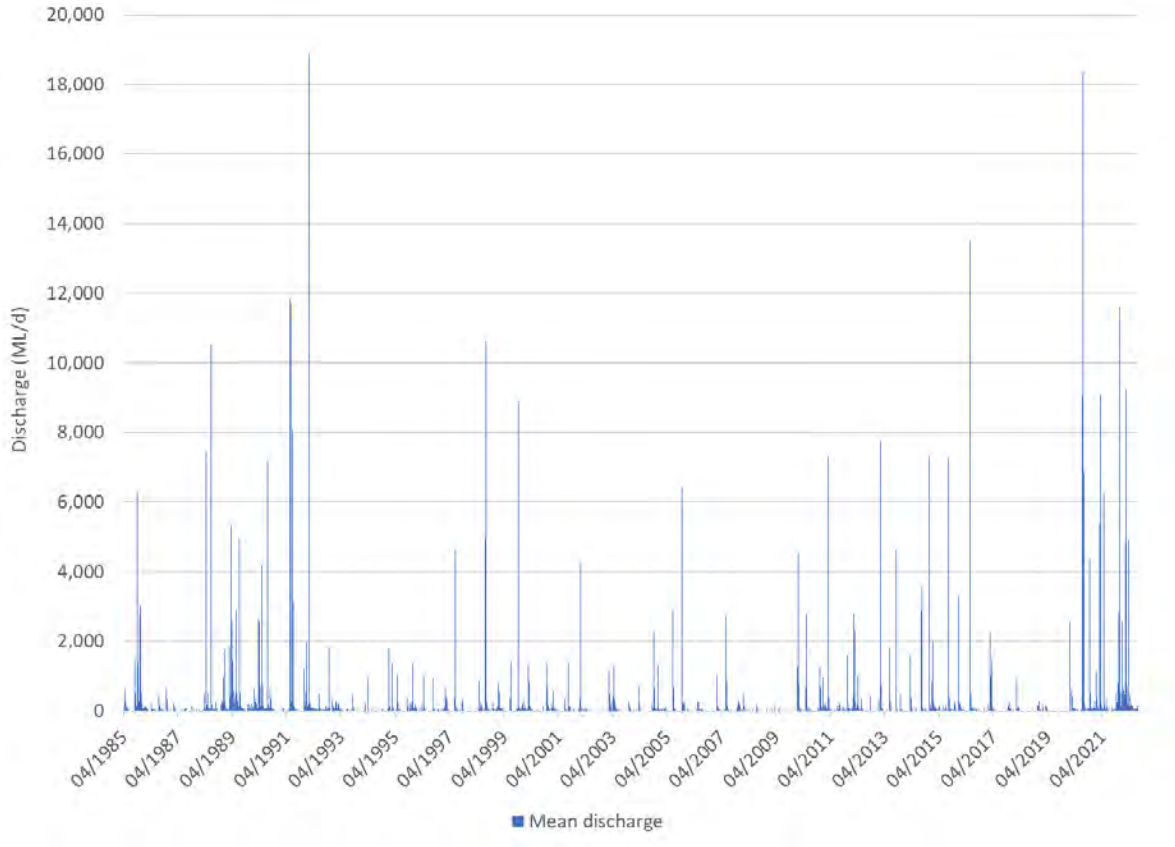


**Figure 37: Stream flow recorded at Buckenboura no. 3 (216009)**

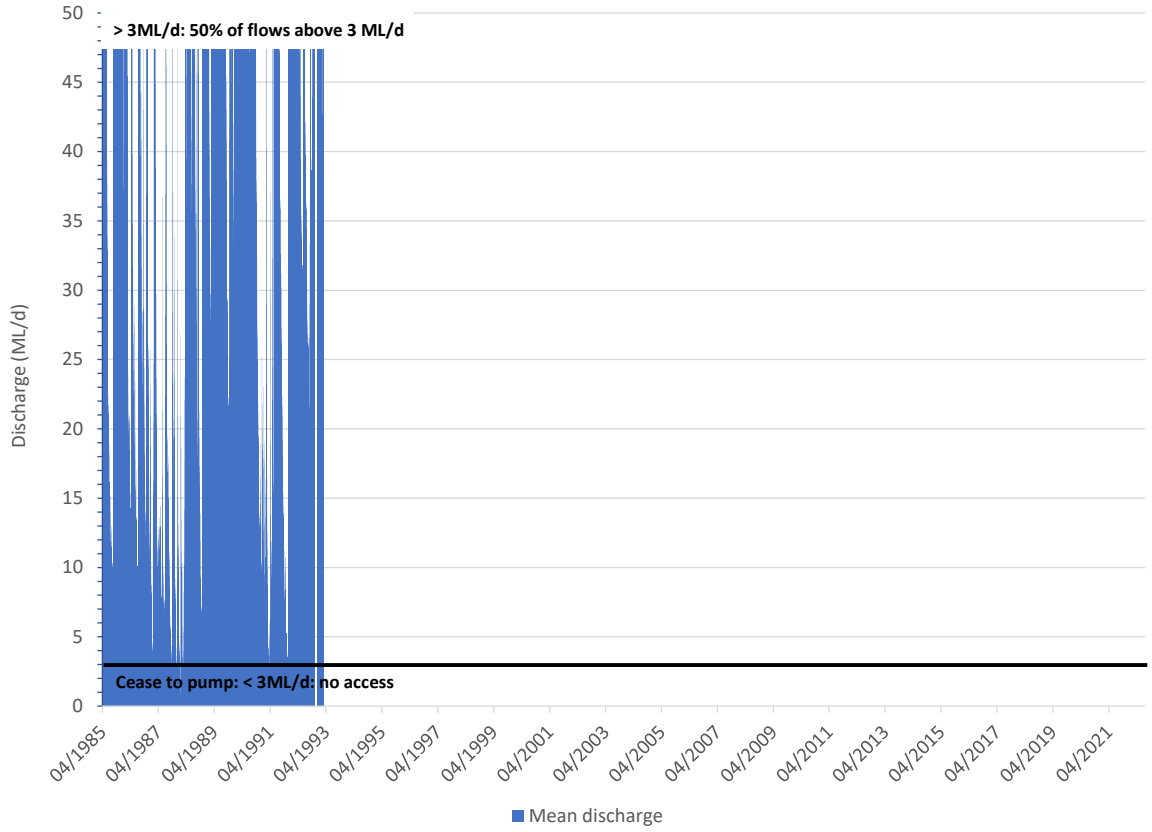


**Figure 38: Stream flow (< 50 ML/d) recorded at Buckenboura no. 3 (216009) and water sharing plan extraction rules**

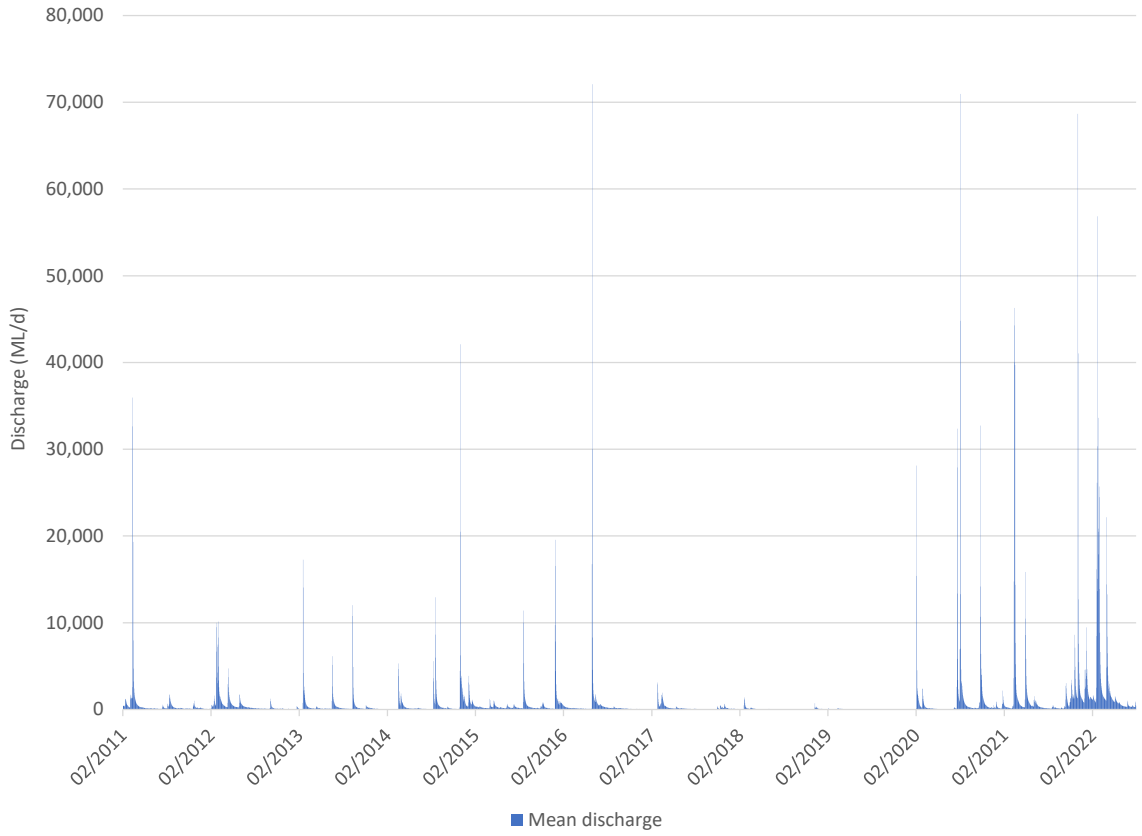


**Figure 39: Stream flow recorded at Riverview, Deua River (217007)**

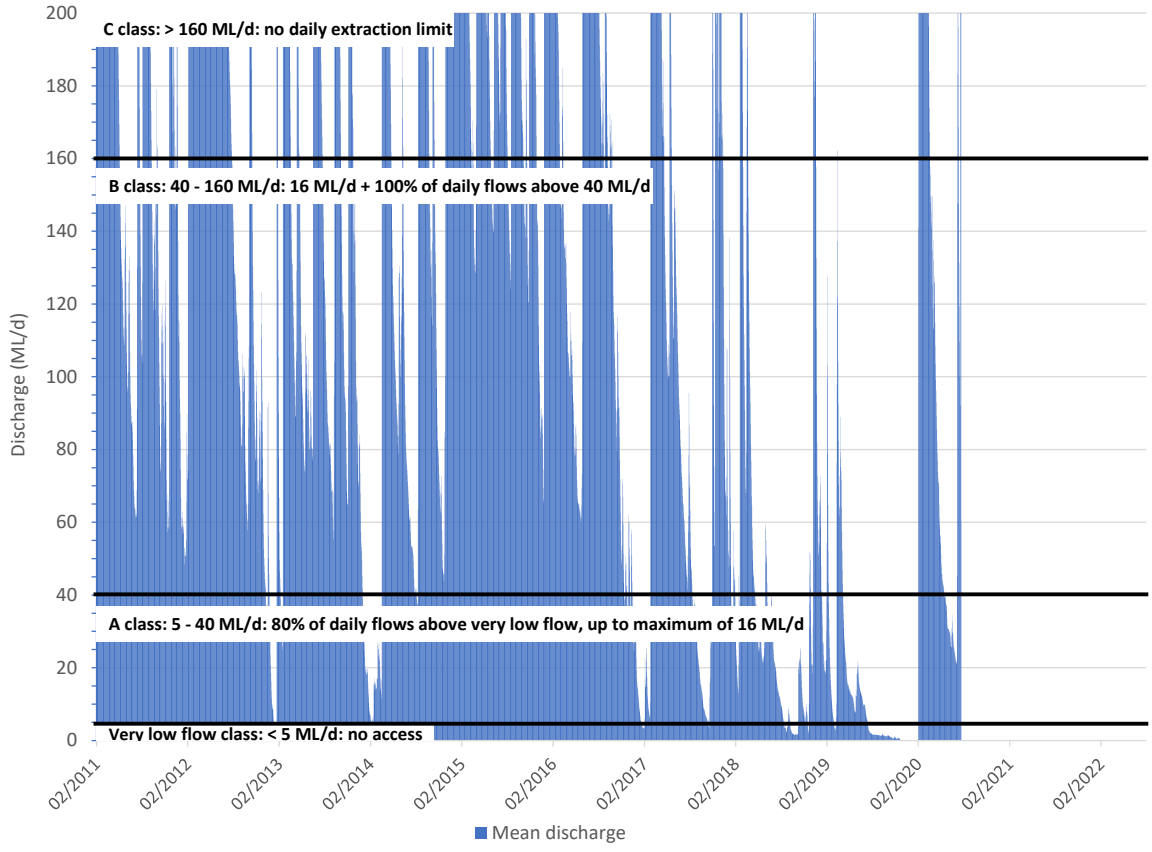


**Figure 40: Stream flow (< 200 ML/d) recorded at Riverview, Deua River (217007) and water sharing plan extraction rules**

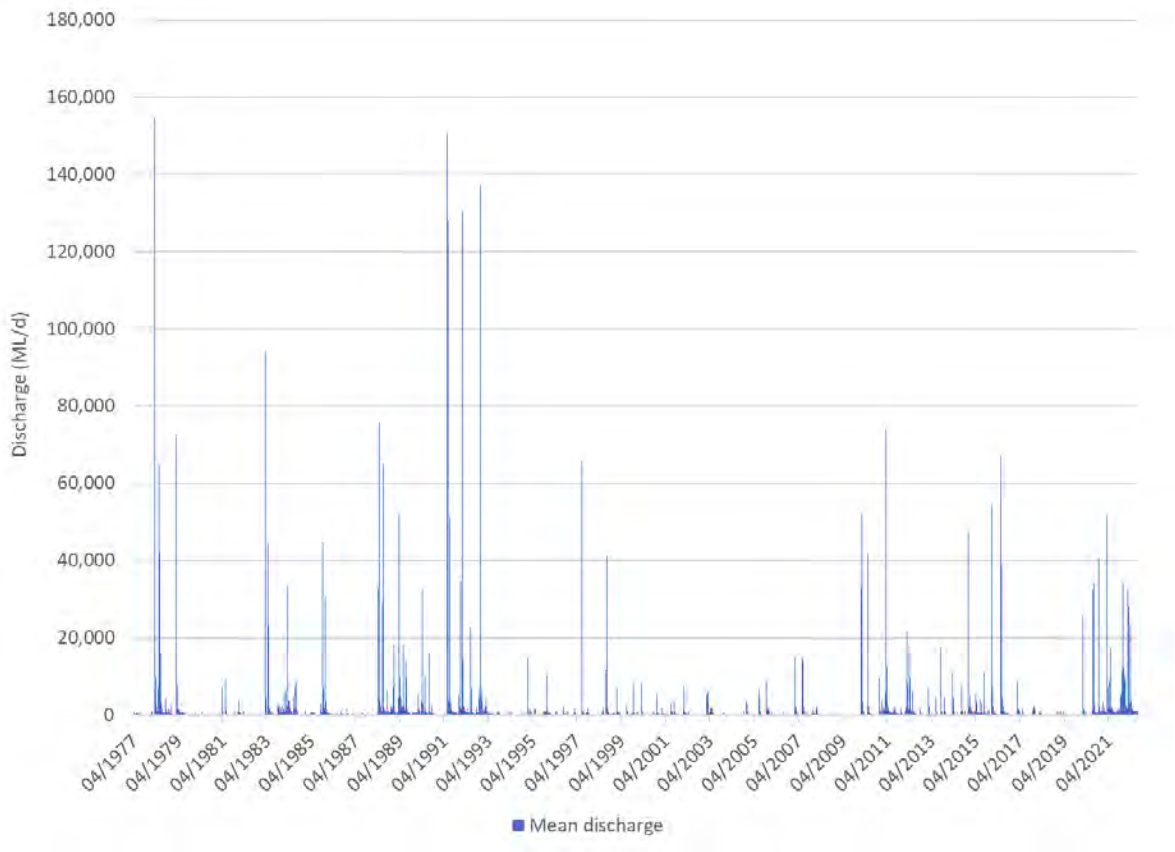


**Figure 41: Stream flow recorded at Eurobodalla, Tuross River (218008)**

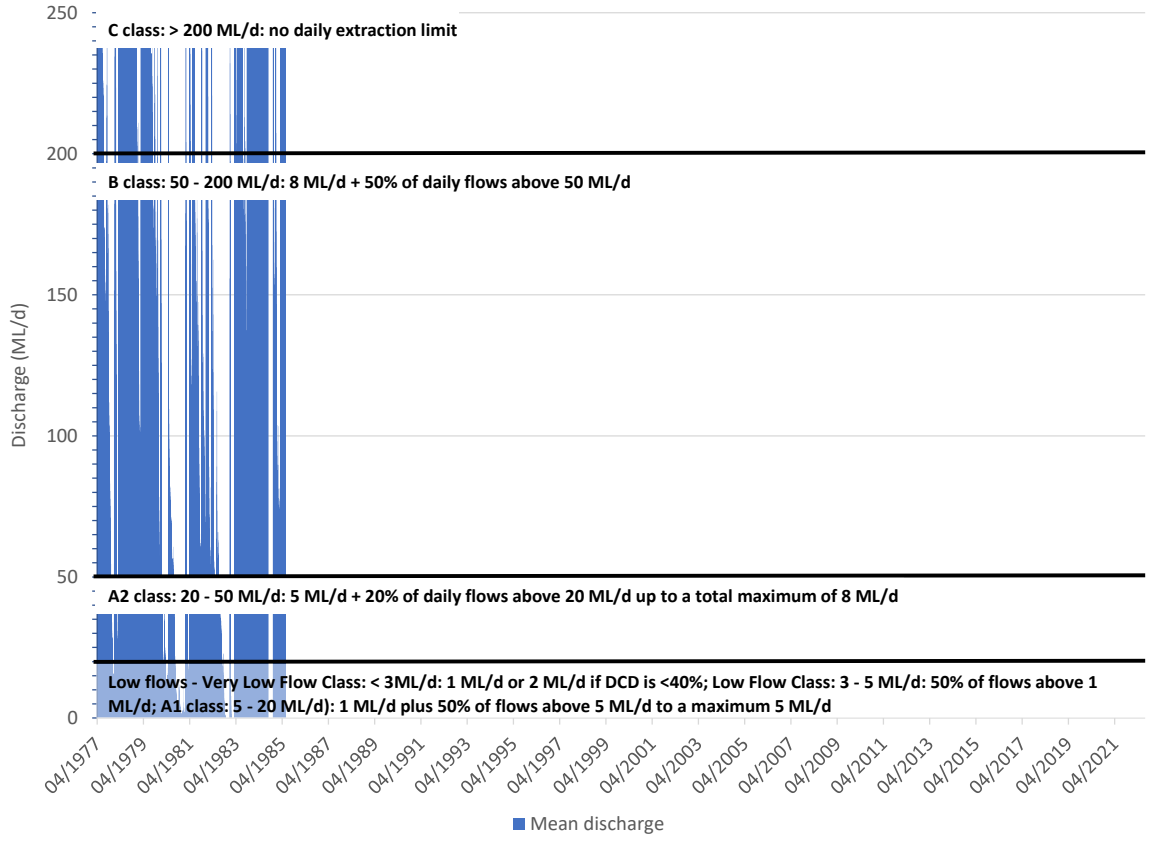


**Figure 42: Stream flow (<250 ML/d) recorded at Eurobodalla, Tuross River (218008) and water sharing plan extraction rules**

Restrictions were implemented from October 2018 (Table 7) due to the low flows in the Moruya/Deua River (Figure 40), reduced dam level (<85%) and the onset of summer and the tourist season. Similarly, from October 2019, due to very low river flows (<5 ML/d) with no extraction to fill the dam since July 2019, level 1 restrictions were introduced and continued over the summer tourist season (level 3). Consumption increased in January 2020 due to the bushfires, and due to a long-term forecast for a drier than average autumn/winter, restrictions were increased to level 4. Rainfall during February 2020 restored stream flows and pumping to Deep Creek Dam and restrictions were lowered to level 3 then level 2 and removed in May 2020.

The ability to extract water from the Moruya/Deua River to fill Deep Creek Dam and the Tuross River aquifer to supply the SWTP is constrained during low river flows and the associated water sharing plan rules. Between January 2017 and June 2022, there were significant periods of time the Deua River flows were in the very low flow class for 283 days (14% of the time) and A class for 502 days (25% of the time), particularly during 2019/20 (Figure 40). In the same period, the Tuross River flows were in the very low flow class for 158 days (8% of the time), low flow class for 26 days (1% of the time), A1 class for 88 days (4% of the time) and A2 class for 245 days (12% of the time). Higher stream flows are available from the southern system (Tuross River) than the northern system (Moruya/Deua River).

## 5.2 Security of Supply

Water security is achieved if the “secure yield” of a water supply is at least equal to the unrestricted dry year annual demand. The capacity of the treatment and distribution infrastructure must also be able to cater for the required demand.

The current NSW Security of Supply Methodology has been in use for over 25 years and modelling approaches have been developed to determine the secure yield based on this methodology. The security of supply methodology has been designed to cost-effectively provide sufficient storage capacity to allow a water utility to effectively manage its water supply in future droughts of greater severity than experienced over the past 100 or more years. ‘Secure yield’ is now defined as the highest annual water demand that can be supplied from a water supply headworks system while meeting the ‘5/10/10 design rule’. This rule dictates that water restrictions must not be too severe, not too frequent, nor of excessive duration, hence under the NSW Security of Supply requirement, water supply headworks systems are normally sized so that:

a) Duration of restrictions does not exceed 5% of the time and

b) Frequency of restrictions does not exceed 10% of years (i.e. 1 year in 10 on average) and

c) Severity of restrictions does not exceed 10% - systems must be able to meet 90% of the unrestricted dry year water demand (i.e. 10% average reduction in consumption due to water restrictions) through simulation of the worst recorded drought, commencing at the time restrictions are introduced.

This enables water utilities to operate their systems without restrictions until the volume of stored water approaches the restriction volume. If at this trigger volume, the utility imposes drought water restrictions which reduce demand by an average of 10%, the system would be able to cope with a repeat of the worst recorded drought, commencing at that time, without emptying the storage. Water security is achieved if the secure yield of a water supply is at least equal to the unrestricted dry year annual demand (NSW Office of Water, 2013).

Estimating the yield of a headworks system involves two stages:

- Stream flow estimation: Developing an appropriate sequence of stream flows for the water sources.
- System behaviour modelling: Modelling the behaviour of the headworks system subject to operating constraints using the stream flows to assess what demand subject to reliability or security criteria can be satisfied.

Consideration also needs to be given to possible impacts of climate change. Draft *Guidelines on Assuring Future Urban Water Security* (NSW Office of Water, 2013) provide guidance to NSW local water utilities on assessing and adapting to the impact of variable climatic patterns on the secure yield of urban water supplies. The methodology in these guidelines enables local water utilities to estimate their future secure yield taking into account the expected impact of future climatic patterns.

Determining the impact of climate change on the secure yield of a water supply system involves two modelling steps:

- Modification of daily rainfall and evapotranspiration data and calibrated rainfall-runoff models to produce climate-changed daily stream flows.
- The daily climate-changed streamflow, rainfall and evapotranspiration are input into the water supply system simulation models to determine climate-changed secure yields.

The methodology has been developed from a pilot study which involved undertaking hydrological and system modelling to determine the impact of climate change on secure yield. The pilot study incorporates the scientific logic of the CSIRO's Murray Darling Basin Sustainable Yields Project which used daily historical data from 1895 to 2006 and applied the relevant Global Climate Models (GCMs) to provide projected climate changed data for each GCM for this period. The rainfall-runoff model is used to estimate daily stream flows for each GCM and for the historical data provided with the GCM data. The current system simulation model is used to determine the secure yield for each of the 15 GCMs, as well as for the above historical data with the 5/10/10 design rule.

Whilst the 15 GCMs represent a range of plausible climate futures, there is some uncertainty which needs to be acknowledged when considering the full range of possible outcomes. The secure yield is determined for all 15 GCMs under the 5/10/10 design rule as well as the secure yield for the GCM with the lowest yield for a more severe restriction regime (10/15/25). The guidelines require consideration of results for:

- GCM with the median secure yield under the 5/10/10 design rule.
- GCM with the lowest secure yield under the 5/10/10 design rule.
- GCM with the lowest secure yield under the 10/15/25 design rule.

The water supply augmentation approach in the 2016 IWCM strategy was developed based on data from the forecast average dry year demand from NSW Public Works (2014a) and the secure yield of the headworks from NSW Public Works (2013a). The adopted secure yield (Case 4 from NSW Public Works, 2013a) was based on the rules documented in the draft Water Sharing Plans for *Clyde River Unregulated and Alluvial Water Sources, Deua River Unregulated and Alluvial Water Sources* and *Tuross River Unregulated and Alluvial Water Sources* and the current security of supply methodology (5/10/10 rule) for current and future (2030 and 2060) conditions assuming 1 degree and 2 degree warming due to climate change. Based on these data, the existing supply was expected to be sufficient to meet demand until 2020. To augment the

system supply, the 2016 IWCM strategy included the provision of an additional water storage (3 - 4 GL) in the south of Shire (filled from high flows in Tuross River) to maintain supplies during drought periods and a transfer system to transfer water from south to north. The strategy also included actions to modify, upgrade and optimise the SWTP to ensure the supplied water met ADWG on a continuous basis, with a long-term view to replace the SWTP and to upgrade the NWTP.

A re-assessment of the secure yield was undertaken by NSW Urban Water Services (2021a; 2021b; 2021c). NSW Urban Water Services (2021a) used daily rainfall and evapotranspiration data for the 15 GCMs obtained by scaling the historical data (available between 1895 – 2008) for the Year 2030 A1B warming scenarios (mid-range emissions scenarios). The study found that the secure yield with the historic climate is highly influenced by the 2008 - 2010 critical drought and also the recent 2019 - 2020 drought and the secure yield is in effect constrained by the river flows. However, these last two severe droughts were not considered as they are not included in the climate change data sets.

The Guidelines (NSW Office of Water, 2013) do not require 2ºC climate warming to be assessed as the relevant comparable 2ºC climate warming data are no longer provided. However, data for the 2ºC warming scenario were provided for the 2013 yield study and are also used in NSW Urban Water Services (2021a). NSW Urban Water Services (2021a) found that higher secure yields are achieved from the system and the same secure yield is achieved for the historic climate and all the 15 GCMs for 1ºC warming and 2ºC warming. Based on comparison with modelling results for other water supply systems, NSW Urban Water Services (2021a) proposed that a 4 - 10% and 18 - 20% reduction in yield should be applied for the 1ºC and 2ºC climate warming scenarios respectively.

The guidelines (NSW Office of Water, 2013) do not specify the year to apply the yield with the climate experienced over the last 120 years (historic climate), the decline in yield to the projected 1°C climate warming and the decline in yield beyond that time. In the guidelines (NSW Office of Water, 2013), the 1ºC warming (assumed to occur at 2030) relates to changes from 1990 climate (i.e. 40 years of climate warming by 2030) with 2ºC warming assumed to occur around 2060 (i.e. about 70 years of warming). For the Eurobodalla system, the 2008/10 drought is the critical drought defining the secure yield and the 2019/20 drought would also have been impacted by climate warming. NSW Urban Water Services (2021a) suggests that the yield with 1ºC warming is applicable at 2040 and potentially 2050 and the 2ºC warming would occur further into the future. Based on this advice, the following assumptions have been made for the Eurobodalla water supply system:

- The secure yield with the current climate is assumed to represent the available supply in 2010 (the critical drought).
- The secure yield with projected 1°C climate warming is assumed to represent the available supply in 2050 (as the climate warming data has been imposed on the 2010 drought in the secure yield modelling and 1°C climate warming is expected to occur in 40 years).
- The secure yield with projected 2°C climate warming is assumed to represent the available supply in 2080 (30 years after the 1°C climate warming).

To provide a conservative estimate of secure yield, the secure yield results are assumed to represent the historic climate (at 2010) and reduced due to climate warming by 10% at 2050 and by 20% at 2080. The yield is assumed to reduce at a linear rate over time.

### 5.2.1 Security of existing system

A comparison between historic demand and dry year demand and the secure yield of the existing system with and without the 3,120 ML southern storage (adopted in the 2016 IWCM Strategy) is provided on Figure 43. Based on the definition of water security (above), the system is not currently secure. Once operational, the southern storage will increase the yield by 587 ML/a (with historic climate). The system will require additional augmentation to be considered secure from approximately 2031. The yield deficit at 2050 with the 3,120 ML southern storage will be 720 ML/a.

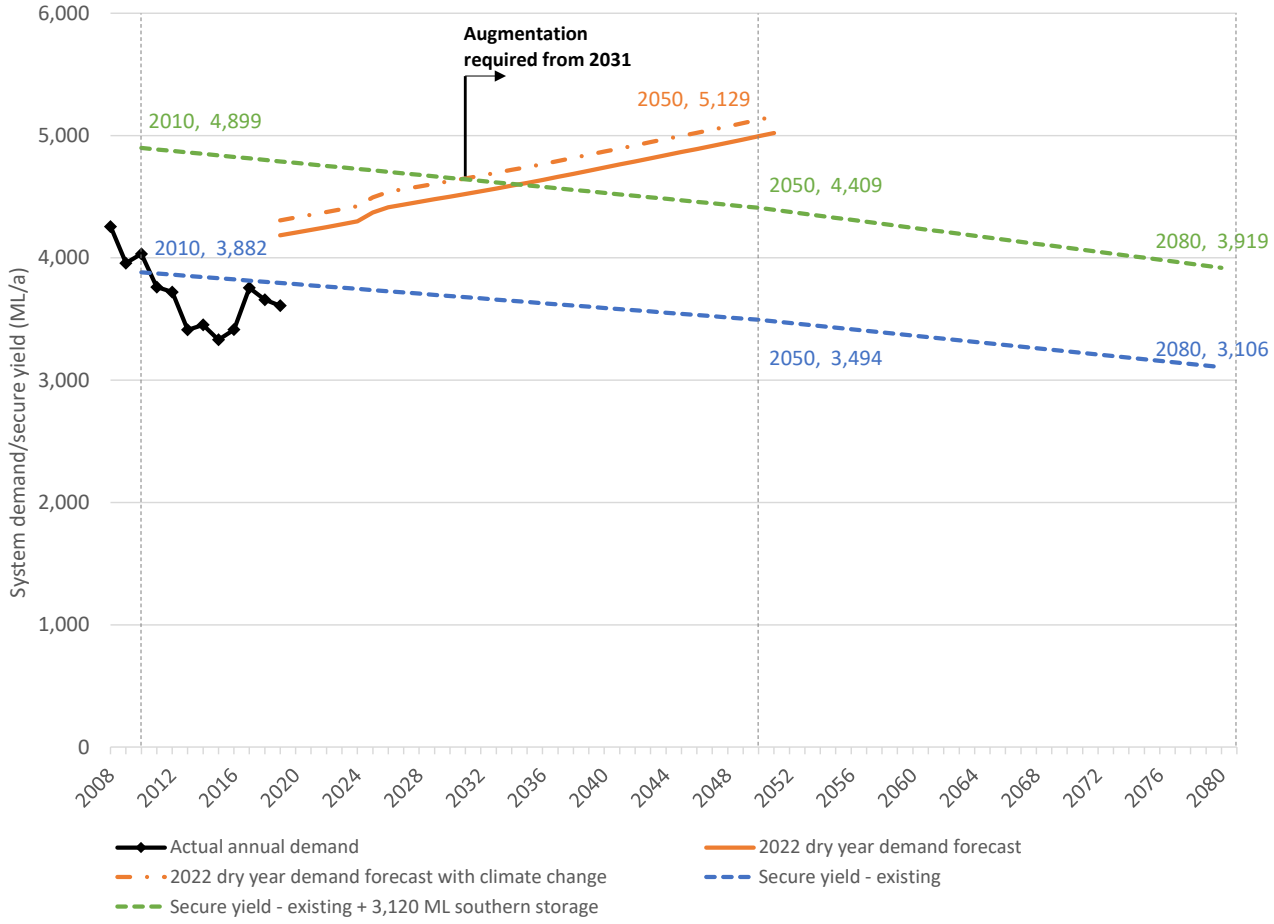


**Figure 43: Comparison of forecast dry year demand and secure yield for the existing system**

Source: Hydrosphere Consulting (2021) updated with PWA (2022a)

### 5.2.2 Secure yield of augmentation options

The revised secure yield assessment (NSW Urban Water Services, 2021a) provides secure yield estimates for the climate experienced over the last 120 years for various supply augmentation options (shown green on Figure 44) including:

- Reinstatement of the Buckenboura River source (4 ML/d).
- The new southern storage (3,120 ML as planned or capacity increased to 8,000 ML).
- Raising of Deep Creek Dam spillway by 1.5 m to provide a storage volume of 5,600 ML (additional 700 ML).
- Increased capacity of the NWTP to 30 ML/d.

- Replacement (and varied increased capacity) of the SWTP (7 - 30 ML/d).
- Varied capacity of the transfer from south to north (5 - 24 ML/d). The augmented system would supply additional demand from the south with the southern system extended to include the Tomakin/ Broulee region as shown on Figure 44.

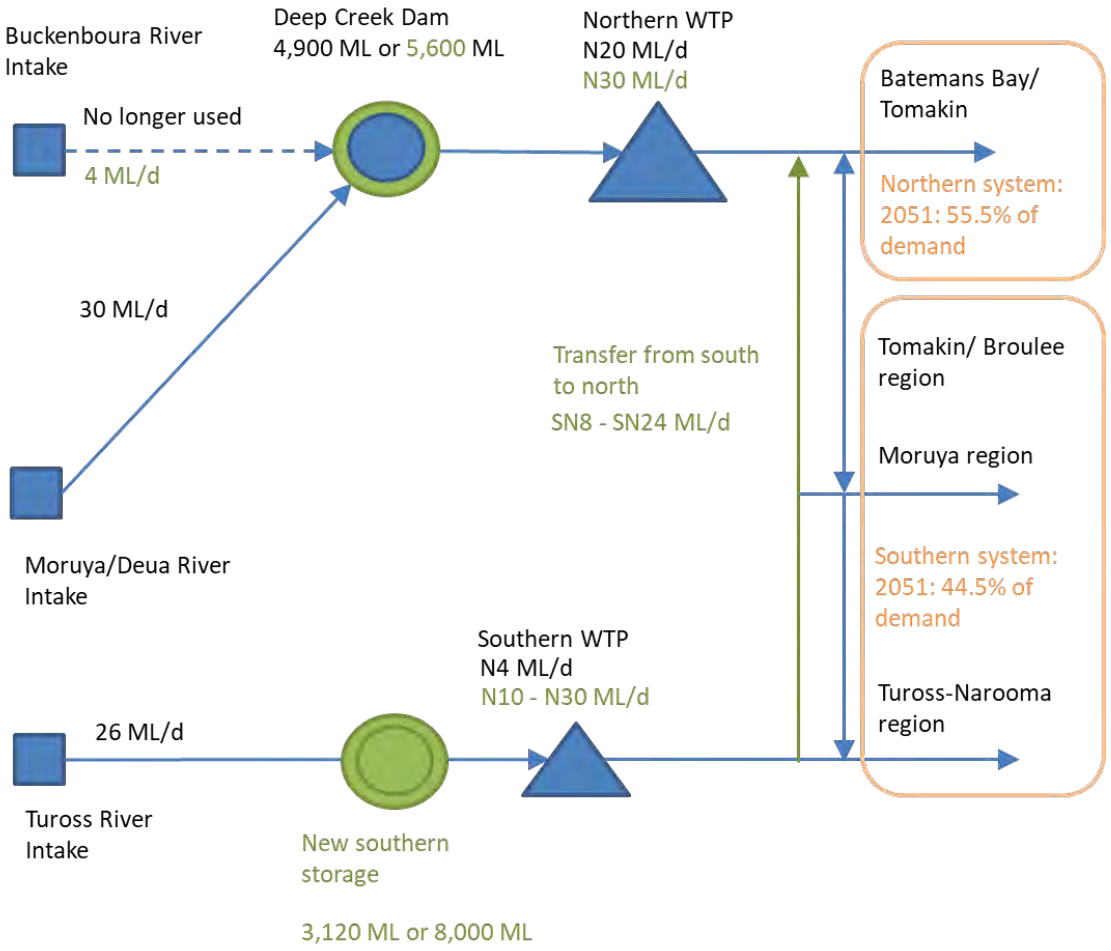


**Figure 44: Augmentation options considered in the 2021 yield study (green) and sub-system demand**

The *Water Sharing Plan for the Tuross River Unregulated and Alluvial Water Sources, 2016* allows ESC to extract flows below 20 ML/d (A1 class) as shown on Figure 42. NSW Urban Water Services (2021a; 2021b) also modelled the change in secure yield if low flows were not extracted from the Tuross River for very low, low and A1 class flows. Without the extraction of the low river flows, the yield would decrease by 515 – 581 ML/a.

## 5.3 Water Supply Augmentation Strategy

### 5.3.1 Preferred strategy

Based on the results from the recent secure yield assessment (NSW Urban Water Services, 2021a; NSW Urban Water Services, 2021b) a preferred augmentation strategy was developed considering the following factors (Hydrosphere Consulting, 2021):

1. The minimum NWTP or SWTP capacity to serve the entire Shire demand in the event of an emergency or during shutdown maintenance.
2. The yield benefit of each option.
3. The proportion of the Shire's demand in the north and south systems.

ESC has received grant funding from the NSW and Federal Governments for the construction of the 3,120 ML southern storage. The funding from the Federal government is contingent on ESC forgoing access to low flows in the Tuross River (< 20 ML/d) to provide benefits to downstream users. Therefore, the preferred augmentation scenario includes the following:

- Construction of the 3,120 ML southern storage (commenced in 2022).
- Reduced access to low flows in Tuross River.
- Raising of Deep Creek Dam by 1.5 m (to offset the reduced yield due to reduced access to low flows in Tuross River).
- Increasing the capacity of the SWTP and providing for the transfer of flows from the southern to northern systems (to achieve the required sub-system and system yield).

The preferred augmentation strategy consists of stages as follows (Figure 45):

- Stage 1 of the augmentation strategy (the 3,120 ML southern storage) is expected to be constructed by 2024 and operational by 2026 allowing two years for filling of the storage.
- Stage 2 of the strategy will include an increase in the SWTP capacity to 12 ML/d (to allow for modular design and supply emergency demand) with provision for transfers from south to north of 8 ML/d (to be completed by 2029).

Stage 1 and 2 will meet the demand until approximately 2070 based on revised demand forecasts (PWA, 2022a). Demand forecasts are not available beyond 2051 and security beyond that year has been estimated on Figure 45.

Increase in the SWTP capacity (e.g. to 18 ML/d) and an increase in transfer capacity to 14 ML/d does not significantly increase the secure yield as the system is constrained by the available storage. However, a 25-year WTP mechanical/electrical upgrade and renewals will be required by 2054 and an increase in capacity will be implemented at that time to provide for the Stage 4 augmentation of the transfer system to 14 ML/d and future increase in capacity of the southern storage to 8,000 ML (at approximately 2070).

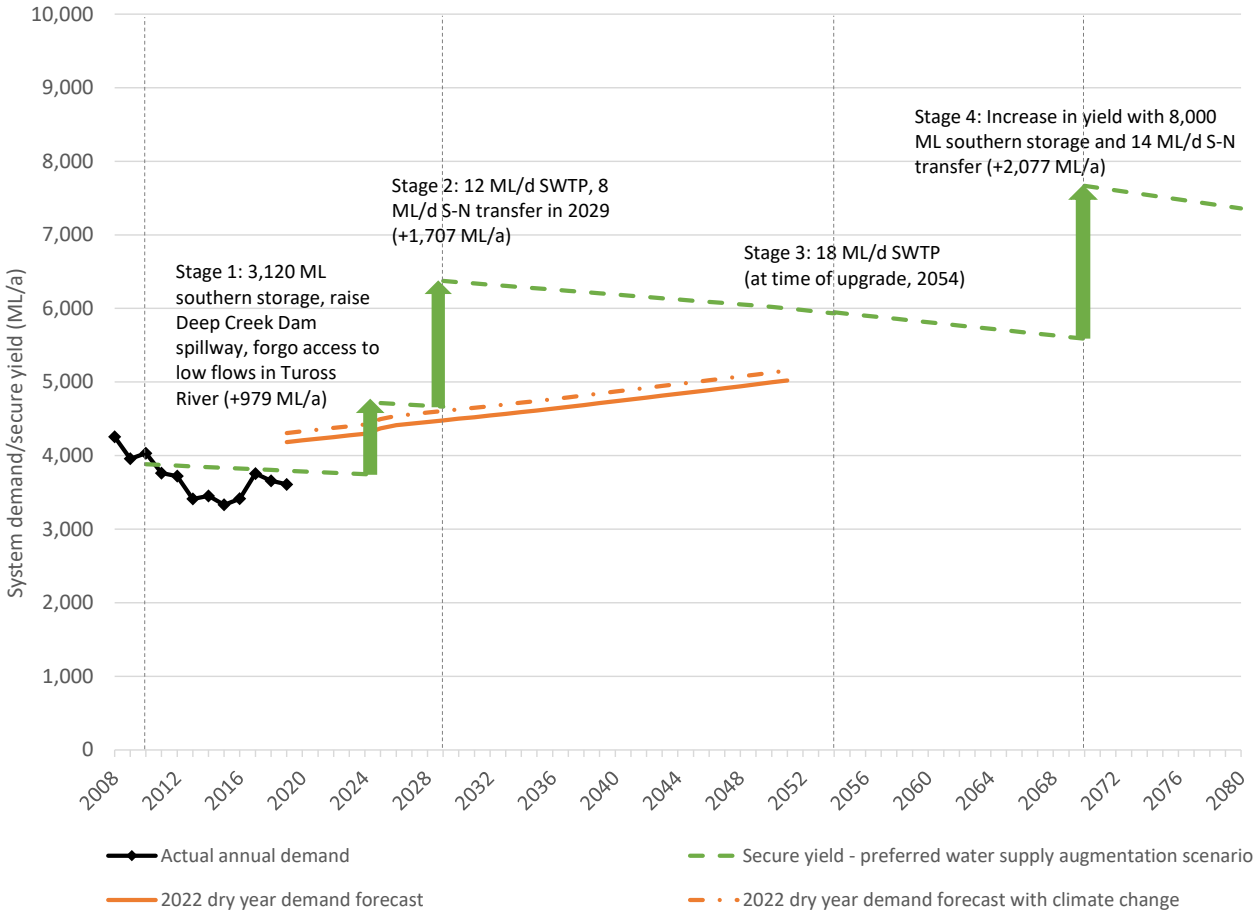


**Figure 45: Comparison of forecast dry year demand and secure yield for staged augmentation scenario**

Source: Hydrosphere Consulting (2021) updated with PWA (2022a)

The secure yield modelling also determined the demand requirements of the southern and northern systems (Figure 44). The SWTP is required to service the southern parts of the system to Mossy Point reservoir which will be the future supply arrangement during off-peak periods (refer Section 5.5).

A nominal 12 ML/d SWTP will be sufficient to supply the restricted demand of the Shire at 2025, upgraded to 18 ML/d after 25 years. The minimum NWTP or SWTP capacity to serve the Shire demand during winter (8.5 ML/d at 2025 and 11.5 ML/d at 2050) will be achieved with this WTP augmentation strategy to allow either of the WTPs to be taken off line for maintenance (Hydrosphere Consulting, 2021). The WTP capacity upgrades with the staged augmentation scenario are compared to the PDD forecast for the entire Shire on Figure 46. Upgrade of the NWTP mechanical and electrical components will be required by 2036 and 2061 (every 25 years). The NWTP will be replaced in 2086 at the end of its design life (75 years).

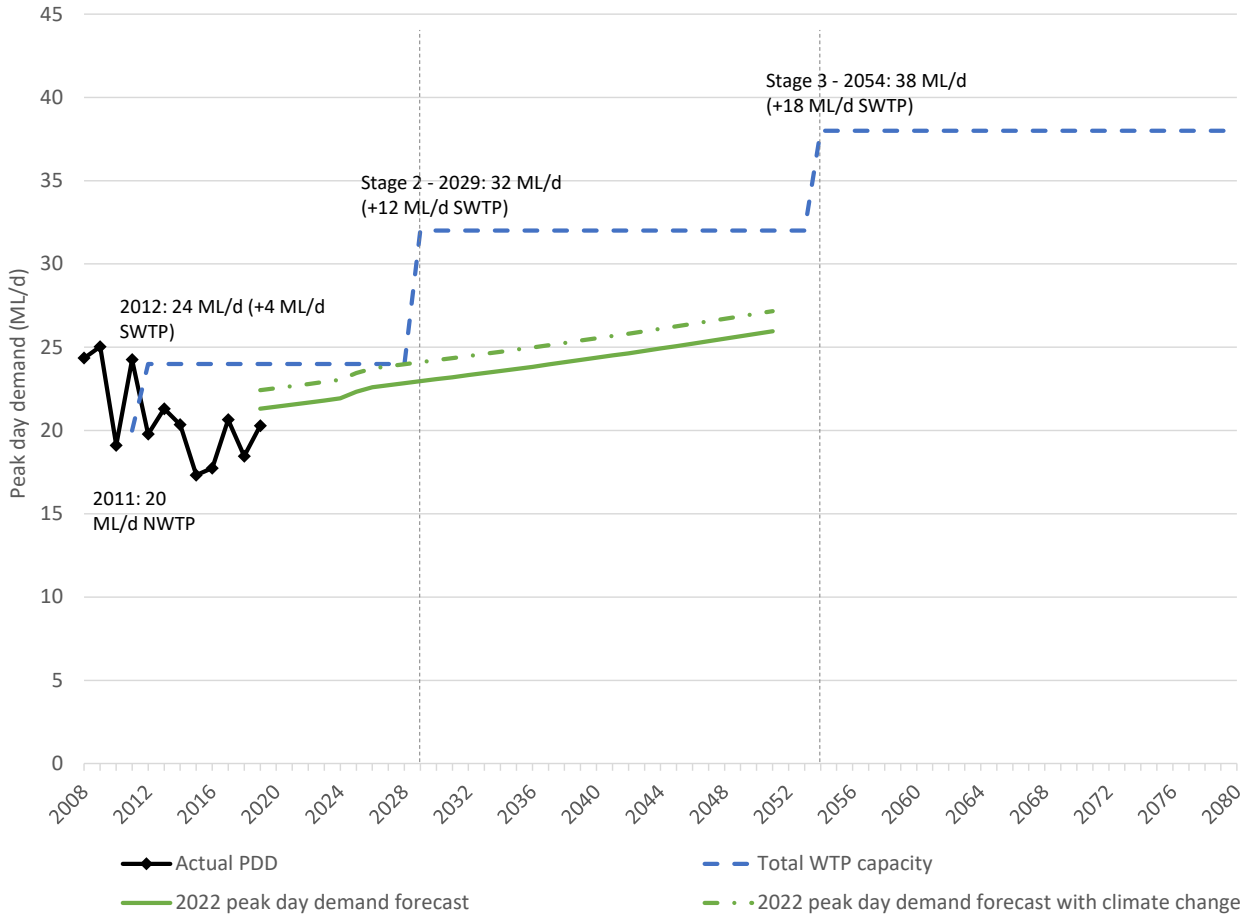


**Figure 46: Comparison of forecast peak day demand and WTP capacity for staged augmentation scenario**

Source: Hydrosphere Consulting (2021) updated with PWA (2022a)

Once the 3,120 ML southern storage is constructed, a new SWTP and the south to north transfer system are in place, the areas south of Mossy Point reservoir can be supplied from the SWTP (which will function throughout the year). The balance of the demand will be transferred as far as possible northwards based on expected yield and demand of each sub-system (refer Section 5.5).

### 5.3.2 Components of the water supply augmentation strategy

#### Southern storage

A concept design for the southern storage was completed in 2017 for a 3,120 ML off-stream storage facility (SMEC, 2017). The project has been assessed as a State Significant Development and assessment and development consent has been granted for the construction of the dam. Construction commenced in late 2022. The southern storage will be located approximately 30 km south of Moruya on an unnamed third order ephemeral stream about 950 m east of the Tuross River, within the Tuross River catchment (Figure 47).

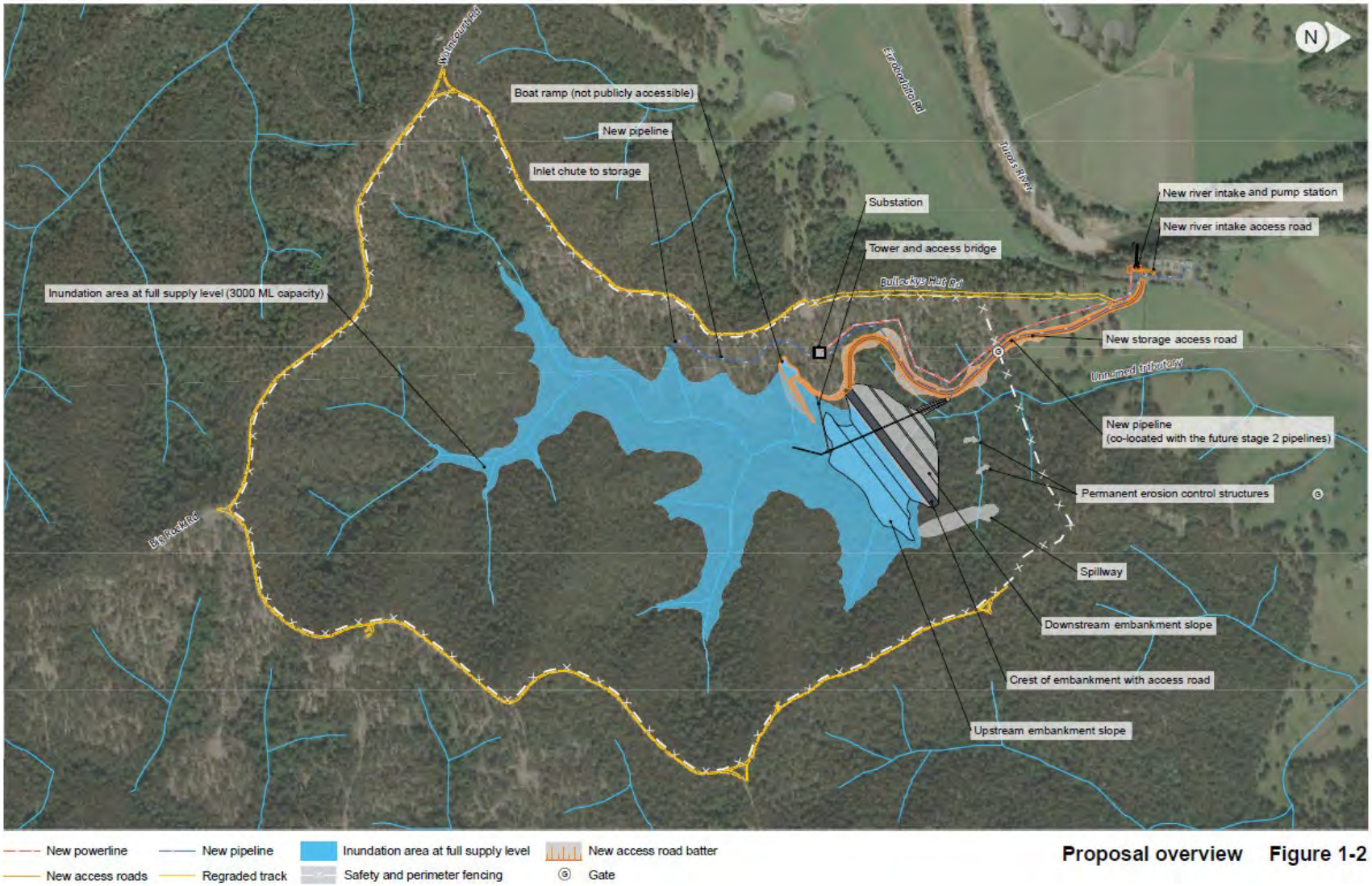


**Figure 47: Overview of southern storage**

Source: SMEC (2018)

Design details are provided in SMEC (2017a: 2017b). The majority of the storage site is within the Bodalla State Forest and road access to the site will be via Eurobodalla Road. Raw water will be extracted from the Tuross River from a new river intake pump station and an existing borefield for transfer to the new water storage facility. Water will be pumped from the Tuross River to the water storage facility in accordance with the *Water Sharing Plan for the Tuross River Unregulated and Alluvial Water Sources 2016* with no access to low river flows. As water will be selectively withdrawn from the Tuross River depending on flow conditions, environmental stress on the Tuross River system will be minimised. Council will seek a supplementary water extraction licence to fill the dam (currently limited to 900 ML/a).

A new river intake pump station was constructed in 2021 with a total river extraction capacity made up of a combination of flows from the river intake (up to 26 ML) and the borefield (up to 6 ML).

#### Deep Creek Dam raising

Technical specifications and detail design drawings have been prepared for a reinforced concrete weir structure on the existing Deep Creek Dam spillway apron to increase the height of the spillway by 1.5 m. This will increase the off-stream storage capacity from 4,900 ML to 5,663 ML. Construction of the spillway modifications are expected to be completed in 2023.

#### Southern water treatment plant

The SWTP will be designed as two 80 L/s (2 x 6.6 ML/d, allowing for backwash wastewater) process streams and will cater for future augmentation with civil works constructed to the ultimate nominal design capacity of 18 ML/d (with an additional 80 L/s process stream providing 19.8 ML/d capacity). The new 12 ML/d SWTP, to be constructed by 2029 while the southern storage is filling, will have a design life of 75 years (replacement by 2100) with upgrade of the mechanical and electrical components every 25 years (at 2054 coinciding with the Stage 3 augmentation to 18 ML/d and at approximately 2079).

#### South to north transfer

Design of the Moruya bypass to facilitate the south to north transfer arrangement will be constructed and the short (1,600 m) section of main from Big Rock reservoir to the Princes Highway will be upgraded to increase capacity by 2029 (Section 5.5).

### 5.3.3 Cost estimates

The Stage 1 and 2 water supply augmentation cost estimates are shown in Table 10 (from design reports and tendered prices). Cost estimates for the Stage 3 and 4 augmentations are also provided.

**Table 10: Preferred water supply augmentation strategy cost estimates**

| Component | Capital cost ($) | Additional recurrent cost ($p.a.) |
|---|---|---|
| *Stage 1 and 2 (to 2029)* | | |
| 3,120 ML southern storage, pumping station and transfer mains | $130 million | $0.15 million |
| Southern WTP (12 ML/d) | $43.0 million | $0.50 million |
| South to north transfer | Included in water main renewal program | Included in trunk main operational budget |
| Deep Creek dam raising | $0.5 million | - |
| Renewals (allowance) | $0.05 million p.a. | |
| Net present value (30 years at 7% discount rate) – Stage 1 and 2 | $141 million | |
| Increase in yield – Stage 1 and 2 | 2,686 ML/a | |
| NPV per kL yield increase | $52 | |
| *Stage 3 (2053 onwards)* | | |
| Augment SWTP to 18 ML/d (as part of scheduled mechanical/electrical upgrade) | $10.0 million | $0.25 million |
| Net present value (30 years at 7% discount rate) – Stage 3 | $13.5 million | |
| *Stage 4 (2070)* | | |
| Increase capacity of southern storage to 8,000 ML | $70.0 million | $0.15 million |
| Net present value (30 years at 7% discount rate) – Stage 4 | $71.8 million | |
| Increase in yield – Stage 3 and 4 | 2,077 ML/a | |
| NPV per kL yield increase | $41 | |

### 5.3.4 Alternative Stage 4 Option – Desalination

ESC also considered desalination as a rainfall-independent method of treating and supplying water that would be of sufficient capacity to provide a secure supply over the longer term. The desalination option was considered as a permanent supply as an alternative to the stage 4 increase in capacity of the southern storage. The use of the desalination supply would be introduced when storage levels in the surface water storages reduces and restrictions are imposed.

A feasibility study (PWA, 2022b) assesses the installation of a sea water reverse osmosis desalination plant adjacent to the Tomakin STP. Key assumptions in the study were:

- The existing Deep Creek Dam and the 3,120 ML southern storage are available for continuous supply but with no inflows (to mimic drought conditions) or losses (i.e. evaporation, infiltration).
- Total dead storage within the dams is 400 ML for inaccessible water with an allowance for emergency firefighting demand (based on a repeat of the 2019/20 Black Summer bushfires).
- The desalination supply is introduced when the combined storage level of Deep Creek Dam and the southern storage reaches 80% (and restrictions are introduced) to supplement the existing supply.
- Dead storage is not reached within four years. A four-year modelling period was selected to give Council time to augment infrastructure further should the drought continue beyond the historical record drought duration of two years.
- 2051 demands are met, considering water restrictions at different dam levels.
- Emergency demand is supplied at Level 6 restrictions plus firefighting demand.

An initial desalination plant capacity of 10 ML/d was selected with ultimate capacity of 15 ML/d to determine the plant footprint and sizing of major pipelines, seawater intake, brine disposal outfall and potable water main connection. The potential site for the seawater intake was nominated as 200 m offshore from Barlings Beach and a potential site for disposal of brine was selected as adjacent to the existing Tomakin STP ocean outfall off Long Nose Point. The study (PWA, 2022c) found that desalination is a technically feasible option to provide a rainfall-independent source of drinking water that would be of sufficient capacity to provide drought-proofing for the Eurobodalla region to 2051 in combination with Deep Creek Dam and the 3,120 ML southern storage. High level costing and financial analysis are shown in Table 11.

**Table 11: Costing and financial analysis – desalination**

| Item | Units | Cost estimate |
|---|---|---|
| Capital expenditure (including contingency) | $ million | 137.8 |
| Operating and maintenance costs (including contingency) | $ million p.a. | 9.72 |
| Net present value (30 years at 7% discount rate) | $ million | 243.8 |
| Increase in required yield – Stage 4 (Table 10) | ML/a | 2,077 |
| NPV per kL yield increase | $ per kL | $117 |

Source: PWA (2022b)

The desalination plant could be located adjacent to the existing Tomakin STP with a three-year construction period.

The desalination option provides an alternative to the Stage 4 augmentation strategy. The preferred strategy (increasing the capacity of the southern storage to 8,000 ML) has a significantly lower capital and operating and maintenance cost (Table 10) compared to the desalination option. Future improvements in desalination process and brine disposal technology and additional knowledge of the impacts of climate change on surface water flows will be considered for future stages of the water supply strategy (approximately 2070 onwards).

### 5.3.5 Emergency Response

The drought management plan (Public Works, 2011) will be updated to reflect the water supply augmentation strategy. A Drought and Emergency Response Contingency Plan (DERCP) will be prepared to document the prevention, preparedness and response measures to ensure the continuity of the water services under emergency scenarios that may be encountered by ESC.

Emergency supply options (e.g. temporary desalination plant, local groundwater supplies or water carting) may be required during prolonged drought if the level in the water storages continues to reduce. These options have not yet been assessed in detail. Each option would require investigation and activation tasks which will be documented in the DERCP.

## 5.4 Treated Water Quality

The 2016 *IWCM Issues Paper* (Hydrosphere Consulting, 2016b) examined reticulated water quality data between 2012 and 2016 and identified that the ADWG values were not always being met. The pH of the reticulated water was above the guideline value on many occasions causing concern due to the potential of corrosion of pipes and fittings. The 2014 *ESC Drinking Water Management System* (DWMS, NSW Public Works and Atom Consulting, 2014) identified a list of actions required to provide best-practice protection of public health in relation to drinking water while consistently meeting the ADWG levels. This included the modification, upgrade and optimisation of the SWTP to ensure the supplied water meets ADWG in the short term with the plan to construct a new SWTP at the site of the new southern storage based on best-practice technologies.

An audit of the DWMS implementation (PWA, 2018a) found that the CCPs were satisfactorily managed during the review period at the NWTP. At the SWTP there were a few occasions when the treatment controls reached critical limits. There were no major water quality incidents or significant customer complaints reported during the review period. The DWMS Improvement Plan was updated following the review (PWA, 2019).

The current DWMS (NSW Public Works, 2019) and its supporting documents and systems (Critical Control Point assessment, Standard Operating Procedures and the Drinking Water Improvement Plan) are ESC's roadmap to ensure the provision of safe drinking water to its customers. The DWMS and Improvement Plan are living documents which are intended to be reviewed internally each year and externally reviewed and updated every two - four years.

ESC will continue to implement the actions identified in the DWMS and Improvement Plan to ensure drinking water quality meets the requirements of the *Public Health Act 2010* (NSW). The DWMS will continue to be reviewed annually by Council and externally reviewed and updated every 2 – 4 years.

The new 12 ML/d SWTP will be based on best-practice technologies to meet the requirements of the ADWG.

A water safety assessment for drinking water drawn from the Deua/Moruya River, Buckenboura River, Tuross River and Deep Creek Dam was undertaken by Water Futures (2018) including assessment of source vulnerability, microbial safety and water treatment capability. In anticipation of the inclusion of health-based targets in the ADWG in future, the assessment also considered microbial health risks and the resulting treatment requirements. The assessment found that the NWTP and SWTP are capable of

adequately treating the source water and supplying water safe for potable use. Recommendations for maintaining source water protection included (Water Futures, 2018):

- Continuing to actively limit and control development and its intensity within the drinking water supply catchments.
- Continuing to proactively inspect, assess and manage OSSM systems.
- Maintaining planning and development overlays and controls in catchments.
- Undertaking routine catchment inspections to remain aware of, and seek to control, inappropriate development and activity within the water supply catchments.

## 5.5 Water Distribution System

A water supply model was built in 2012 and updated in 2014. The model is used to determine the needs and sizing of infrastructure when extending service area boundaries to cater for new developments, or to determine the impact of any changes to the system. The water network modelling update (NSW Public Works, 2014b) identified system upgrades required to meet minimum pressure at peak instantaneous demand. Reticulation system analysis of all the reservoir zones was carried out to identify the impact of future demand on the reservoir zones. Analysis indicated that six reservoir zones (Catalina 2, Bodalla Park, Surf Beach, Malua Bay, Burri Point and Tomakin Heights) would require additional works to meet the minimum pressure under the future (2046) demand.

The water supply model was updated in 2022 so that it reflects the current system and demand forecasts to 2051 (PWA, 2022c). The updated model also reflects the north-south system boundary transition with the construction of the 12 ML/d SWTP and extension of the southern system to Mossy Point reservoir zone. A 450 mm trunk main that bypasses Moruya will transfer water from the SWTP/ Big Rock reservoir to the Mossy Point Reservoir. To manage the supply and meet the service levels, the boundary between the northern and southern supply areas will be varied based on growth in demand, WTP capacities, seasonal demand and operational requirements. Works required to facilitate this operating regime are:

- Tuross pump station to Big Rock reservoir: 6 km of 600 mm pipeline (to be constructed as part of new SWTP) and 2 km of 450 mm pipeline (included in mains renewal program).
- Moruya bypass: 6 km of 450 mm pipeline.
- Renewals and upgrades: Dalmeny reservoir inlet (included in mains renewal program), Eurobodalla dam pumping station transfer from dam to SWTP (to be constructed as part of new SWTP).

## 5.6 Demand Management

A comprehensive review of non-build water conservation measures was undertaken as part of the 2003 IWCM Strategy (DPWS, 2003) and a suite of demand management measures was adopted including:

- Waterwise education - targeting outdoor use.
- Water price increase.
- Active leak detection.
- Shower head retrofit program.

- Non-residential audit.
- Introduce mandatory water sensitive urban design for all new developments.
- BASIX for all new developments.
- Permanent water conservation measures - outdoor water use.
- Meter replacement program.
- Water main replacement program.
- Water saving measures – community buildings.

The *IWCM Issues Paper* (Hydrosphere Consulting, 2016b) analysed the demand for water between 1995 and 2015 and found that the demand management measures adopted as part of the 2003 IWCM strategy had been successful in reducing demand. The 2016 IWCM Strategy recommended that demand management initiatives and pricing incentives continue to be implemented to assist with water conservation. These demand management initiatives discussed in the following sections will continue to be implemented to assist with water conservation.

The 2020/21 level of residential demand (117 kL/a) was low compared to the NSW median of 159 kL/a (NSW Government, 2022). The current level of residential demand is considered to be at a sustainable level based on benchmarking against other local water utilities (LWUs).

### 5.6.1 Pricing

Council's tariff structure addresses the following best-practice principles:

- Resource allocation: pricing which properly reflects the costs of providing the service and promotes efficient investment in water supply and sewerage infrastructure.
- Equity: the user pays principle (it is considered equitable that people pay for the cost of the services they use).
- Financial: provision of adequate and predictable funding to meet operating costs and future capital works.
- Customers: provision of service of desired quality and reliability at a fair and reasonable price.
- Community service obligations: provision of services to pensioners, disadvantaged groups, and general community amenities consistent with Council policy.
- Simplicity: a pricing structure that is easy to administer and is understood by customers.

The *Eurobodalla Shire Council Liquid Trade Waste Regulation Policy* (ESC, 2017a) sets out the process for local approvals and pricing of discharge of liquid trade waste to Council's sewerage systems.

Revised Development Servicing Plans were adopted in 2020. Assumptions regarding future developer income are discussed in Part C: Financial Plan.

ESC's water supply and sewerage pricing generally complies with best-practice requirements. However, the current pricing structure does not result in 75% of residential income from usage charges (the ESC result was 56% in 2021) as recommended by the NSW Government's best-practice requirements. This reflects the

need to achieve the required income in all years (including wet years or restricted periods with reduced consumption) and the generally low level of residential consumption. ESC received “deemed compliance” for the 2022/23 water pricing structure from NSW Department of Planning and Environment (DPE) – Water.

ESC has progressively increased the price of water since 2007 (in real terms) to ensure full cost recovery and provide price incentives for water saving. The usage charge for 2022/23 is $3.90 per kL and availability charge is $360 p.a. resulting in a typical residential bill (TRB) of $833 p.a. based on the average household consumption of 121 kL/a between 2017 and 2021. The typical residential bill increased by 3.0% p.a. between 2019 and 2023 (1.8% p.a. excluding inflation).. A comparison between the water supply and sewerage TRB projected in the 2016 IWCM Strategy and the actual TRB is shown in Table 12. Although the forecast and actual TRB is similar, factors beyond Council’s control include inflation and fluctuation in residential consumption due to climate. In addition, there was a slight increase in billed consumption due to the meter replacement program (4 kL/a).

**Table 12: Comparison between TRB projected in the 2016 IWCM Strategy and actual TRB**

| | Water supply ($ per assessment)[1] | | Sewerage ($ per assessment)[1] | |
|---|---|---|---|---|
| Year | Forecast TRB | Actual TRB | Forecast TRB | Actual TRB |
| 2017 | $713 | $713 | $902 | $902 |
| 2018 | $727 | $731 | $931 | $930 |
| 2019 | $738 | $745 | $950 | $950 |
| 2020 | $748 | $757 | $963 | $970 |
| 2021 | $760 | $780 | $979 | $990 |
| 2022 | $782 | $796 | $1,007 | $1,010 |
| 2023 | $806 | $833 | $1,038 | $1,030 |

1. The forecast TRB has been inflated to year dollars using the % change in consumer price index for Australia to 2021. The estimated change in CPI for 2022 and 2023 is 3%.

Figure 48 shows the water demand per residential property, the step 1 water supply usage charge for the Shire and the TRB. Demand steadily declined between 2003 and 2008 with large increases in usage charges. The residential demand has remained relatively constant since 2008 despite significant increases in usage price. The performance target set for demand management in the 2016 IWCM Strategy was for the average annual residential demand to be less than 130 kL/residential property which has been achieved (5-year average 121 kL/property p.a.).

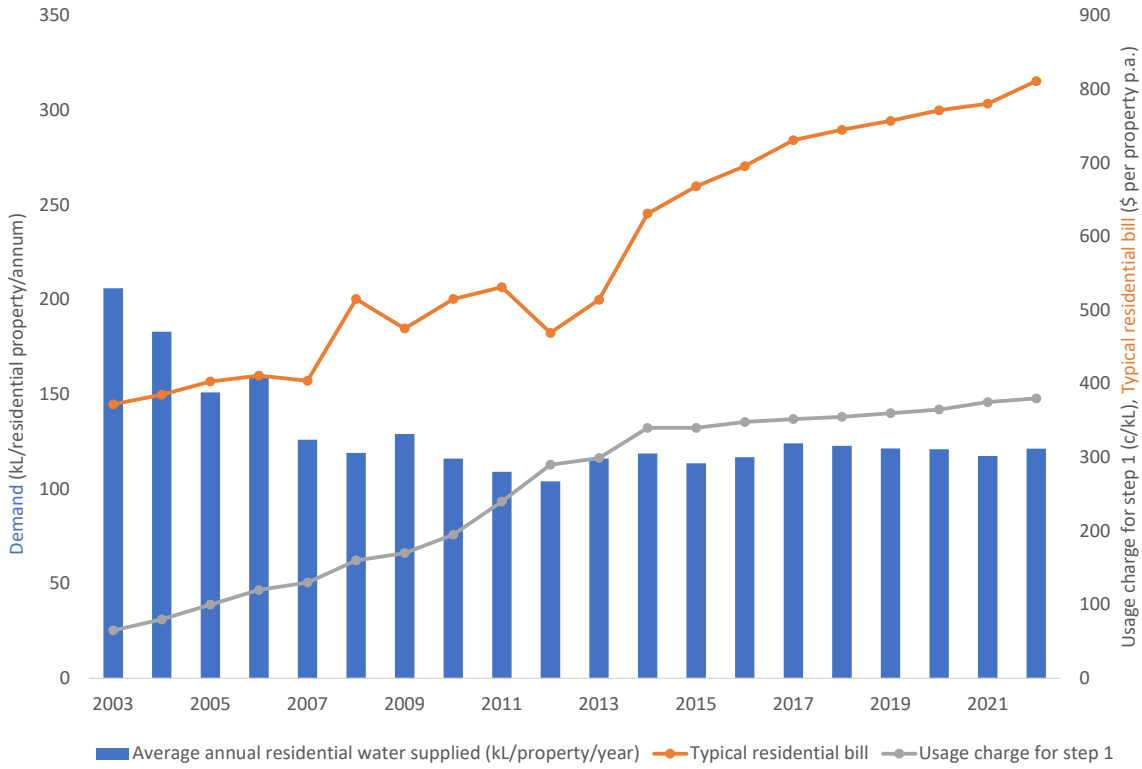


**Figure 48: Residential water demand and pricing**

Source: NSW Government (2022)

Total and residential demand has remained relatively constant since 2010 despite increases in water usage prices suggesting that the capacity to lower the demand with usage pricing has been exhausted. Council will continue to review pricing on an annual basis to ensure full cost recovery.

### 5.6.2 Incentives for water saving devices

Council continues to offer rebates and incentives (showerhead exchange program, washing machine rebate, dual flush toilet rebate and free installations of certain water saving devices including hose spray guns, pre-rinse spray gun heads, tap flow restrictors and showerheads). In 2019/20, 379 water rebates were provided for dual flush toilets (52) and washing machines (327). Many schools participate in the water conservation programs including excursions to Deep Creek Dam, WTPs and STPs. The Business Water Efficiency Program provides support, smart water monitoring devices and a pilot rebate program for large water-using businesses.

All new water-using appliances, shower heads, taps and toilets purchased by Council must be better than the average Water Efficiency Labelling Scheme (WELS) star rating by product type.

### 5.6.3 Water losses

Active leak detection using acoustic assessment of pipes and fittings is undertaken throughout the Shire on a five-year cycle. The program has been successful and cost effective in determining leaks which may otherwise have gone undetected. Council will continue the active leak detection program in order to reduce water losses. This is considered to be the most cost-effective method of further reducing water production.

A ten-year meter replacement program (replacing standard 20 mm water meters when they reach 10 - 12 years of age or exceed usage of 5,000 kL) commenced in 2013 which has reduced the errors in metered consumption. There are approximately 19,700 water meters in the system and Council is replacing about 2000 (including approximately 500 failed meters) per year. Once the program is complete, replacing water meters at 10 - 12 years or 5,000 kL will become routine.

Council is implementing a water main replacement program (approximately 1% of the network each year) which will assist with reducing water main breaks and leakage. A smart metering trial was conducted at Potato Point and Mystery Bay to inform the mains leak detection program.

The Infrastructure Leakage Index (ILI) is the ratio of current annual real losses to unavoidable annual real losses (calculated in accordance with indicator A9 of the Bureau of Meteorology's National Urban Water Utilities Performance Reporting Framework). The ILI represents the level of water loss from a supply system while allowing for the supply pressure of the system and thus measures how well real losses are being managed. Non-revenue water (NRW) is the metered and estimated unmetered potable authorised supply for which a bill is not issued to the consumer. This comprises real losses (mostly leakage), apparent losses (under-registration of customer meters and illegal use) and authorised unbilled water (e.g. mains flushing and firefighting). Historic levels of water losses are shown in Table 13. ESC's levels of water losses compare favourably to the NSW median.

**Table 13: ESC water losses (2014 – 2021)**

| Data | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | *2021 NSW median* |
|---|---|---|---|---|---|---|---|---|---|
| Total potable water supplied (ML) | 3,418 | 3,293 | 3,437 | 3,748 | 3,633 | 3,599 | 3,567 | 3,566 | *6,082* |
| NRW (ML) | 539 | 550 | 572 | 676 | 545 | 545 | 575 | 615 | *801* |
| NRW (% of water supplied) | 15.8% | 16.7% | 16.6% | 18.0% | 15.0% | 15.1% | 16.1% | 17.2% | *13.2%* |
| Real losses (L/connection /day) | 50 | 48 | 50 | 54 | 52 | 51 | 50 | 50 | *64* |
| ILI | 1.1 | 1.0 | 1.0 | 1.0 | 0.6 | 0.6 | 0.6 | 0.57 | *0.85* |
| Leakage (kL/km/day) | 1.06 | 1.02 | 1.07 | 1.17 | 1.13 | 1.11 | 1.1 | 1.09 | *1.7* |

Source: NSW Government (2022)

# 6. SEWERAGE STRATEGY

## 6.1 Batemans Bay

### 6.1.1 Collection and transfer system

The 2016 IWCM Strategy outlined the plan to divert flows from the Malua Bay and Lilli Pilli sewer catchments to the Tomakin STP to reduce demand on the Batemans Bay STP and accommodate peak demands and future growth in the region. Sewage from these areas is currently pumped to the Batemans Bay STP via pumping station SPSBB40. This was considered a better alternative to augmenting the Batemans Bay STP as it optimises the use of existing assets, reduces the augmentation requirements at Batemans Bay STP, utilises spare (off-peak) capacity at Tomakin STP, utilises a better performing ocean outfall at Tomakin and allows access to more reuse options at Tomakin than are available at Batemans Bay. A concept design has been prepared for diversion of the load to Tomakin STP via a new Malua Bay diversion pumping station to be located close to pumping station BB43 (NSW Public Works, 2014c; PWA, 2021a). A concept design report for upgrading pumping stations BB01, BB02 and BB03 was prepared in 2018 (PWA, 2018b). ESC is continuing to progress the diversion of flows from the Malua Bay and Lilli Pilli sewer catchments to the Tomakin STP (to be completed in 2026).

As a result of proposed re-development of the Batemans Bay Swimming Centre into the Batemans Bay Regional Aquatics, Arts and Leisure Centre at Mackay Park, ESC will relocate and upgrade three existing SPSs (in catchments BB06, BB27 and BB28) and provide a new SPS (referred to as BB59) to service the amenities building within the broader Mackay Park complex (Tonkin, 2020).

### 6.1.2 Treatment and disposal

The 2016 IWCM strategy detailed plans to undertake a 25-year mechanical and electrical upgrade for Batemans Bay STP and implement the Stage 2 upgrade works including the aeration system, sludge handling and reuse system as well as provision of alum dosing for phosphorous removal and to improve clarifier performance and a UV system for the filtration system bypass (NSW Public Works, 2015a).

Stage 2 upgrade works will optimise and improve the works undertaken in the Stage 1 upgrade and aim to augment the capacity of the STP to 32,000 EP (PWA, 2018c). A contract for the Stage 2 upgrade has been awarded and construction commenced at the end of 2021. The construction is due to be completed by the end of December 2023. Stage 3 upgrade works will include an additional clarifier replacing four smaller, underperforming clarifiers and increasing the capacity to 40,000 EP by 2028.

The sewer demand analysis (PWA, 2020; PWA, 2022a) provides load forecasts for the future Batemans Bay system configuration as shown in the following figure.

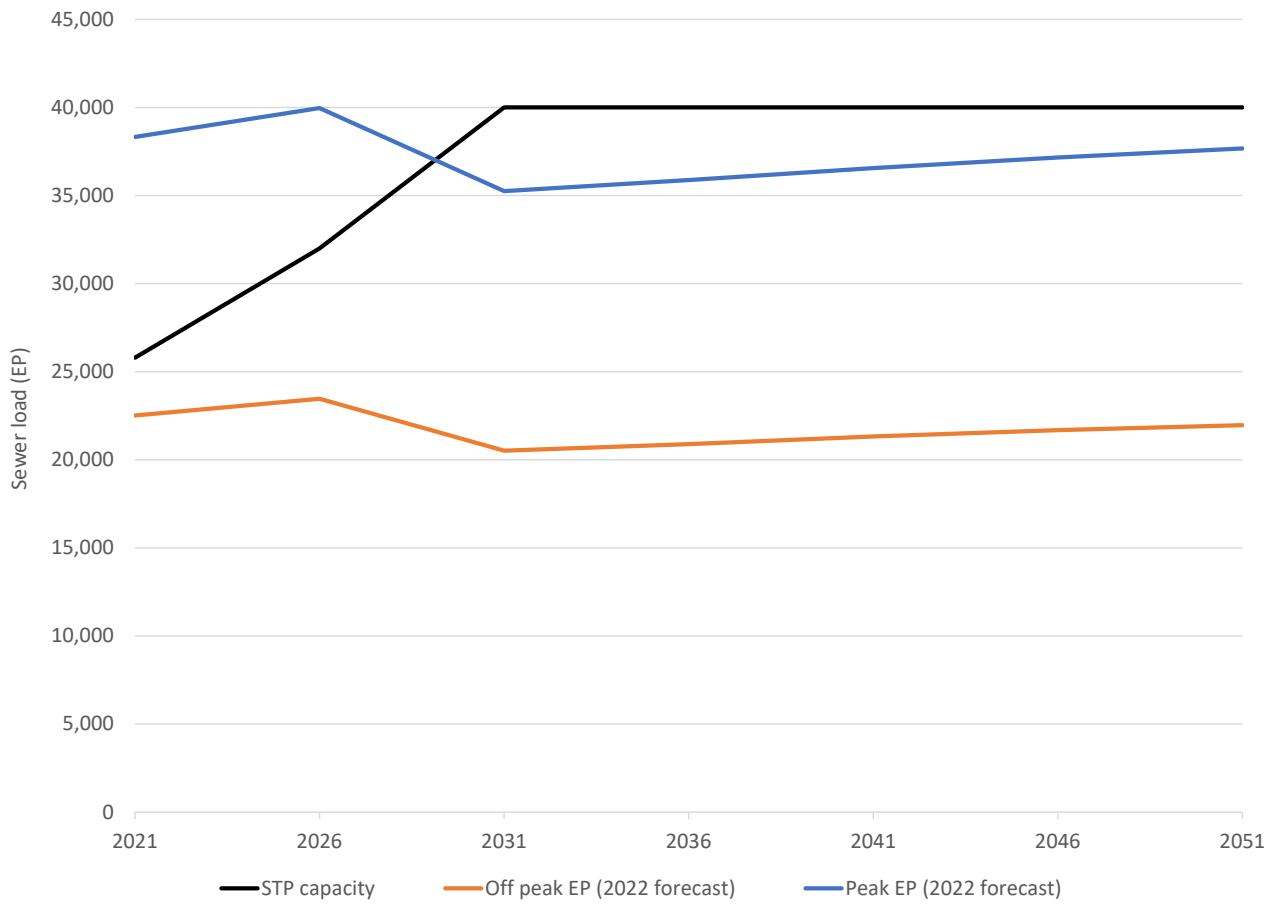


**Figure 49: Forecast sewer load (EP) and STP capacity with Malua Bay diversion – Batemans Bay**

### 6.1.3 Recycled water

The Catalina Country Club and Hanging Rock playing fields recycled water schemes are managed in accordance with operational management plans (Peter Spurway & Associates, 2009; Peter Spurway & Associates, 2010). The 2016 IWCM Strategy recommended that ESC prepare a Recycled Water Management System for the recycled water scheme in accordance with the *Australian Guidelines for Water Recycling (AGWR): Managing Health and Environmental Risks* (2006) and the *NSW Guidelines for Recycled Water Management Systems* (NSW Office of Water, 2015). The guidelines adopt a risk management approach to managing risks to human health and the environment from recycling of water from greywater and treated sewage. In accordance with the guidelines, any scheme that recycles water must ensure that public health and the environment are protected. The guidelines require that every scheme should have a risk management plan based on a 12-element framework. A Recycled Water Management System will be prepared for the scheme during 2023.

## 6.2 Tomakin

### 6.2.1 Collection and transfer system

ESC has constructed a new regional sewage pumping station (RSPS) to provide for the future urban expansion at the southern end of Broulee. The RSPS transfers sewage from the current and future development in the area to the Tomakin STP via SPS TO01 (PWA, 2017). The RSPS is located at a site in the southwest corner of Captain Oldrey Park and will receive flows from TO13, TO24, pumped flows from the Carroll College, and a gravity catchment adjoining the pumping station site. The flow from the RSPS is discharged at the collection manhole of SPS TO01 via a 250 mm diameter 3.4 km long rising man along George Bass Drive (PWA, 2017).

### 6.2.2 Treatment and disposal

As described in Section 6.1, the 2016 IWCM Strategy proposed diverting sewage flows from the Malua Bay and Lilli Pilli sewer catchments to the Tomakin STP to reduce the demand on the Batemans Bay STP. As a result of this diversion, flows to the Tomakin STP would increase by approximately 0.5 ML/d (NSW Public Works, 2014c). Augmentation of the Tomakin STP is required to facilitate future sewage loads from the Lilli Pilli and Malua Bay diversion, a proposed urban expansion zone at Rosedale, Barlings Beach development area and population growth within the existing towns and villages of Tomakin, Mogo, Mossy Point and Broulee. The Tomakin STP will be upgraded following the completion of the Batemans Bay STP Stage 2 upgrade. A concept design for the Tomakin STP augmentation to 25,000 EP was developed in 2018 (PWA, 2018d).

The sewer demand analysis (PWA, 2020; PWA, 2022a) provides load forecasts for the future Tomakin system configuration as shown in the following figure.

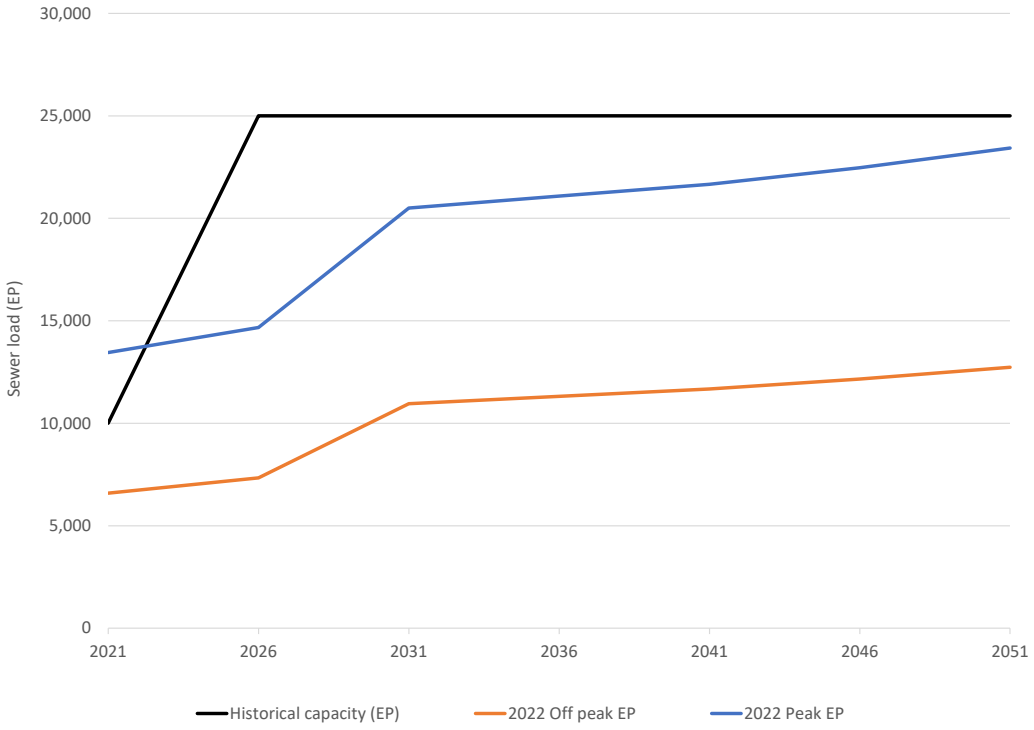


**Figure 50: Forecast sewer load (EP) and STP capacity with Malua Bay diversion – Tomakin**

### 6.2.3 Recycled water

The reclaimed water system at the Tomakin STP will be replaced during the upgrade of the STP. A Recycled Water Management System will be prepared for the scheme following the STP upgrade.

## 6.3 Moruya

### 6.3.1 Collection and transfer

A new development is proposed at the Moruya Airport including new hangars, accommodation and tourism units. A pressure sewer system was constructed in 2021 to service the new development, discharging to a new central sewage pumping station and rising main (Pressure System Solutions, 2020). The central SPS and rising main discharges to the existing Moruya sewerage system via an existing river crossing.

### 6.3.2 Treatment and disposal

The existing Moruya STP has sufficient capacity to treat current and future off-peak loads (Figure 22). A scheduled 25-year mechanical and electrical upgrade planned for 2026 will include a review of capacity and any upgrade requirements. The plant has some aging components which will be upgraded at that time.

### 6.3.3 Recycled water

The Moruya High School, Moruya Golf Course and Riverside Park recycled water schemes are managed in accordance with operational management plans (Peter Spurway & Associates, 2007, Connell Wagner, 2002 and BMT WBM, 2010 respectively). The Moruya effluent reuse scheme will be expanded to maximise capacity and efficiency utilising re-purposed water supply assets. Recycled water will continue to be supplied to Riverside Park, the golf course, Ack Weyman Park, the showground and Moruya High School. A new pipeline will supply recycled water to Gundary Oval. A Recycled Water Management System will be prepared for the upgraded scheme.

## 6.4 Tuross

### 6.4.1 Treatment and disposal

The 2016 IWCM strategy documented that the Bingie STP operates within design capacity for the majority of the year but during the Christmas/New Year period, the plant loading increases substantially, impairing performance. A capacity upgrade was undertaken in 2022 with aeration and chemical dosing (5,800 EP), electrical and mechanical upgrades (Figure 24, Section 3.3). The STP will be replaced in 2047 at the end of its design life (60 years).

### 6.4.2 Recycled water

The Tuross Head Country Club recycled water scheme is managed in accordance with an operational environmental management plan (Peter Spurway & Associates, 2005). Desktop studies and site investigations of the Tuross Head recycled water infrastructure and proposed future infrastructure sites were undertaken in 2020 (HydroPlan, 2020). The recycled water pump station and pipelines will be upgraded to

improve the capacity of the golf course reuse scheme and transfer recycled water to Kyla Park for future expansion of the sports precinct. A Recycled Water Management System will be prepared for the upgraded scheme.

## 6.5 Bodalla and Potato Point

The average sewage flow from Bodalla was 42 kL/d between December 2019 and October 2021, considerably less than the design flow (104 kL/d for a single bioreactor). Peak flows in Christmas and Easter 2021 were approximately 60 - 75 kL/day. The ultimate design flow from Potato Point is expected to be less than 90 kL/d. The STP capacity (approximately 208 kL/d) is expected to be sufficient for the long-term.

To ensure environmental impacts of the new scheme are minimised, effluent disposal is via irrigation of surrounding agricultural land. Discharge to Borang Creek will only occur during extended wet periods, currently anticipated to be one year in every five. The land that is irrigated will be used for beef cattle grazing and fodder production. The recycled water irrigation system consists of effluent storage, irrigation pumps, pipelines and an irrigation area of approximately 19 hectares.

The irrigation scheme draws recycled water from a 27.5 ML effluent storage pond at the STP. The supply of irrigation water is based on adopted rates of evapotranspiration for grass pasture, the available irrigation area and the soil moisture deficit. For the majority of the time, effluent generated by the STP is either stored on-site or used completely for irrigation. The irrigation system has a distribution capacity of 16 L/s using fixed circular sprinklers. ESC has prepared a Recycled Water Management System for the reuse scheme.

## 6.6 Narooma

The area serviced by the Kianga STP (Narooma, North Narooma, Kianga and Dalmeny) is a popular holiday destination, particularly in summer, resulting in short periods of increased load. The 2016 IWCM Strategy noted that major capacity bottlenecks needing to be addressed through capital expansion were the return activated sludge pumping system and the aeration system. Augmentation options were investigated and a condition assessment for the civil, electrical and mechanical components was carried out to provide an upgrade strategy for the STP (NSW Public Works, 2016a). A 25-year mechanical and electrical upgrade of Kianga STP is scheduled for completion in 2025 and will include an upgrade in capacity to 12,000 EP to prolong the life of the STP until its scheduled replacement at the end of its design life.

The sewer demand analysis (PWA, 2020; PWA, 2022a) provides load forecasts for the future Kianga STP as shown in the following figure. Operating parameters will be adjusted during the Christmas holiday period to improve STP performance and capacity. During this period, sludge will not meet stabilisation requirements for beneficial reuse and therefore will be processed separately and disposed of to landfill.

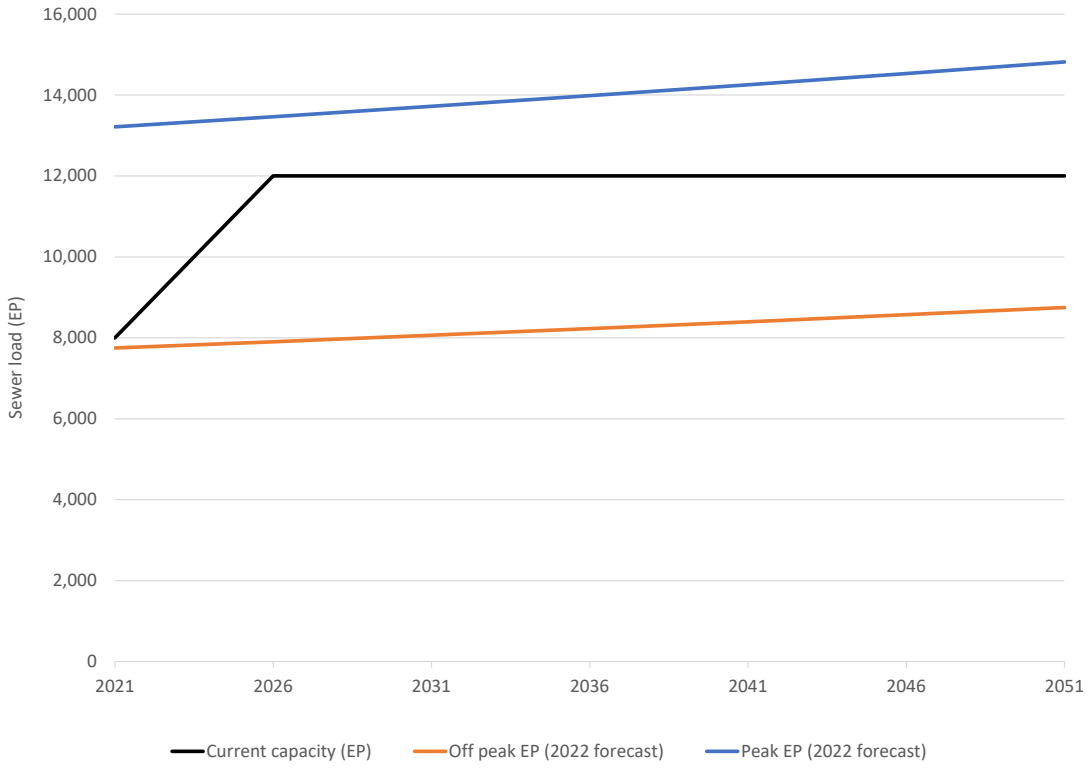


**Figure 51: Forecast sewer load (EP) and STP capacity Narooma**

## 6.7 Inflow and Infiltration Reduction

Reducing hydraulic loading on the system can:

- Effectively prolong the life of the existing assets.
- Defer new works programs.
- Make treatment processes more effective.
- Reduce operation costs.
- Improve environmental performance.

Issues with load management may occur due to excessive stormwater or ground water infiltration. ESC's current strategies for reducing inflow and infiltration are:

- Inspection of sewers to identify condition (via CCTV) – 5% of the network p.a.
- Sewer re-lining – 1% of the network p.a.
- Identification and removal of illegal connections (smoke testing).

Network modelling of the sewerage schemes (NSW Public Works, 2013b; NSW Public Works, 2014c; 2014d; 2014e; 2014f; NSW Public Works, 2016b; PWA, 2021a; PWA, 2021b) identified upgrades required to avoid overflows during the 1 in 5 year 1-hour rainfall event in the sewerage systems. Priority upgrades are being undertaken as part of the sewer main replacement program which is implemented based on condition assessments and assessment of remaining asset life. Smoke testing is also undertaken in sewer catchments which have recorded high wet weather flows.

# 7. VILLAGE SEWERAGE AND WATER SUPPLY SCHEMES

## 7.1 Water Supply

The villages of Nelligen, South Durras and Congo rely on local water supplies such as rainwater tanks and private bores. The 2016 IWCM Strategy included connection of these villages to the ESC water supply system at the same time as the provision of sewerage schemes.

## 7.2 Sewerage

Several villages in the Eurobodalla Shire do not have a reticulated sewerage system and rely on individual OSSM systems to treat household wastewater. If an OSSM system is not designed or maintained effectively, untreated wastewater may be released with negative effects on the environment and public health. These impacts may include pollution of nearby waterways, lakes and wetlands, and contamination of groundwater supplies, swimming areas and oyster growing areas.

The 2016 IWCM strategy documented a risk assessment of the unsewered villages considering the following criteria:

- Performance of existing OSSM systems – number and type of OSSM systems, adequacy of systems during peak and non-peak times and in wet weather and water consumption.
- Technical considerations – lot sizes, slope and soil type.
- Risks to water supply – contamination of supplies.
- Sensitivity of receiving environment – e.g. primary recreation area, priority oyster lease areas, coastal lakes and wetlands.

Risks were determined based on each criterion and assigned a score out of 3 for each of the four criteria (with the maximum score of 3 representing the highest risk) and 12 representing the highest total risk. The resulting prioritisation was similar to the ranking reported in the 2003 IWCM Strategy (DPWS, 2003):

- South Durras: high (11.5) due to sandy soils and groundwater supplies.
- Nelligen: high (10).
- Central Tilba and Tilba Tilba: medium - high (9).
- Akolele: medium - high (9).
- Mystery Bay: medium (8).
- Congo: medium (7).

The prioritisation provided a guide for Council in allocation of funding. The 2016 IWCM Strategy included provision of a sewerage scheme for all villages within 15 - 20 years, dependent on the ongoing level of risk to public health and the environment and the availability of funding. Investigations for these schemes has progressed as discussed in the following sections.

Council will continue to implement its *On-Site Sewage Management Code of Practice* (ESC, 2018) to ensure that OSSM systems meet best-practice environmental and health performance standards and provide a sustainable option for wastewater management. All OSSM systems are allocated a risk rating, which

determines the frequency of inspections. The code describes acceptable solutions for types of OSSM systems such as effluent pump-out systems (if the area is proposed to be connected to reticulated sewer in the near future), how OSSM systems are monitored and the procedure for rectification of defects.

## 7.3 External Funding

The NSW Government's Country Towns Water Supply and Sewerage Program (CTWSSP) commenced in 1994 and ceased in July 2018. The CTWSSP was a priority program in which projects across NSW were priority-ranked based on several factors, including social (public health) and environmental need. ESC received financial contributions towards the Mogo, Moruya Heads, Turlinjah, Rosedale, Guerrilla Bay, Bodalla and Potato Point sewerage schemes under the CTWSSP. Grant funds varied from project to project and were typically 25% to 50% of scheme costs.

Upon completion of the CTWSSP, the remaining village schemes were:

- Nelligen water supply and sewerage.
- Akolele sewerage.
- South Durras water supply and sewerage.
- Congo water supply and sewerage.
- Central Tilba sewerage.
- Mystery Bay sewerage.

The 2016 IWCM Strategy and long-term financial plan included provision for these remaining schemes, with assumed grant funding of 40% to demonstrate that Council could afford an appropriate contribution for some, or all of the schemes. In 2017 the NSW Government commenced the Safe and Secure Water Program. Since then, Council has received 25% of scheme costs in grant funding towards the Nelligen water supply and sewerage schemes and the Akolele sewerage scheme. In late 2018 the Safe and Secure Water Program was changed to a priority program, with projects ranked against other projects across NSW. The remaining village schemes of South Durras, Congo, Centra Tilba and Mystery Bay are ranked mid-field, with the current funding commitment available for only the top 20% of projects. It is therefore unlikely that Council would receive grant funding for these projects in the foreseeable future.

## 7.4 South Durras

The village of South Durras lies approximately 17 km north-east of Batemans Bay. The village extends from the southeast edge of Durras Lake, close to the Lake's entrance, south to Durras Creek and includes the area behind Cookies Beach. At the 2021 census the resident population of South Durras was 319 with 344 private dwellings (145 occupied and 199 unoccupied with many dwellings used as holiday homes). The area surrounding the village consists of sensitive wetlands, Murramarang National Park and coastal dunes and lakes (Figure 52). Depending on topography, different parts of the village drain to either Durras Lake, Durras Creek, Cookies Beach Lagoon, or directly to the ocean.


**Figure 52: South Durras topographic catchments**

### 7.4.1 Water supply

The 2003 IWCM Strategy (DPWS, 2003) identified the water supply demand of 80 ML/a with PDD of 0.33 ML/d based on a reticulated water supply or 68 ML/a (0.22 ML/d) for a supplementary water supply assuming rainwater tanks continue to be used for non-potable uses (toilet flushing and garden watering). The water could be sourced from the coastal aquifer or the regional water supply at Batemans Bay. The local groundwater supply would require treatment (aeration and filtration) for low pH and iron removal (DPWS, 2003). The preferred option identified in the 2003 IWCM Strategy was harvested roof water with a supplementary water supply from a local supply source.

### 7.4.2 Sewerage

Options identified in the 2003 IWCM Strategy (DPWS, 2003) for improved sewerage facilities included:

- Advanced OSSM systems – on-site treatment with greywater reuse or local reuse.
- Centralised sewerage – common effluent drainage and treatment at Batemans Bay STP or a new local package STP.
- Full reticulated sewerage and treatment at Batemans Bay STP or a local package STP with dune infiltration and local reuse.

In 2003, ESC consulted with South Durras residents who were opposed to the provision of a reticulated water and sewerage system at that time. In the 2016 IWCM Strategy, South Durras scored the highest overall risk and was considered as the highest priority for the provision of sewerage services. Due to the water quality risks associated with the untreated groundwater supplies in South Durras (unlicensed bores/spear points close to septic absorption trenches), cost-efficiencies and the increased demand expected with a reticulated water supply, a reticulated water supply was proposed to be constructed at the same time as a new sewerage system. Due to the significant environmental and public health risks and highest prioritisation for sewerage services, the 2016 IWCM strategy recommended that Council continue to consult with South Durras residents with the aim of developing a preferred water supply and sewerage scheme for the village.

The NSW Environment Protection Authority (EPA) requested that ESC consider a long-term plan for local treatment and re-use of effluent with disposal to the ocean. However, the limited land availability for effluent irrigation in South Durras and limited options for effluent release (Durras Lake or dune infiltration) provide a challenge for local STP options.

Despite the high prioritisation for improved sewerage management in South Durras, there are significant physical and geographical limitations as well as past community opposition to the construction of a reticulated sewerage system. The preferred option identified in the 2016 IWCM Strategy was enhanced management of OSSM systems, based on the information available from the 2003 IWCM Strategy. The budget cost estimate in the 2003 IWCM Strategy for the integrated water supply and sewerage scheme was $30 million (indexed to 2023$) or approximately $90,000 per property.

A financial assessment has been undertaken to assess the increase in water supply and sewerage bills required to fund the South Durras water supply and sewerage scheme (Part C: Financial Plan). Provision of the scheme is considered to be unaffordable for the Eurobodalla community without external funding (Section 19.1).

### 7.4.3 Water quality monitoring

To assist in understanding the level of impact OSSM systems are having on nearby waterways, a water quality monitoring program was undertaken between June 2020 and February 2021 with samples taken from sites located in groundwater, surface water and stormwater channels and within Durras Lake, Durras Creek and Cookies Lagoon receiving environments during wet and dry weather. Modelling of catchment nutrient loads and contributions from OSSM systems was also undertaken to assess the relative level of impact (Southeast Engineering + Environmental, 2022).

Considering study limitations and the results of the other estuary water quality monitoring undertaken by the NSW Department of Planning and Environment (DPE), results have been summarised as:

- Durras Lake:
    - Enterococci was detected at one groundwater sampling location in the Durras Lake catchment on four occasions over a two-month period during summer (Dec 2020 – Jan 2021). Elevated nitrate levels were also detected in groundwater at this location. These results could indicate a temporary and localised OSSM system failure resulting in groundwater contamination at this location.
    - Surface water sampling of stormwater outlets adjacent to urban areas following rainfall measured elevated levels of Enterococci and nutrients. This indicates that stormwater is a source of Enterococci and nutrients to Durras Lake during rainfall events. If OSSM systems are failing/ surcharging into the stormwater system, this would be a pathway for this pollution to reach receiving waters.
    - Despite periodic nutrient and bacteria inputs from urban areas and some elevated nutrient concentrations associated with prolonged entrance closure and opening events, the typical nutrient status of Durras Lake during the study was within the levels of a healthy functioning aquatic ecosystem (i.e. less than water quality trigger values for NSW estuaries).
    - This is consistent with findings of the latest round of the NSW estuary water quality monitoring program which assessed water quality in Durras Lake over the 2020/21 summer (DPE, 2021). The program report card shows the overall condition of the estuary was good (B) grade, with an excellent (A) grade for algae, and a fair (C) grade for water clarity, indicating that Durras Lake is generally healthy and nutrient levels were not of concern during this period.
    - Modelling of catchment nutrient loads estimated that failure of OSSM systems in Durras Lake sub-catchment is estimated to contribute a very small proportion of total catchment loads (i.e. 0.6% total nitrogen, TN and 2% total phosphorous, TP) indicating a low impact from OSSM systems (Southeast Engineering + Environmental, 2022).
- Durras Creek and Cookies Beach catchments:
    - There were no groundwater samples taken in these catchments.
    - Surface water sampling of stormwater outlets adjacent to urban areas following rainfall (seven samples) measured elevated levels of Enterococci and nutrients. Stormwater pollutant levels were generally higher in the Durras Creek/ Cookies Beach catchment than in

the Durras Lake catchment, particularly for Enterococci with values ranging from 16 - 66,000 cfu/100mL, indicating a pollutant source from stormwater and potentially failing OSSM systems.

- Pollutant levels in Durras Creek and Cookies Beach Lagoon receiving waters were also much higher than those in Durras Lake and were generally in excess of levels considered to indicate a healthy aquatic ecosystem, even with the Durras Creek entrance in an open state. Due to the smaller catchment size, Durras Creek has reduced flushing compared to Durras Lake and is therefore more sensitive to catchment pollutant inputs. Cookies Beach Lagoon has an even smaller catchment size and does not open to the ocean and is therefore highly sensitive to catchment pollutant inputs.
- The results of modelling of catchment nutrient loads for the Durras Creek catchment suggested that failure of OSSM systems is estimated to contribute a larger component of total catchment loads than in Durras Lake (i.e. 6% TN and 16% TP).
- Modelling of catchment nutrient loads was not undertaken for Cookies Beach catchment.
- There was no parallel assessment of health in Durras Creek by DPE in the summer of 2020-21, however the most recent assessment in the 2014-15 summer graded overall estuary health as poor (D). Algae abundance was very poor indicating high nutrient levels were impacting the health of the system.

The results of this recent water quality assessment and modelling indicate that there may be some environmental impacts on water quality from existing residential areas and potentially failing OSSM systems. The greatest impact is on Durras Creek and Cookies Beach Lagoon receiving waters due to the smaller catchment size and sensitive receiving environments. Durras Lake is in better condition overall and has a lower relative contribution from OSSM systems.

Recreational water quality has been monitored by ESC since 2002 (including Cookies Beach). The NSW Government's monitoring of beach water quality provides a quality assurance program to confirm the accuracy and reliability of the Beachwatch program (DPIE, 2021). This assessment measures the impact of pollution sources, enables the effectiveness of stormwater and wastewater management practices to be assessed and highlights areas where further work is needed. The Beach Suitability Grades for 2020–2021 are based on water quality data collected over the last two to four years. Cookies Beach was rated 'Very Good' for beach suitability (the best water quality rating) which indicates microbial water quality is considered suitable for swimming almost all of the time, with few significant sources of faecal contamination (Figure 53).

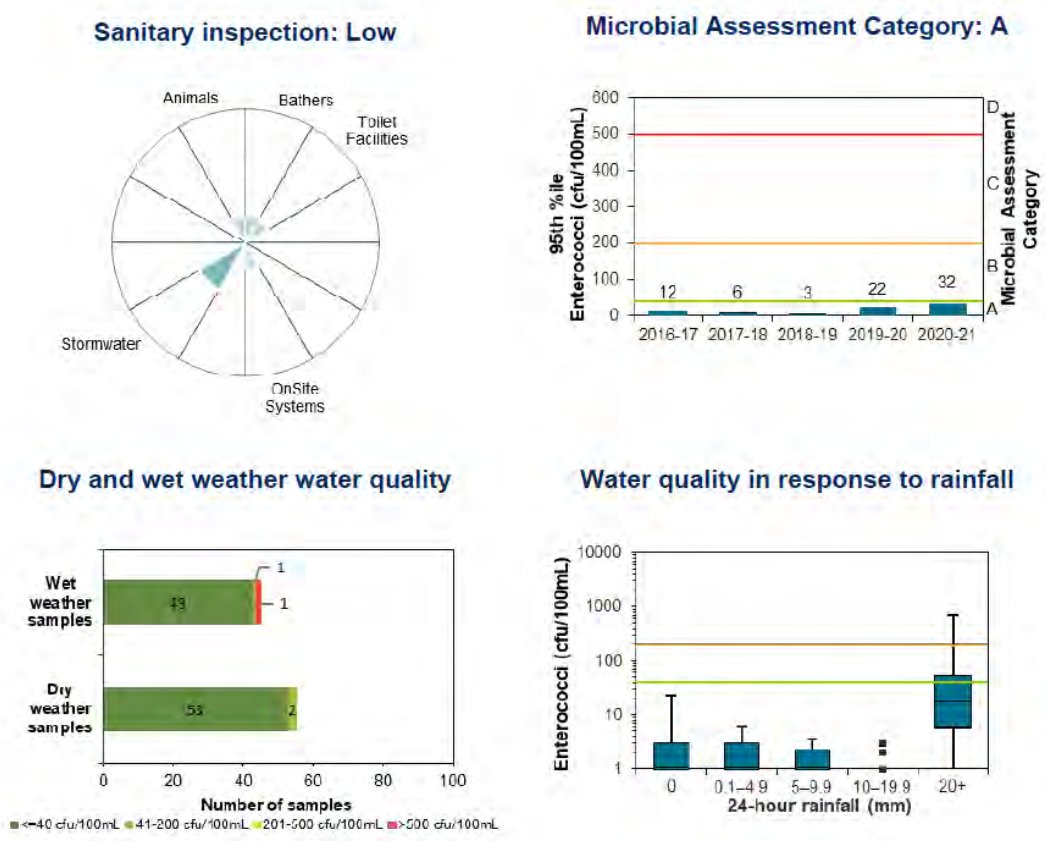


**Figure 53: Extract from Cookies Beach report card (NSW State of the beaches): 2020-2021**

Source: DPIE (2021)

### 7.4.4 Community consultation

As the scheme is not currently eligible for state government subsidy and based on the results of water quality investigations and considering site constraints, past community feedback and the high cost of constructing a reticulated sewerage scheme, Council is not currently proposing to construct a reticulated sewerage system or water supply for South Durras. Council will continue to monitor the health of the waterways and the performance and costs of managing OSSM systems for residents to reassess the need for a centralised sewerage system. If there is any deterioration in water quality or increased community desire for centralised water supply and sewerage systems, feasibility studies will be undertaken to inform the decision-making process.

ESC consulted with property owners in South Durras in July/August 2022 requesting feedback on the proposed strategy to not provide centralised water supply and sewerage systems for South Durras. Feedback received has been summarised as follows:

- 24 responses were received (22 unique responses, 6% of property owners).
- Eight respondents (36%) supported the proposed strategy, 10 (45%) were opposed, two requested more information on the water quality monitoring results, one suggested alternative infrastructure improvements (house, road and drainage) and one response was related to Durras Creek entrance.
- The majority (seven or 70%) of respondents who did not support the proposal have pump-out OSSM systems.

- The majority (eight or 80%) of respondents who did not support the proposal have properties within Cookies Beach catchment. The other two respondents (20%) who did not support the proposal have properties within Durras Creek catchment.

The support for the proposal generally related to the high cost of a reticulated sewerage system and the potential for increased development in the area that may be permitted if the sewerage and water supply systems were constructed.

The concerns raised about the existing system and the proposal related to:

- The poor performance of OSSM systems, particularly during wet weather and peak tourist periods.
- The steep topography within Cookies Beach catchment and insufficient space for sustainable OSSM systems.
- The high demand for pump out services during peak tourist periods.
- The high costs of pump out services.
- Safety, noise and sustainability of truck traffic (water carters and pump out tankers).
- Insufficient water quality monitoring, particularly during wet weather events and peak tourist periods.
- The inequity between the Council services in South Durras and other parts of the Shire.
- Risk of power outage (as experienced during the recent bushfires) and resulting lack of water for general use and firefighting.
- Contamination of private groundwater supplies.

Additional information on the water quality monitoring undertaken between 23 June 2020 and 1 February 2021 is provided in the following section.

Future water quality monitoring results and community feedback will be considered in the next review of the IWCM Strategy (planned for 2028).

### 7.4.5 Review of water quality monitoring

Responding to community feedback, a review of rainfall during the water quality sampling period was undertaken to determine if wet weather events and peak tourist periods were adequately assessed in the monitoring program. Southeast Engineering + Environmental (2022) used rainfall data from Kioloa Old Post Office (69040). Rainfall during the sampling period at this weather station is shown on Figure 54.

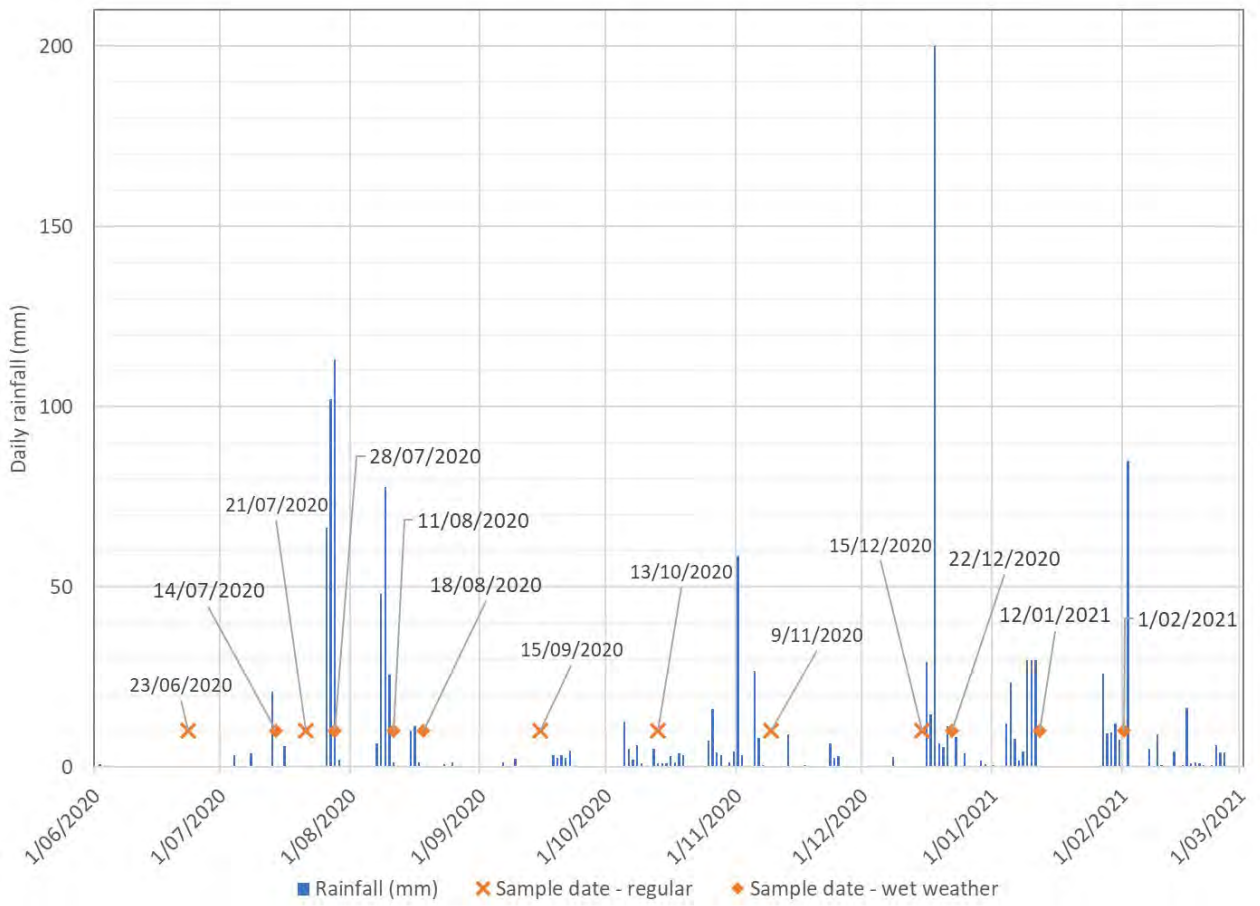


**Figure 54: Rainfall during water quality sampling period – Kioloa, 1/6/20 – 1/3/2021**

Source: Queensland Government (2022). Kioloa Old Post Office (69040), 35.54˚S, 150.38˚E, 30m

The rainfall preceding the sample dates is shown in Table 14. Rainfall data from a SILO grid point at South Durras (interpolated rainfall data from surrounding stations) is also provided. Southeast Engineering + Environmental (2022) documented the timing of wet weather monitoring with >20 mm in 24 hours and >50 mm in 3 days but these triggers were not always met for the designated wet weather sample events. Regardless, it is considered that the sampling program captured two wet weather events in winter and at least one wet weather event in summer.

**Table 14: Sample dates and preceding rainfall**

| Sample dates[1] | Kioloa Old Post Office[2] | | | | South Durras[2] | | | | Regular sample[1] | Wet sample[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Rainfall (24hr) | Rainfall (3 days) | Rainfall (week) | Weather [3] | Rainfall (24hr) | Rainfall (3 days) | Rainfall (week) | Weather [3] | | |
| 23/06/2020 | 0 | 0 | 0 | Dry | 0 | 2.2 | 2.2 | Dry | Y | |
| 14/07/2020 | 0 | 20.8 | 25 | Mod | 4.2 | 34 | 36.2 | Mod | | Y |
| 21/07/2020 | 0 | 0 | 5.8 | Dry | 0 | 0 | 3.1 | Dry | Y | |
| 28/07/2020 | 113 | 281.4 | 281.4 | Wet | 67.2 | 269.1 | 269.2 | Wet | | Y |
| 11/08/2020 | 1.2 | 104.6 | 159.2 | Wet | 0.5 | 106.8 | 155.2 | Wet | | Y |
| 18/08/2020 | 0 | 12.8 | 23.2 | Mod | 0 | 13.1 | 25.8 | Mod | Y | Y |
| 15/09/2020 | 0 | 0.4 | 2.6 | Dry | 0 | 0.2 | 2.5 | Dry | Y | |
| 13/10/2020 | 1 | 6 | 15.2 | Dry | 0.3 | 2.9 | 15.4 | Dry | Y | |
| 9/11/2020 | 0.6 | 0.6 | 35.7 | Dry | 0 | 0 | 27.3 | Dry | Y | |
| 15/12/2020 | 0.2 | 0.2 | 0.2 | Dry | 0 | 1.8 | 1.8 | Dry | Y | |
| 22/12/2020 | 0 | 23.4 | 223.4 | Wet | 3.4 | 4.9 | 146.5 | Wet | | Y |
| 12/01/2021 | 0 | 89.1 | 89.1 | Wet | 0 | 0 | 11.1 | Dry | Y | Y |
| 1/02/2021 | 20 | 20 | 65 | Mod | 0.6 | 32.3 | 83.5 | Mod | | Y |

1. Southeast Engineering + Environmental (2022)

2. Queensland Government (2022). Kioloa Old Post Office (69040): 35.54˚S, 150.38˚E. South Durras: 35.65˚S, 150.30˚E.

3. Southeast Engineering + Environmental (2022) documented the timing of wet weather monitoring with >20 mm in 24 hours and >50 mm in 3 days but both triggers were not always met. Wet weather is considered to occur if there was >50 mm in the previous 3 days or > 100 mm in the previous week, with dry weather when there was <10 mm in the previous 3 days.

A comparison between the total rainfall recorded at Kioloa Old Post Office over the period June 2020 – January 2021 (last sample taken 1/2/21) and the same period in the following years is provided in Table 15. The sampling period was wetter than the same period in the following year (2021/22) and wetter than the long-term average.

**Table 15: Total rainfall during sample period compared to 2021/2022 and long-term average rainfall**

| Timeframe | Rainfall (mm) |
|---|---|
| June 2020 – January 2021 (water quality sampling period) | 1,215.5 |
| June 2021 – January 2022 | 877.5 |
| Average (June – January) since 1970 | 699.6 |

Source: Queensland Government (2022), Kioloa Old Post Office (69040) 35.54˚S, 150.38˚E, 30m

Three samples were taken over the Christmas to New Year period in December 2020/January 2021 (Table 14).

It is considered that the Southeast Engineering + Environmental (2022) monitoring program adequately covered wet weather events and peak tourist periods. Other aspects of the program methodology and implementation were also reviewed, revealing that the study had some limitations that can be resolved in future monitoring programs. This included a lack of control sites (e.g. upstream of villages) to assess background levels of pollutants and reliance on Enterococci as the sole indicator of faecal pollution. It is not possible to separate human sources of Enterococci from other sources such as birds, dogs and other wildlife, therefore this measure in isolation is not a definitive measure but can be used in the overall interpretation of water quality data. Detections of Enterococci in groundwater are more likely to indicate contamination from OSSM systems, due to a reduced likelihood of faecal contamination from other animal sources.

### 7.4.6 Recommendations

From an environmental health point of view, the catchments of most concern are the Cookies Beach catchment (parts of Dilkera Street, Banyandah Street and Allambee Street) which drains to Cookies Beach Lagoon and ultimately to the beach and the Durras Creek catchment (Figure 52). From a public health perspective, there are concerns within the community (and Council) that unlicensed spear points located close to septic absorption trenches are being used for potable water supply. Council has provided results of inspections and requested that DPI-Water (as the regulator of groundwater use) review the adequacy of private groundwater supplies (regulatory requirements and water quality).

Council acknowledges the high cost of OSSM system pump-out and the additional demand and truck movements during peak periods. As part of the ongoing review of the proposed strategy, Council will continue to assess the environmental and economic sustainability of the OSSM systems and public health risks in South Durras. Due to the small size of lots in South Durras, development in South Durras may not be approved without a proposal to provide a reticulated sewerage system in the near future.

Council will continue to pursue funding for the South Durras water supply and sewerage scheme from the NSW Government given the identified water quality contamination, potential health risks and the high

sensitivity of the coastal lakes and lagoons in the area. If Council is eligible for external funding, the technical feasibility and cost of various water supply and sewerage options will be investigated.

Future considerations for water quality sampling that aims to detect failing OSSM systems are:

- Wet weather events should be targeted in all future sampling with at least three large events per year as a minimum (i.e. >50mm in 3 days preceding the sampling) in addition to regular monthly sampling.
- Wet weather sampling should also aim to coincide with high-risk periods for OSSM system failure (i.e. summer and autumn school holidays when peak loadings are expected).
- Groundwater sampling in the Durras Creek/ Cookies Lagoon catchments should be included. This was not undertaken in previous sampling and there may be site constraints preventing this. However, detections of Enterococci in groundwater are more likely to indicate contamination from OSSM systems, due to a reduced likelihood of faecal contamination from other animal sources.
- Microbial source tracking methods would also assist to identify the human derived faecal matter and produce a clearer picture of OSSM system impact, separate from other sources of bacteria (e.g. pets and wildlife).
- Control sites upstream of the villages would also assist in establishing background levels of pollution.

## 7.5 Nelligen

At the 2021 census the resident population of Nelligen was 399 with 204 private dwellings (153 occupied and 51 unoccupied). Due to the significant environmental and public health risks including impact on oyster aquaculture, and high prioritisation for sewerage services, the 2016 IWCM strategy recommended that Council commence options development and assessment and consultation with Nelligen residents with the aim of constructing water and sewerage schemes within 10 years. A strategic options report for the water supply and sewerage at Nelligen was prepared in 2016 (PWA, 2016). Council has received partial funding for Nelligen water supply and sewerage schemes as discussed in Section 7.3. A new reservoir will be constructed in 2023 at Bay Ridge, the high point along the route to Nelligen from Batemans Bay, which can be fed from the existing water supply scheme and a new 150mm pipeline with a booster pumping station will be constructed to supply the Bay Ridge Estate high level zone. A gravity main from this reservoir along the Kings Highway can supply potable water to a new service reservoir at Old Nelligen Road and a gravity main from that service reservoir can supply customers including the caravan park at Nelligen.

Each property will be provided with a pressure sewerage pump unit in its own small tank with a network of pressure mains connecting all pump stations. Council will own and operate the pump units but householders would be required to pay the power costs of running the pump. Sewage will be transferred to Batemans Bay STP for treatment. The water and sewer schemes are expected to be completed in 2024.

## 7.6 Mystery Bay

At the 2021 census the resident population of Mystery Bay was 199 with 137 private dwellings (89 occupied and 48 unoccupied). The land surrounding Mystery Bay includes Gulaga National Park, sensitive vegetation ecosystems and farmland. Mystery Bay is connected to the regional water supply scheme and sewage is treated on site. The feasibility study on sewering of the southern villages (Commerce, 2006) investigated the

sewering of Mystery Bay with either pressure sewerage or aerobic on-site treatment systems (AOTS) and construction of a local STP with effluent managed locally by either irrigated reuse or dune exfiltration. The 2016 IWCM Strategy found that significant expenditure was not considered to be warranted in the medium term based on the village sewerage risk assessment, as other villages were a higher priority.

Council is not proposing to construct a full reticulated sewerage and treatment system for Mystery Bay. Council will continue to monitor the health of the waterways and the performance and costs of managing OSSM systems for residents to reassess the need for a centralised sewerage system. If there is any deterioration in water quality or increased community desire for centralised water supply and sewerage systems, Council will investigate external funding sources.

## 7.7 Central Tilba and Tilba Tilba

At the 2021 census the resident population of Central Tilba and Tilba Tilba was 444 with 229 private dwellings. The land surrounding Central Tilba and Tilba Tilba includes Gulaga National Park, sensitive vegetation and farmland. Central Tilba is connected to the regional water supply, Tilba Tilba has a community managed water supply scheme supplemented with private rainwater tanks and sewage is treated on-site. The feasibility study on sewering of the southern villages (Commerce, 2006) investigated the sewering of Central Tilba and Tilba Tilba with either pressure sewerage or AOTS and construction of a Tilba STP with effluent reuse. If sewage from Central Tilba and Tilba Tilba is to be treated at Kianga STP, an upgrade of Kianga STP will need to accommodate this additional load. The feasibility study also considered the combined treatment of sewage from Central Tilba, Tilba Tilba and Mystery Bay at a single STP to the south of Tilba Tilba. This option was included in the 2016 IWCM Strategy scenario with a capital cost estimate of $25 million (indexed to 2023$) or approximately $68,000 per property.

Council will continue to monitor the health of the waterways and the performance and costs of managing OSSM systems for residents to reassess the need for a centralised sewerage system. If there is any deterioration in water quality or increased community desire for centralised water supply and sewerage systems, Council will investigate external funding sources.

## 7.8 Akolele

Akolele is situated on the north-eastern shores of Wallaga Lake, which is at the border of Eurobodalla and Bega Valley Shires. Akolele is connected to the Bega Valley Shire Council water supply scheme. The 2016 IWCM Strategy recommended that Council commence sewerage collection system options development and assessment and consultation with residents with the aim of constructing the scheme within 20 years. In 2016 a sewerage scheme was constructed for Wallaga Lake (in Bega Valley Shire) and the Koori Village with treatment at Bermagui STP. ESC is planning to construct a pressure sewer system to service Akolele with sewage to be transferred to the Bermagui STP via the nearby Wallaga Lake sewerage system. Council has received partial funding for the scheme (refer Section 7.3). The construction of the sewerage system will be completed in 2024. ESC has developed an agreement with Bega Valley Shire Council to treat the sewage from Akolele.

## 7.9 Congo

Congo is a small village located near Moruya, bounded by Congo Creek to the north and the ocean to the east. At the 2021 census the resident population of Congo was 253 with 143 private dwellings (102 occupied and 41 unoccupied). The 2016 IWCM Strategy concluded that there was no significant public health driver for improved water supplies in Congo and that the residents appear to be satisfied with the current local supplies. The provision of improved sewerage management would improve the public health and environmental health of the area although significant expenditure was not considered to be warranted in the medium-term based on the village sewerage risk assessment as other villages are a higher priority. The 2016 IWCM Strategy recommended that Council commence options development and assessment and consultation with residents with the aim of constructing the scheme within 20 years. Construction of the scheme would depend on community consultation and the availability of funding.

A *Water Supply and Sewerage Options Strategy Study* (PWA, 2021c) was undertaken to provide a strategy for the provision of reticulated water and sewerage service for Congo. The study recommended connecting to the existing Moruya Heads water supply network via a trunk main along Pedro Point Road. This option has the lowest scheme cost and shortest pipeline route with no access restrictions. The estimated cost of the water supply scheme is $6.8 million (approximately $47,000 per property).

The sewerage system options investigated included a pressure-based system and a gravity sewage collection system with a local treatment facility or transfer to the Moruya sewerage system. The study found the preferred option to be a pressure sewer system with flow balancing at the main transfer pumping station site to pump sewage to the Moruya sewerage scheme, with wastewater from Congo discharged into SPS MO15 via Pedro Point Road. The village would have a network of pressure mains connecting all pump stations. Council would own and operate the pump units but householders would be required to pay the power costs of running the pump. The estimated cost of the sewerage scheme is $6.6 million (approximately $46,000 per property).

To assist in understanding the level of impact OSSM systems are having on nearby waterways, a water quality monitoring program was undertaken at the same time as the monitoring in South Durras. Modelling of catchment nutrient loads and relative contributions from OSSM systems was also undertaken to assess the level of impact (Southeast Engineering + Environmental, 2022). Considering the study limitations discussed in Section 7.4, the following results have been drawn from the data:

- Groundwater sampling at one site within the Congo Creek catchment did not detect faecal bacteria indicator (Enterococci) or nitrates in any samples throughout this period. This suggests that OSSM systems were not contaminating groundwater at this location during the study.
- Surface water sampling of stormwater outlets adjacent to urban areas following rainfall measured elevated levels of Enterococci and nutrients. This indicates that stormwater is a source of Enterococci and nutrients to Congo Creek during rainfall events. If OSSM systems are failing/surcharging into the stormwater system, this would be a pathway for this pollution to reach receiving waters.
- Stormwater pollutant concentrations were similar to those measured in the Durras Lake catchment, however the receiving water quality for Congo Creek was poorer than in Durras Lake and generally exceeded aquatic ecosystem health triggers.

- The most recent assessment of the health of Congo Creek by DPE was in summer of 2017/18. The report card assessed overall estuary health as fair (C), with algae abundance reported as poor, indicating high nutrient levels were impacting the health of the system.
- Water quality in Congo Creek is likely to be affected by upstream land uses (95% of catchment is used for agriculture), and although the extent of impact from upstream sources has not been assessed in water quality sampling, recent modelling of catchment nutrient loads estimated that failure of OSSM systems in Congo Village is estimated to contribute a very small proportion of total catchment loads (i.e. 0.4% TN and 0.8% TP) (Southeast Engineering + Environmental, 2022).

The results of water quality assessment and modelling indicate that residential areas in Congo are having minimal impact on the health of receiving waterways, compared to potential upstream catchment sources.

Based on the results of water quality investigations and considering site constraints, past community feedback and the high cost of constructing a reticulated water supply and sewerage scheme ($13.4 million, approximately $93,000 per property), Council is not proposing to construct the water supply or sewerage schemes at Congo. Council will continue to monitor the health of the waterways and the performance and costs of managing OSSM systems for residents to reassess the need for a centralised sewerage system. The provision of improved services is dependent on the ongoing level of risk to the environment and public health and the availability of funding.

ESC consulted with property owners in Congo in July/August 2022 requesting feedback on the proposed strategy. Only two responses were received, both supporting Council's proposed strategy.

# 8. CLIMATE CHANGE ADAPTATION

## 8.1 Climate Change Risks

Climate change is expected to place stress on human settlement areas. A climate change risk assessment (Statewide Mutual, 2020) prepared for Council identified the following climate change scenarios applicable in the region:

- The projections for the region's annual average rainfall range from a decrease (drying) of 10% to an increase (wetting) of 6% by 2030 and span both drying and wetting scenarios (-6% to +10%) by 2070. All models agree that spring rainfall will decrease by -2% to -19% by 2070, with autumn rainfall projected to increase across the region.
- Maximum temperatures are projected to rise on average across the region by 0.7 ºC in the near future (2020-2039, hereafter 2030). The greatest increases in temperature will be occurring during summer and spring. By the far future (2060-2079, hereafter 2070) the maximum temperature on average across the region is projected to rise by 2.1 ºC. Minimum temperatures are projected to rise on average across the region by 0.6 ºC by 2030 and 2.0 ºC by 2070.
- The number of hot days (days above 35 ºC) are projected to increase across the region by an average of three days per year by 2030. Hot days are projected to increase across the region by up to eight additional days per year by 2070. The greatest increases in the number of hot days will be occurring during summer and spring.

- The region is expected to experience an increase in average and severe fire weather in the near future and the far future. The increases in average and severe fire weather are projected to occur mainly in spring and summer. Although the increases in severe fire weather are relatively small (up to two more days every five years by 2030) they are projected to occur in spring and summer.
- Climate modelling projects a decrease in the number of small to moderate East Coast Lows (ECLs) in the cool season with little change in these storms during the warm season. Extreme ECLs in the warmer months may increase in number but extreme ECLs in cool seasons may not change. An increase in the frequency and/or intensity of ECLs could exacerbate the effects of sea level rise on coastal erosion.

Council has developed a draft *Climate Action Plan 2022-2032* (ESC, 2022a) to set out how Council and the wider community can build resilience to the changing climate and reduce carbon emissions. This was developed with consideration of the climate change risk assessment (Statewide Mutual, 2020) which identified risks relevant to water supply and sewerage management which are summarised in Table 16.

**Table 16: Climate change risks relating to water supply and sewerage**

| Risk | Current controls | Adequacy of control | Risk Rating | Requires future adaptation initiatives? |
|---|---|---|---|---|
| Increases in the occurrence of algal blooms and cause a reduction in water quality and risk to public safety | Water quality monitoring and notification program. Weekly Water NSW reports on algal blooms. Natural resource management and Landcare programs. Aeration at Deep Creek Dam. Water supply treatment. | Highly beneficial | High | Yes |
| Increased evaporation and demand for water consumption impacting on Council's water supply | IWCM Strategy, Drought Management Plan, water loss management and efficiency programs | Highly beneficial | High | Yes |
| Increased demand for water resulting in water restrictions and increased costs to consumers and economic impacts to businesses | IWCM Strategy, Drought Management Plan, water loss management and efficiency programs | Mostly beneficial | High | Yes |
| Increased peak day water demand | Water reservoir storages | No benefit | High | Yes |

| Risk | Current controls | Adequacy of control | Risk Rating | Requires future adaptation initiatives? |
|---|---|---|---|---|
| More intense weather events causing increased and more widespread damage to property and infrastructure including roads, telecommunications, water and electricity supply | Current emergency management arrangements with SES as the combat agency, development controls, stormwater management, development controls. | Mostly beneficial | High | Yes |
| Longer dry periods impacting on water supply, agricultural production, irrigation demand and maintenance of unsealed roads | Development controls, water restrictions, recycled effluent, IWCM Strategy, Drought Management Plan, water loss management and efficiency programs | Some benefit | High | Yes |
| Increase the threat of fire resulting in damage to essential infrastructure including roads, telecommunications, water and electricity supply | Emergency management arrangements with RFS as the combat agency, asset protection zones and fire mitigation works, planning through Eurobodalla Bush Fire Management Committee, WHS policies & procedures, development controls | Mostly beneficial | High | Yes |
| Loss/ damage to public and private property and infrastructure, particularly low-lying coastal and estuarine areas due to erosion, re-alignment of shores, increased flooding, etc. | Interim Coastal Hazard Adaptation Code, flood studies, Coastal Management Plans, raising road levels, improving drainage, relocating assets, more resilient construction for new /renewed buildings/assets, development controls | Mostly beneficial | High | Yes |
| Impacts on water quality due to the salinisation of coastal fresh waterways resulting in the damage/loss to the natural environment, agriculture, aquaculture and freshwater bores | CMP for estuaries, other natural resources management and Landcare programs. 2018 Ground Water Salinisation Study, Tuross water pump station bores not used during low water levels | Some benefit | Low | Monitor |

Source: Statewide Mutual (2020)

The draft *Climate Action Plan 2022-2032* (ESC, 2022a) includes the following water supply and wastewater treatment actions with the primary objective to ensure secure and safe potable water supply and wastewater treatment:

- Increase water security through construction and utilisation of the southern water supply storage.
- Reduce water demand by seeking opportunities to reduce potable water use and increase recycled water usage.
- Continue programs to identify and resolve stormwater infiltration into the sewerage systems.
- Continue to improve energy security for key water and wastewater assets.
- Continue to conduct water efficiency programs.
- Advocate to the NSW Government on opportunities and the ability to safely reuse grey and waste water particularly in drought periods.

## 8.2 Coastal Hazards

Council has adopted sea level rise estimates of 0.23 m by 2050 and 0.72 m by 2100 (from a 2014 baseline, Rhelm, 2022). An emerging issue for Council's management of the water supply and sewerage schemes is the effect of sea level rise due to climate change. As sea level rises, more infrastructure will be at risk of prolonged or at least regular inundation due to tidal variation and the water level will be increased during storm activities. The coastal hazards of erosion and recession may impact on assets and infrastructure that are close to the coast.

Risks to water and sewer assets have previously been identified (Rhelm, 2022) in Tomakin (within council reserve on ocean side of houses) and Wharf Road, Batemans Bay (back beach area). In 2016, coastal erosion resulted in the exposure of a sewer rising main that was originally located 50 m back from Cullendulla Beach (Long Beach). The main was replaced by horizontal directional drilling in 2019. Sewage pump stations are at greatest risk of inundation since these are part of a gravity-fed network and typically at low elevation. As pump stations are refurbished as part of Council's ongoing maintenance and asset renewal programs, Council considers flood studies and climate risks in decisions on the design of upgrades, incorporating climate modelling as well as any observed changes in hydrological flows.

ESC has commenced the preparation of a Coastal Management Program (CMP) for the open coast of the Shire. The CMP Scoping Study (Rhelm, 2022) identified threats including damage or loss of community assets and key infrastructure through storms and other coastal hazards. In 2021 ESC completed studies to map the extent of erosion, recession and inundation from storms, waves and tides which are being used in the development of the CMP (Rhelm, 2021). The risks to water and sewer assets have not been reviewed using the 2021 hazard mapping. The Draft CMP was on public exhibition until November 2022 and will be considered by Council at the December 2022 Council meeting.

## 8.3 Bushfire

During the 2019/20 bushfires, Eurobodalla experienced extended periods of power outages affecting the water and wastewater networks. All pump stations were inoperable for at least 36 hours during the bushfires, resulting in sewerage system overflows. The Northern WTP, Deep Creek Dam and Batemans Bay STP had

no power for lengthy periods. Bringing the networks back online relied on Council's operational staff being able to establish temporary power supply solutions with generators, on occasion at personal risk from the fires (ESC, 2022a). As part of the STP upgrades (Section 6), Council will install permanent standby generators. Council is also planning to install permanent, independent power generation capacity at major pump stations and the WTPs.

## 8.4 Energy Efficiency

Council has been actively addressing climate change for many years and is involved in various initiatives such as the Cities Power Partnership Program and the NSW Energy Saving Scheme. Council has installed 750kW of rooftop solar PV on Council facilities such as pools, water and STPs. In addition, Council signed a ten-year Power Purchase Agreement for renewable energy to cover the energy demand for its largest energy using sites, equivalent to around 80% of its total energy demand. Energy audits of water and sewer facilities were completed in 2010 which identified a range of opportunities to reduce energy used and also reviewed possibilities for renewable energy generation. Moruya, Tomakin, Batemans Bay, Bingie, Bodalla and Kianga STPs, Deep Creek Dam water pumping station and both WTPs now include solar power systems. Council has also implemented energy controls at water and sewer sites, operating in off-peak times where possible.

The *Climate Action Plan (2022 – 2032)* (ESC, 2022a) sets out Council's response to climate change and includes the following targets:

- Reduce Council's emissions from the 2005/06 baseline by 80% by 2030.
- Achieve net zero emissions by 2040.
- Source 100% of Council's electricity demand from renewable energy by 2030.

Water and sewer operations account for about two thirds of Council's electricity usage. The water supply system cannot rely on gravity to deliver water throughout the Shire so the water supply system is energy intensive. Similarly, the large number of smaller sewerage systems and the Shire's topography require a large number of treatment plants and sewerage pumping stations. Significant efforts have already been made to improve energy management and reduce emissions across water and sewer services. IWCM actions contributing to a reduction in emissions include:

- Sewer relining to prevent stormwater and groundwater infiltration and hence reducing pumping and treatment requirements.
- Water conservation programs – residential and business demand management incentives and education programs and water leak detection to reduce pumping and treatment requirements.

## 8.5 Rainfall

The changing rainfall patterns have been considered in the development of the preferred water supply augmentation strategy relating to availability of water. The 3,120 ML southern storage is expected to meet demand and drought management requirements (based on secure yield studies discussed in Section 5) for approximately 50 years and its design will accommodate the ability to increase the storage size. In addition, the demand management programs included in the IWCM Strategy (pricing, household and business water savings programs, education and leakage reduction, Section 5.6) will assist in reducing reliance on rivers

and groundwater. Decreases in catchment water quality over time resulting from changes in catchment runoff rates/ behaviour will be addressed through the DWMS and the future inclusion of health-based targets in the ADWG (Section 5.4). The impacts of changing rainfall patterns on sewage collection and transfer include increased inflow and infiltration which is being addressed though CCTV inspections, sewer relining and the identification and removal of illegal connections (smoke testing) (Section 6.7).

# PART B: STRATEGIC BUSINESS PLAN

## 9. OPERATING ENVIRONMENT REVIEW

This strategic business plan addresses the management and operation of the ESC water supply and sewerage businesses in accordance with Part A: IWCM Strategy.

### 9.1 Mission Statement

Council's water supply and sewerage mission is to "*provide safe, reliable and sustainable water supply and sewerage services*".

### 9.2 Principal Issues

The principal issues affecting the water supply and sewerage businesses were documented in the 2016 IWCM Issues Paper (Hydrosphere Consulting, 2016b) and reviewed for the 2022 IWCM Strategy update (Part A of this Document). Many of these issues have been addressed through asset upgrades and augmentation and new sewerage and water supply systems for some villages. The issues that have been resolved since the 2016 IWCM Strategy are:

- Reticulated water quality has been addressed through treatment plant improvements.
- Water network upgrades and reticulation system upgrades have been implemented to meet minimum pressure at peak instantaneous demand.
- Capacity and performance issues at Tuross Head STP and Batemans Bay STP have been addressed through upgrades and augmentation.
- Impacts of OSSM systems in Bodalla and Potato Point have been resolved with the construction of a pressure sewerage system with treatment at a new STP and reuse of treated effluent for pasture irrigation.
- Impacts of OSSM systems in Rosedale and Guerilla Bay have been resolved with the construction of a pressure sewerage system with treatment at the Tomakin STP.

The remaining IWCM issues and updated strategy are discussed in Table 17.

**Table 17: IWCM Issues**

| Issue | | Type of Issue | Adopted strategy |
|---|---|---|---|
| *Water Supply* | | | |
| I1 | Based on the assessment of secure yield (the highest annual water demand that can be supplied from a water supply headworks system while meeting rules for the frequency, duration and severity of restrictions), the existing water supply does not meet security of supply requirements. The secure yield of the water supply system is constrained by the storage provided and the ability to transfer water from the south to the north of the Shire. | Capacity, level of service | Construction of 3,120 ML off-stream storage south of Moruya by 2025 to be filled from the Tuross River.<br>Raising Deep Creek Dam by 1.5 m to increase storage in the north to 5,663 ML (by 2023).<br>A new 12 ML/d SWTP by 2029.<br>Moruya bypass trunk water main by 2029.<br>Supply from the northern and southern supply areas to meet growth in demand, WTP capacities and operational requirements.<br>Ongoing demand management – pricing, education, residential and non-residential rebates, water loss reduction, BASIX. |
| *Sewerage Systems* | | | |
| I2 | Batemans Bay experiences a high proportion of holiday visitors over the summer season and the STP experiences a clear peak and off-peak load. The Batemans Bay STP has insufficient capacity to treat current peak season loads. | Capacity, level of service | Diversion of Malua Bay and Lilli Pilli sewer catchments to the Tomakin STP by 2026.<br>Inflow and infiltration reduction.<br>Batemans Bay STP capacity upgrade to 40,000 EP by 2028. |
| I3 | Tomakin experiences a high proportion of holiday visitors over the summer season and the STP experiences a clear peak and off-peak load. The Tomakin STP has insufficient capacity to treat current peak season loads. | Capacity, level of service | Augmentation of the Tomakin STP by 2025 to 25,000 EP to treat growth in Tomakin as well as future sewage loads resulting from the Lilli Pilli and Malua Bay diversion.<br>Inflow and infiltration reduction. |

| Issue | | Type of Issue | Adopted strategy |
|---|---|---|---|
| I4 | Expansion and improvement of recycled water systems is required to meet demand, improve efficiency and sustainability. | Regulatory compliance | The Operational Environmental Management Plans include procedures to cease supply when water quality is inadequate.<br>The Moruya effluent reuse scheme will be expanded to supply Gundary Oval to maximise capacity and efficiency.<br>The Tuross effluent reuse scheme will be upgraded to improve the capacity of the golf course reuse scheme and transfer recycled water to Kyla Park for future expansion of the sports precinct.<br>Recycled Water Management Systems will be developed in accordance with current guidelines. |
| I5 | High inflow and infiltration into the sewerage systems affects the ability of the STPs to achieve licence conditions for effluent quality and load. Sewer network modelling predicts overflows from the sewerage systems during the 1 in 5-year 1 hour rainfall event for current and future loads. | Regulatory compliance | Sewer network modelling has identified the upgrades required to minimise wet weather flows. The existing budget includes $3,700,000 p.a. for sewer network modelling, sewer main replacement, relining, junction sealing, access chamber renewals and upgrade of sewer mains and pumping stations across the Shire. Priority areas are identified through CCTV inspection and smoke testing programs. |
| *Unserviced Areas* | | | |
| I6 | The village of Nelligen drains into priority oyster aquaculture areas of the Clyde River. Water quality is a key concern for the oyster industry. Re-development of properties within Nelligen has resulted in limited space for adequate OSSM systems. | Level of service | Connection of Nelligen to the regional water supply scheme by 2024.<br>Pressure sewerage system in Nelligen with treatment at Batemans Bay STP by 2024. |
| I7 | The existing wastewater management systems in Akolele are unsatisfactory due to overflows from OSSM systems to sensitive water bodies including oyster lease areas. | Level of service | Provision of a reticulated pressure sewerage scheme with treatment at Bermagui STP by 2024 (owned and operated by Bega Valley Shire Council). |

| Issue | | Type of Issue | Adopted strategy |
|---|---|---|---|
| I8 | The existing OSSM systems in Central Tilba and Tilba Tilba are unsatisfactory due to hydraulic overloading, unsuitable lot sizes, poor ground conditions for effluent disposal and disruptions and odours during pump out. | Level of service | Ongoing review and implementation of the *On-Site Sewage Management Code of Practice* (ESC, 2018).<br>Ongoing monitoring of health of receiving waterways in unsewered villages to assess performance of the OSSM systems.<br>Ongoing community consultation and review of performance and costs of managing OSSM systems for residents to reassess the need for centralised sewerage systems.<br>Investigate availability of external funding. |
| I9 | The existing OSSM systems in South Durras and Congo experience hydraulic overloading due to poor ground conditions for effluent disposal. Monitoring and modelling of receiving water quality in South Durras and Congo indicates that there may be some impacts on water quality from existing residential areas and potentially failing OSSM systems. However, the level of impact is considered to be small in comparison to other catchment inputs. | Level of service | |
| I10 | The existing OSSM systems in Mystery Bay experience hydraulic overloading due to poor ground conditions for effluent disposal. | | |

## 9.3 Compliance Review

As a local government owned business, a water utility is subject to a number of legislative obligations. The operation of the water supply and sewerage schemes is driven by the following key requirements:

- Council's Integrated Planning and Reporting documents (Section 16).
- The NSW Government best-practice requirements for water supply and sewerage - ESC currently complies with the Best-Practice Management Guidelines including integrated water cycle management (Part A of this document), strategic business planning (Part B), water supply and sewerage pricing and developer charges (Sections 5.6.1 and 12), water conservation and demand management (Sections 5.6 and 12). Council will prepare a drought and emergency response plan to meet needs for the next 5-10 years as a key outcome of the IWCM Strategy. The plan will be based on the adopted water supply strategy which includes the southern storage, augmented SWTP upgrade and south to north transfers (Section 5.3). The drought and emergency response contingency plan will set out the response measures to ensure the continuity of the water and sewer services under emergency situations that may be encountered.
- Water access licences and Water Sharing Plans under the *Water Management Act 2000* (Table 18).
- Environment Protection Licences (EPL) under the *Protection of the Environment Operations Act 1997*. The licences specify load, concentration and volume limits for the discharge monitoring points as well as monitoring conditions. Under the licences, Council is required to produce annual return documents, notify of any harm to the environment as a result of the sewerage system operation, provide written reports as requested by the authority, notify of bypass or overflow incidents and supply annual performance reports. The licences include pollution reduction programs (PRPs) and Special Conditions if improvements to operation of the sewerage systems are required.

  ESC generally complies with EPA sewerage system licences apart from occasional exceedances relating to high rainfall, hydraulic load and inflow/infiltration into the sewer systems. ESC has prepared a Pollution Incident Response Management Plan (PIRMP, ESC, 2020) for the licensed sewerage systems which provides a vehicle for identifying potential pollution incidents, understanding and evaluating the likelihood of occurrence, identification of mitigation techniques and notification protocols.
- Council's Drinking Water Management System (DWMS, NSW Public Works, 2019) prepared in accordance with the Australian Drinking Water Guidelines and the *Public Health Act 2010.*
- NSW Dam Safety Committee, *Dam Safety Act 1978* and public safety risk guidelines.
- Other NSW and federal legislation and planning instruments.
- The adopted Levels of Service documented in this SBP (Section 10).
- Guidelines for strategic planning, construction and operation of the water supply and sewerage schemes.

**Table 18: Water access licences**

| Licence | Town water source/ storage | Description | Purpose | Entitlement (ML/a) | Water Sharing Plan |
|---|---|---|---|---|---|
| 39422 | Tuross River Water Source | Diversion works - pumps | Town water supply (south) | 876 | *Tuross River Unregulated and Alluvial Water Sources 2016* |
| 39147 | | 5 bores | | 902 | |
| 37903 | Deua River Water Source | 2 x 200 mm centrifugal pump | Town water supply (north) | 4,345 | *Deua River Unregulated and Alluvial Water Sources 2016* |
| 38116 | Buckenboura River Water Source | Bywash dam, overshot dam, 2 pumps | Town water supply (no longer used) | 1,384 | *Clyde River Unregulated and Alluvial Water Sources 2016* |
| 37874 | South East Coastal Sands Groundwater Source | 4 bores (1 used) | Town water supply, Broulee (roadworks) | 150 | *South Coast Groundwater Sources 2016* |
| 37868 | Lachlan Fold Belt Coast Groundwater Source | 1 bore | Recreation (Botanical Gardens) | 15 | |
| 41293 | Wagonga Inlet Tributaries Water Source | Diversion pipe, overshot dam | Town water supply | 40 | *Tuross River Unregulated and Alluvial Water Sources 2016* |
| 38585 | | Spearpoints | Recreation (Bill Smyth Oval) | 12 | |

**Table 19: Environment protection licences**

| Licence | Sewerage system |
|---|---|
| 1397 | Batemans Bay |
| 1398 | Narooma |
| 1614 | Moruya |
| 2851 | Tomakin |
| 3108 | Tuross |

Only STPs with >1,000 ML discharge are required to be licensed. The Bodalla STP is not licensed.

Compliance is reported through:

- Five yearly reviews of the IWCM Strategy and SBP (including this document).

- EPL annual returns.
- DWMS annual reviews.
- Annual performance indicator reporting (Section 10.2).

Council holds all required insurances related to the water supply and sewerage businesses including buildings and contents, public liability, professional indemnity, pollution liability, Councillors and officers' liability, motor vehicles and personal accident insurance.

# 10. SERVICE LEVELS

## 10.1 Levels of Service

The Levels of Service (Section 4) are the primary driving force for the water supply and sewerage businesses. They explicitly define the standards required from the water and sewerage systems and will largely shape Council's detailed operations, maintenance and capital works planning. The levels of service are designed to reflect an optimisation of the desired service provision, what is affordable as well as the system capability. These considerations take into account legislative requirements, industry standards and customer demands. The desired levels of service must be balanced against the cost of providing the service. Achieving the levels of service is the primary objective. Minimum standards (regulatory requirements) apply for water quality, effluent discharge and biosolids management.

The proposed levels of service for water supply and sewerage are discussed in Section 4. Council may need to revise the levels of service in the future in accordance with customer demand and industry trends.

## 10.2 Performance Monitoring

The NSW Government promotes continued productivity and performance improvement by urban local water utilities to improve the quality and efficiency of services to all NSW residents. Performance monitoring and benchmarking are becoming increasingly important management tools and are required under the National Water Initiative. It also provides assurance to the NSW Government and the public that the requirements of the *Water Management Act 2000* are being met (i.e. each local water utility is performing satisfactorily). To provide a balanced view of the long-term sustainability of local water utilities, a triple bottom line focus has been adopted with performance reported on the basis of social, environmental and economic performance indicators. NSW performance monitoring and benchmarking also provide valuable data for determining the current position and assessing future water supply and sewerage needs for regional areas. This ensures an appropriate focus and targeting of programs to assist local water utilities (NSW Government, 2022).

ESC submits data on performance indicators to the NSW Government each year. A summary of the data and yearly trends compared to other NSW water utilities is provided in Appendix 1 and Table 20.

**Table 20: Summary of performance monitoring data**

| Indicator | Units | ESC result (2021) | Weighted NSW median (2021)[1] | Discussion and strategy |
|---|---|---|---|---|
| Average annual residential water supplied | kL/property/a | 117 | 159 | Residential consumption is low (5th lowest in NSW in 2021), potentially due to pricing, other demand management measures and large number of holiday homes with low occupancy. |
| Recycled water supplied | ML | 190 | 631 | The recycled water schemes in Moruya and Tuross will be expanded by 2024 (budget $3.0 million). |
| Water main breaks | No. per 100 km | 42 | 10 | Ongoing water main renewal program, replacing approximately 1% of water mains annually from 2017/18 (budget $2 million p.a.). |
| Water losses (leakage) | kL/km/day | 1.1 | 1.7 | Ongoing water loss management program (budget $30,000 p.a.) and water main renewal program (as above). Water meter replacement program (budget $260,000 p.a.) once meters are 10 years old, at 5,000 kL or have failed. |
| | L/d/connection | 50 | 64 | |
| | ML | 357 | 539 | |
| Non-revenue water | ML | 615 | 801 | |
| Sewerage breaks and chokes | No. per 100 km | 13 | 30 | Ongoing sewer main renewal program, including relining sewers and sealing junctions (budget $1 million p.a.) and sewer main cleaning program (budget $0.5 million p.a.). Some water utilities may be under-reporting this result. |
| Sewer overflows reported to regulator | No per 100 km main | 18 | 1 | |
| Unplanned interruptions | No. per 1,000 properties | 84 | 35 | |
| *Unserved urban population* | | | | |
| Sewerage | Persons | 1,459 | 1,448 | Backlog village sewerage schemes for Nelligen and Akolele (funded). |
| Water supply | Persons | 870 | 438 | Backlog water supply scheme for Nelligen (funded). |

| Indicator | Units | ESC result (2021) | Weighted NSW median (2021)[1] | Discussion and strategy |
|---|---|---|---|---|
| *Pricing* | | | | |
| Sewerage AC | $ p.a. | 990 | 790 | Pricing is reviewed each year to ensure full cost recovery (Part C: Financial Plan). |
| Water supply AC | $ p.a. | 340 | 178 | Pricing is reviewed each year to ensure full cost recovery and encourage demand reduction (Part C: Financial Plan). |
| Water supply UC (step 1) | c/kL | 375 | 225 | |
| Water supply TRB | $ p.a. | 796 | 594 | |
| Revenue from usage charges | % | 56 | 69 | |
| *Developer charges* | | | | |
| Sewerage | $ per ET | 8,606 | 5,700 | Revised Development Servicing Plans were adopted in August 2020 and will be reviewed by 2028. |
| Water supply | $ per ET | 6,748 | 6,485 | |
| *Operating costs* | | | | |
| *Sewerage* | $ per property | 675 | 560 | The large geographic area, small customer base and large number of small sewerage schemes result in reduced efficiencies. |
| | c/kL | 289 | 213 | |
| Water supply | $ per property | 555 | 492 | The large geographic area and small customer base result in reduced efficiencies. |
| | c/kL | 302 | 166 | |
| *Complaints* | | | | |
| Sewerage | No. per 1,000 properties | 17 | 5 | Ongoing maintenance and renewal programs should result in reduced incidents and complaints. |
| Water supply | No. per 1,000 properties | 11 | 9 | |

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

**SBP Objective 1: Levels of service**

| **Objective** | | | | |
|---|---|---|---|---|
| Operation of the water supply and sewerage systems meets the adopted levels of service which take into account financial implications, statutory/regulatory requirements, customer desires and industry standards. | | | | |
| **Performance Target** | | | | |
| 100% compliance with the levels of service. | | | | |
| **Strategy** | | | | |
| Monitor and report on levels of service being achieved. Address non-compliances. Review of adopted levels of service. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 1.1 | Review the levels of service. | DMWS | Annually | Included in recurrent budget |
| 1.2 | Compile performance indicator data | WSPE | By September each year | Included in recurrent budget |
| 1.3 | Review performance indicator data and develop corrective measures if required | WSPE | As part of the 5-year review of the IWCM Strategy and SBP | Included in recurrent budget |

1. DMWS: Division Manager Water and Sewer, WSPE: Water and Sewer Project Engineer

# 11. SERVICE DELIVERY

The service delivery strategy is the means ESC uses to provide or deliver service to its customers. It applies to all three main areas of asset management: operations, maintenance and capital works. It also has significant implications for customer service, human resources and the financial plan. This section outlines options for the delivery of water supply and sewerage services.

The delivery of ESC water supply and sewerage services is the responsibility of the Division Manager Water and Sewer (DMWS).

## 11.1 In-House Resources and External Contacts

The majority of operational and maintenance tasks for the sewerage and water supply schemes are undertaken by Council's in-house staff. Council intends to contract out work where it is the most effective service delivery option. Most major capital works are contracted out, including design, construction and commissioning of infrastructure. The number of services contracted out by Council has been gradually increasing, particularly in areas where specialist services are required. Current operations contracted out include sewer main inspections, large and critical sewer main flushing, smoke testing, leak detection, reservoir cleaning and condition assessment. Council uses its own labour force for minor capital works items such as minor pipe extensions and asset renewals. Most strategic planning, asset management and specialist design services are undertaken by external consultants.

## 11.2 Resource Sharing

Akolele is currently served by Bega Valley water supply and future sewerage services for Akolele will be provided by Bega Valley Shire Council. Other resource sharing with neighbouring Councils is currently limited to informal assistance. Council's external contracts e.g. for maintenance activities are considered to be at an optimum size for efficiencies and to promote local services and therefore other resource sharing is limited.

## 11.3 Private Sector Participation

Due to the small scale of the planned new assets for ESC, the attraction and participation of private investors appears to be unlikely. Therefore, Council has not identified any opportunities for private sector involvement in the near future.

# 12. CUSTOMER SERVICE PLAN

The customer service plan presents the areas to be serviced, the pricing structure, drought, demand and sewer load management initiatives and environmental management requirements in accordance with the IWCM Strategy (Part A).

**SBP Objective 2: Areas serviced**

| **Objective** | | | | |
|---|---|---|---|---|
| Provide sewerage and water supply services to all areas where there are identified significant environmental and health risks, community desires and economic feasibility. | | | | |
| **Performance Target** | | | | |
| Adequate water and sewer services are available to all areas by 2036. | | | | |
| **Strategy** | | | | |
| Consult with affected communities regarding options and design. Provide water supply and sewerage services to all backlog villages on a priority basis when funding is available. | | | | |
| **No.** | **Action** | **Responsibility**[1] | **Timing** | **Cost** |
| 2.1 | Construct Nelligen water supply and sewerage scheme | DMWS | 2024 | $15.6 million |
| 2.2 | Construct Akolele sewerage scheme | DMWS | 2023 | $3.2 million |
| 2.3 | Ongoing monitoring of health of receiving waterways in unsewered villages to assess performance of the OSSM systems | DMWS | Every 5 years for each unsewered area | Included in strategic planning budget |
| 2.4 | Ongoing community consultation and review of performance and costs of managing OSSM systems for residents to reassess the need for centralised sewerage systems | DMWS | Every 5 years for each unsewered area | Included in strategic planning budget |

1. DMWS: Division Manager Water and Sewer

### SBP Objective 3: Service Pricing

| Objective | | | | |
|---|---|---|---|---|
| The pricing system is equitable, reflects the actual cost of service provision and encourages demand reduction. | | | | |
| **Performance Target** | | | | |
| Best-practice pricing structure (deemed compliance) is achieved. | | | | |
| **Strategy** | | | | |
| Review and update tariffs and charges annually | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 3.1 | Annual review of tariff structure and best-practice compliance. | DMWS | Annually | Included in recurrent budget |
| 3.2 | Review and update Development Servicing Plans | DMWS | Every 5-10 years | $30,000 |

1. DMWS: Division Manager Water and Sewer

### SBP Objective 4: Environmental management

| Objective | | | | |
|---|---|---|---|---|
| Water supply and sewerage activities are environmentally sustainable. | | | | |
| **Performance Target** | | | | |
| 100% compliance with Environment Protection Licences and statutory obligations. | | | | |
| **Strategy** | | | | |
| Assess and manage environmental risks. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 4.1 | Pre-construction planning for all asset development including environmental assessment where required to identify and address any environmental issues associated with projects. | DMWS | Ongoing | Included in capital budgets for each project |
| 4.2 | Report on compliance with Environment Protection Licences. | WSOE | Annually | Included in recurrent budget |
| 4.3 | Publish pollution monitoring data on Council's website. | WSOE | Monthly | Included in recurrent budget |

1. DMWS: Division Manager Water and Sewer, WSOE: Water and Sewer Operations Engineer

### SBP Objective 5: Water supply demand management

| Objective | | | | |
|---|---|---|---|---|
| Efficient water use in all customer sectors. | | | | |
| **Performance Target** | | | | |
| Average annual residential demand is less than 130 kL/residential property/a (rolling 5-year average). | | | | |
| **Strategy** | | | | |
| Implement best-practice demand management strategies. Review pricing annually. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 5.1 | Annual review of water supplied, customer demand and losses for each scheme to identify any trends and inform future demand management planning. | WSPE | September each year | Included in recurrent budget |
| 5.2 | Daily monitoring and reporting of demand during drought or periods of high demand | WSOE | As required | Included in recurrent budget |
| 5.3 | Five-year review of demographic and demand forecast (coinciding with the release of each Census) | WSPE | Every 5 years (2023) | $50,000 |

1. WSPE: Water and Sewer Project Engineer, WSOE: Water and Sewer Operations Engineer

### SBP Objective 6: Sewer flow management

| Objective | | | | |
|---|---|---|---|---|
| Reduce sewer infiltration and inflow. | | | | |
| **Performance Target** | | | | |
| Targeted mains and manhole relining programs are implemented. Identified sewer defects are repaired. | | | | |
| **Strategy** | | | | |
| Complete sewer system repairs as part of renewal program. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 6.1 | Continue CCTV inspections and implement asset renewal program. | WSOE | Ongoing | $200,000 p.a. |
| 6.2 | Smoke testing in high flow catchments to identify illegal sewer connections. | WSOE | Ongoing | $50,000 p.a. |
| 6.3 | Sewer network modelling for all catchments to reflect current and future conditions. | WSPE | Ongoing | Included in strategic planning budget |

1. WSPE: Water and Sewer Project Engineer, WSOE: Water and Sewer Operations Engineer

### SBP Objective 7: Recycled water management

| Objective | | | | |
|---|---|---|---|---|
| Manage public health and environmental risks from recycled water management practices. | | | | |
| **Performance Target** | | | | |
| Compliance with AGWR. | | | | |
| **Strategy** | | | | |
| Develop and implement risk-based recycled water management systems for each recycled water application. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 7.1 | Preparation of recycled water management system for Bodalla sewerage. | WSPE | 2023 | Included in strategic planning budget |
| 7.2 | Preparation of recycled water management system for Catalina Country Club and Hanging Rock playing fields. | WSPE | 2023 | Included in strategic planning budget |
| 7.3 | Preparation of recycled water management system for Moruya sewerage. | WSPE | 2024 | Included in strategic planning budget |
| 7.4 | Preparation of recycled water management system for Tuross sewerage. | WSPE | 2024 | Included in strategic planning budget |
| 7.5 | Preparation of recycled water management system for Tomakin. | WSPE | 2026 | Included in strategic planning budget |

1. WSPE: Water and Sewer Project Engineer

### SBP Objective 8: Drought and emergency management

| Objective | | | | |
|---|---|---|---|---|
| Responsive, efficient and acceptable drought and emergency management strategies are implemented. | | | | |
| **Performance Target** | | | | |
| A feasible emergency and drought management strategy is developed. Water supplies are secure. | | | | |
| **Strategy** | | | | |
| Increase drought storage. Prepare and implement sound drought and emergency management procedures. | | | | |
| **No.** | **Action** | **Responsibility** | **Timing** | **Cost** |
| 8.1 | Prepare DERCP | DWMS | 2023 | Included in strategic planning budget |
| 8.2 | Construct new southern storage | DWMS | 2024 | $130 million |
| 8.3 | Construct new SWTP | DWMS | 2029 | $43 million |
| 8.4 | Review effectiveness of drought management procedures during drought conditions | WSPE | During drought | Included in recurrent budget |

1. DMWS: Division Manager Water and Sewer, WSPE: Water and Sewer Project Engineer

# 13. COMMUNITY INVOLVEMENT

The community involvement plan determines customer satisfaction targets and establishes methods for customer and community involvement in decision making.

Effective communication provides a strong foundation upon which Council can more effectively develop and maintain the community's assets. If aligned with Council's operating goals and plans, effective communication can increase the speed at which these goals are achieved. Council is committed to consulting with water supply and sewerage customers regularly to keep them informed of current developments and to obtain feedback on major projects. In 2021/22, ESC reviewed all previous community engagement which had informed the previous Community Strategic Plan and undertook further community engagement through surveys, workshops, written submissions, information stalls and local media to inform the development of the *Community Strategic Plan - Our Eurobodalla* (ESC, 2022b).

As part of the development of the 2016 IWCM Strategy, a Project Reference Group was formed to:

- Provide input on all existing and potential issues that affect the community relating to provision of the urban water service over the next 30 years.
- Help identify suitable options for managing these issues.
- Help review and confirm the proposed IWCM Strategy.

Since then, targeted consultation has been undertaken with relevant parts of the community regarding specific issues that directly affect them. Council has consulted with the communities of Potato Point, Nelligen and Akolele regarding the new sewerage schemes and water supply systems. Information on major projects is included on Council's website (Major Projects page) including progress of the new sewerage schemes and the water supply augmentation strategy.

Council continues to liaise with regulatory agencies (NSW Health, EPA, DPE etc.) regarding sewerage system licence compliance, drinking water management, best-practice water supply and sewerage management, infrastructure approvals and the development of water sharing plans.

ESC has consulted with customers in South Durras and Congo regarding the results of waterway health assessments and the proposed strategy for sewerage services in these villages (Sections 7.4 and 7.9). Customers in the remaining unserviced villages (Central Tilba, Tilba Tilba and Mystery Bay) and the wider community will be consulted in relation to the development of water and sewerage facilities, particularly with regard to waterway health assessments, OSSM system performance, technical options, affordability and willingness to pay as this information becomes available. This IWCM Strategy and SBP will also be placed on public exhibition.

Consultation regarding pricing of water and sewerage services will be undertaken through the annual public exhibition of the proposed revenue policy.

ESC aims to be responsive to complaints raised by the community. Council has a Complaints Policy (ESC, 2022b) to facilitate a consistent, fair and equitable resolution to customer complaints at the earliest opportunity and in the most efficient, prompt and professional manner.

### SBP Objective 9: Customer and community involvement

| Objective | | | | |
|---|---|---|---|---|
| Provide information on the feasible options for the village water supply and sewerage schemes including financial impacts.<br>Gain community ownership of major asset management decisions and ensure affordability and marketability of the project outcomes. | | | | |
| **Performance Target** | | | | |
| All major projects (greater than $2 million construction cost) and decisions are subject to a community information process. | | | | |
| **Strategy** | | | | |
| Provide accurate information to the community to create awareness of the issues, receive community input into decision-making processes including willingness-to-pay for asset development and create a sense of community ownership. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 9.1 | Obtain feedback on pricing structure through public exhibition of Revenue Policy. | DMWS | Annually | Included in recurrent budget |
| 9.2 | Provide information on waterway health, OSSM system performance and the feasible options for the village water supply and sewerage schemes including financial impacts. | WSPE | As available | Included in recurrent budget |
| 9.3 | Advertise IWCM Strategy and SBP and invite submissions | DMWS | 2023 | Included in recurrent budget |

1. DWMS: Division Manager Water and Sewer, WSPE: Water and Sewer Project Engineer

### SBP Objective 10: Customer satisfaction

| Objective | | | | |
|---|---|---|---|---|
| Achieve customer satisfaction in water supply and sewerage services | | | | |
| **Performance Target** | | | | |
| The majority of customers are satisfied with Council water supply and sewerage services. | | | | |
| **Strategy** | | | | |
| Communicate with customers and measure customer satisfaction. | | | | |
| **No.** | **Action** | **Responsibility[1]** | **Timing** | **Cost** |
| 9.1 | Communicate important initiatives with customers. | DMWS | As required | Included in capital budget for individual projects |
| 9.2 | Include questions in customer surveys to determine satisfaction with water supply and sewerage services. | GM | Annually | Included in recurrent budget |

1. GM: General Manager, DWMS: Division Manager Water and Sewer

# 14. WORK FORCE PLAN

Council delivers services to the community through four departments and the General Manager's office. Water and sewer services are provided through the Infrastructure Services department. The Water and Sewer Services organisation structure is shown on Figure 55 (based on the organisation review conducted in August 2022).

Council has an ageing workforce with a median age over 46 years which presents challenges including knowledge management, skill transfer, flexible work options and transition to retirement. Difficulties attracting staff due to the diminished labour market and increase in property prices and lack of residential rental properties are also challenges that may affect delivery of urban water services (ESC, 2022c). The ESC *Workforce Management Plan* (2022-2026, ESC, 2022c) includes actions to attract and retain younger workers, increase in flexible working arrangements for older employees and increase in diversity of employees in addition to workforce planning and development. ESC will ensure that adequate resources are made available to comply with Council's legal obligations. Council has implemented a strong preventive approach to WHS issues which is designed to reduce workplace injuries.

ESC conducts scheduled inspections targeting work practices of operations teams on a 6-monthly basis and construction teams on a 3-monthly basis.

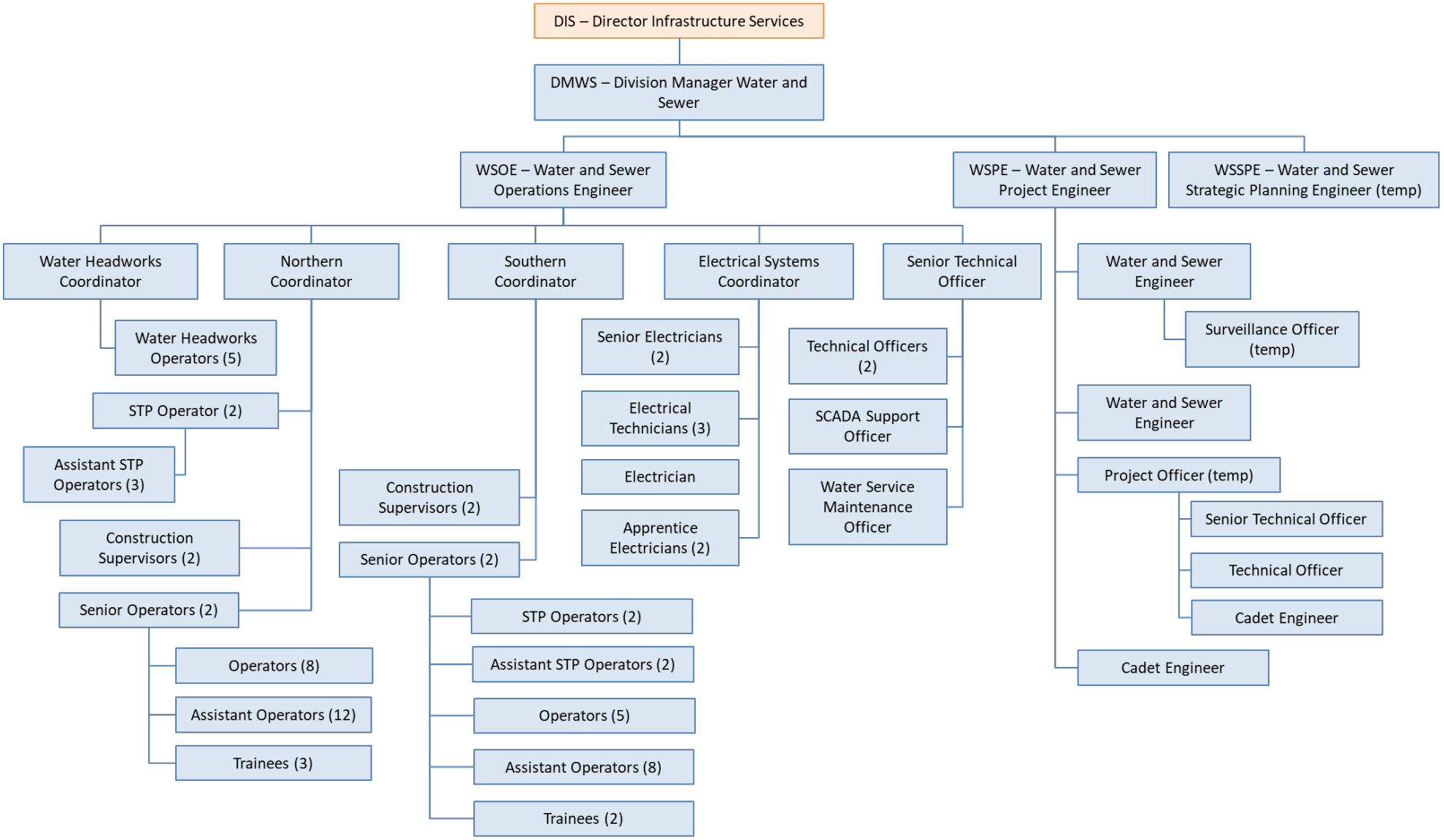


**Figure 55: ESC water and sewer services organisation chart**

**SBP Objective 11: Human resources**

| **Objective** | | | | |
|---|---|---|---|---|
| Appropriate and qualified staff deliver the water supply and sewerage services in a safe manner | | | | |
| **Performance Target** | | | | |
| Sufficient and adequately trained staff can provide the levels of service.<br>Zero lost time incidents. | | | | |
| **Strategy** | | | | |
| Ensure all staff training is up to date.<br>Review staff requirements (numbers and competency) and maintain appropriate staff numbers. | | | | |
| **No.** | **Action** | **Responsibility** | **Timing** | **Cost** |
| 11.1 | Staff training and competency reviews | DMWS | Annual | Included in budget |
| 11.2 | Employ an additional operational team (Batemans Bay - Nelligen water and sewerage) | DWMS | 2023 | $300,000 p.a. |
| 11.3 | Employ an environmental engineer to replace temporary project officer | DWMS | 2023 | $150,000 p.a. |
| 11.4 | Employ two additional headworks operators (SWTP) | DWMS | 2029 | $200,000 p.a. |
| 11.5 | Workforce planning | DWMS | Annual | Included in budget |

1. DMWS: Division Manager Water and Sewer

# 15. TOTAL ASSET MANAGEMENT PLAN

The aim of total asset management is to provide, operate, and maintain physical assets over their whole life cycle to achieve the levels of service at the least cost while still satisfying statutory and regulatory requirements. The key elements of a total asset management approach are:

- Operation Plan.
- Maintenance Plan.
- Capital Works Plan.

The total asset management plan (TAMP) components are shown on Figure 56 and discussed below.

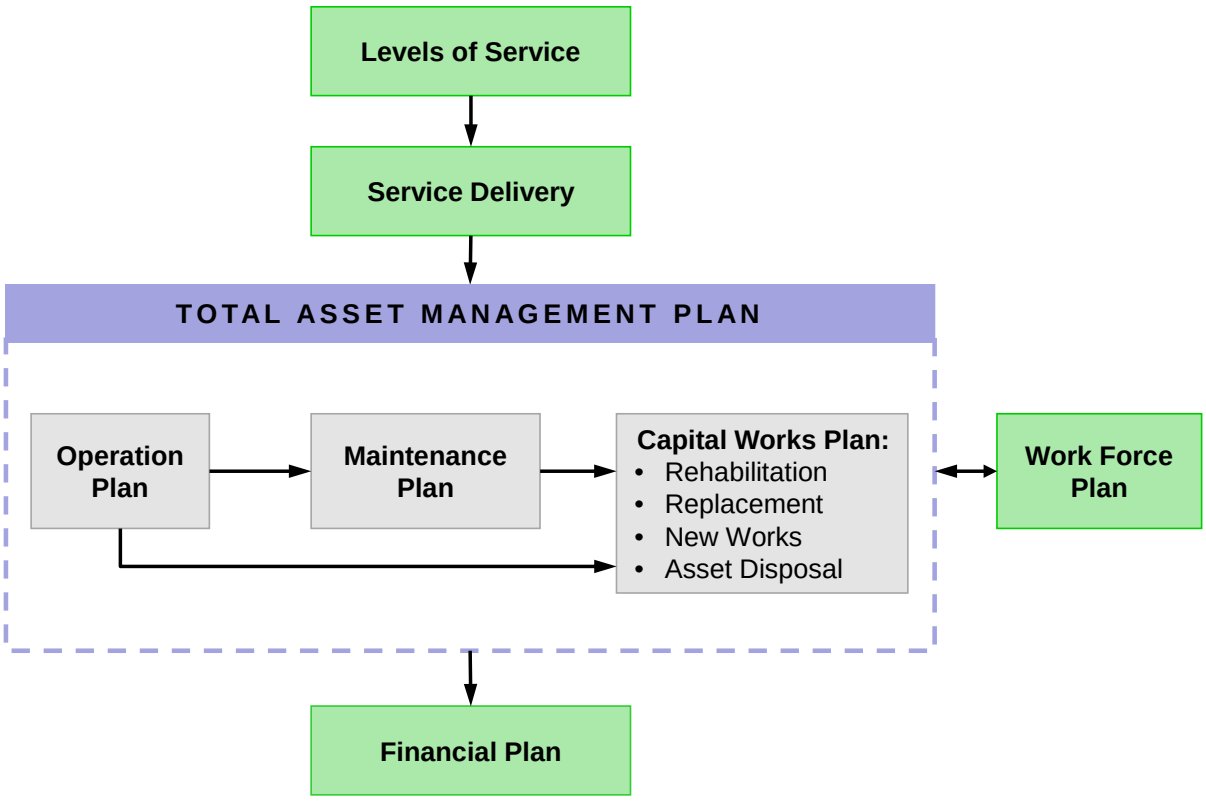


**Figure 56: Total Asset Management Plan components**

Asset management includes day-to-day operation, monitoring and maintenance tasks and the medium to long term work required in planning, creation, renewal and disposal:

- Maintenance - the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life and activities.
- Renewal - the activities that return the service capability of an asset to that which it had originally provided.
- Acquisition – the activities to provide a higher level of service or a new service that did not exist previously.

The purpose of the Operation Plan is to ensure that the service objectives are achieved at the least cost and that the impact of any breakdowns or outages is minimised.

The Maintenance Plan supports the Operation Plan by ensuring that the actual outputs, reliability and availability of the individual sub-systems, facilities, and components, as specified in the Operation Plan, are achieved in the most cost-effective manner.

Maintenance includes reactive, planned and cyclic maintenance work activities. Typical activities include:

- Mains flushing.
- Exercising valves.
- Sewer jetting and foaming.

Reactive maintenance is unplanned repair work carried out in response to service requests. Planned maintenance is repair work that is identified and managed through a maintenance management system and

includes inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance. Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold.

Maintenance expenditure levels are considered to be adequate to meet current service levels. Although it may be desirable to increase maintenance levels of service, it is considered a higher priority to utilise increased renewal funding levels in preference to increasing maintenance funding. As a general rule, increased renewal funding will allow the network to be kept in a better condition, thereby reducing the level of maintenance required. Where practicable, maintenance will be directed to pro-active tasks as the actions that are likely to assist in achieving the assumed useful life of the asset and/or lower risk.

The purpose of the Capital Works Plan is to document the anticipated future capital works requirements and expenditures to meet the Levels of Service and provide a basis for financial planning and capital budgeting. Asset renewal, growth and improved levels of service projects have been reviewed as part of the development of this SBP, IWCM Strategy and the associated Financial Plan (Part C: Financial Plan).

**SBP Objective 12: Operations**

| **Objective** | | | | |
|---|---|---|---|---|
| Operate the water supply and sewerage assets in a safe and cost-effective manner which meets the required levels of service. | | | | |
| **Performance Target** | | | | |
| Operations issues do not cause a failure to meet the levels of service. | | | | |
| **Strategy** | | | | |
| Operate the schemes in accordance with documented system procedures, rules and due diligence programs | | | | |
| **No.** | **Action** | **Responsibility** | **Timing** | **Cost** |
| 12.1 | Document and review asset condition as part of the annual review of asset register data. | WSOE | Annually | Included in strategic planning budget |
| 12.2 | Review risks to water supply and sewerage assets resulting from coastal hazards. | DMWS | 2023 | $20,000 |
| 12.3 | Develop options for management of water supply and sewerage assets at risk from coastal hazards for inclusion in Council's CMP for the Open Coast. | DMWS | 2023 | $30,000 |
| 12.4 | Include permanent standby generators in STP upgrades and at major pump stations where feasible. | WSOE | As required | Included in capital works budgets. |

1. WSOE: Water and Sewer Operations Engineer, DMWS: Division Manager Water and Sewer

### SBP Objective 13: Maintenance

| Objective | | | | |
|---|---|---|---|---|
| Maintain the water supply and sewerage assets in a cost-effective manner which meets the required levels of service. | | | | |
| **Performance Target** | | | | |
| Maintenance issues do not cause a failure to meet the levels of service. | | | | |
| **Strategy** | | | | |
| Maintain the schemes in accordance with documented procedures | | | | |
| **No.** | **Action** | **Responsibility** | **Timing** | **Cost** |
| 13.1 | Review scheduled maintenance program and breakdown response procedures to confirm the ability to meet levels of service. | WSOE | Ongoing | Included in strategic planning budget |

1. WSOE: Water and Sewer Operations Engineer

### SBP Objective 14: Capital works

| Objective | | | | |
|---|---|---|---|---|
| Adequate water supply and sewerage infrastructure is provided for present and future customers. | | | | |
| **Performance Target** | | | | |
| Infrastructure capacity and condition issues do not cause a failure to meet the levels of service. | | | | |
| **Strategy** | | | | |
| Review and implement the capital works programs. | | | | |
| **No.** | **Action** | **Responsibility** | **Timing** | **Cost** |
| 14.1 | Review capital works program annually. | DMWS | December each year | Included in strategic planning budget |
| 14.2 | Consider coastal hazards in design of asset augmentation and upgrades. | WSPE | As required | Included in capital works budget |
| 14.3 | Update population and water cycle projections | WSPE | 2023 | Included in strategic planning budget |
| 14.4 | Water and sewer modelling to identify capacity issues | WSPE | ongoing | Included in strategic planning budget |

1. DMWS: Division Manager Water and Sewer, WSPE: Water and Sewer Project Engineer

## 15.1 Risk Management

ESC has prepared a Business Continuity Plan (BCP) for to ensure that appropriate resources and protocols are in place to enable effective response to a business interruption event that can potentially impact on Council's objectives (Echelon, 2021). A critical function sub-plan has been prepared by ESC for water supply services addressing potential process/ function failure scenarios and identifying contingency actions.

# 16. INPUT TO COUNCIL'S INTEGRATED PLANNING AND REPORTING

The Integrated Planning and Reporting (IPR) framework was introduced by the NSW Government in October 2009 to improve all NSW councils' long-term community, financial and asset planning. In response ESC has developed the following strategic plans:

- Community Strategic Plan – Our Eurobodalla 2042 (ESC, 2022b).
- Delivery Program 2022-26 and Operational Plan 2022-23 (ESC, 2022d).
- Annual Reports.

This IWCM Strategy and SBP is Council's Asset Management and Resourcing Strategy for water supply and sewerage.

The following strategies and activities are relevant to water supply and sewerage services:

- Sustainable – Strategy 1.4: Work together in the management and use of our valuable resources:
    - Activity 1.4.1 – Provide safe, reliable and sustainable water and sewer services, guided by the Integrated Water Cycle Management Strategy:
        - Build and renew the water supply network.
        - Operate and maintain the town water supply system.
        - Build and renew the sewer network.
        - Operate and maintain the sewerage system.
        - Review the Integrated Water Cycle Management Strategy.
        - Develop and implement a new integrated water, sewer and stormwater servicing plan for South Batemans Bay CBD.
    - Activity 1.4.2 - Increase water security through construction of the Southern Water Supply Storage:
        - Commence the construction of the Southern Water Supply Storage/Dam.
    - Activity 1.4.3 - Provide opportunities and incentives to encourage responsible use of resources by the community and at Council:
        - Promote and issue rebates and incentives to help conserve water and energy.
        - Provide treated effluent for reuse in the community.
        - Continue to lower energy usage through solar, lighting upgrades and maintenance works to improve energy efficiency at Council facilities.

Outcomes from this IWCM Strategy and SBP will be considered for inclusion in the next review of ESC's IPR documents.

Following implementation of the actions from this IWCM Strategy/SBP, ESC's annual report will include the following:

- Compliance with best-practice requirements.
- Outcomes from the NSW Government's Town Water Risk Reduction Program.

- Compliance with ADWG requirements.
- Status of major projects including the southern dam and village sewerage/water supply schemes.
- Other key achievements.

# PART C: FINANCIAL PLAN

## 17. INTRODUCTION

This section documents the outcomes of the financial analysis of the ESC Water Supply and Sewer funds based on the IWCM Strategy. The aim of this report is to provide information to ESC on the required revenue to be recovered through residential bills and loans. The financial analysis results will also be used to develop a medium-term price path for ESC customers in terms of the TRB for water supply and sewer. ESC also undertakes other financial analyses to review and adopt shorter-term budgets.

## 18. OVERVIEW AND METHODOLOGY

The objectives of financial planning are to recognise the full life cycle costs of service provision and determine appropriate funding strategies to ensure that services remain affordable in the long term. A 30-year planning horizon has been adopted for the modelling of ESC water supply and sewerage businesses. Taking a long-term view highlights the current impact of future actions and allows financial peaks and troughs to be smoothed out to give a consistent pricing path. Capital works programs provide a guide for estimating long-term capital costs. It is accepted that the level of confidence in capital works projections decreases with time from the present. However, it is important to identify future commitments as accurately as possible.

The aim of financial modelling is to:

- Meet the funding requirements of the capital works program and other life-cycle costs associated with the water supply and sewer assets.
- Ensure an appropriate level of cash and liquidity.
- Provide forecasts of sustainable customer bills over the long term.

A financial model was developed for the ESC water supply and sewer funds using FINMOD, the financial planning software developed by the NSW Government (now DPE - Water) for use by non-metropolitan water utilities. The model is used to forecast income streams and projected expenditure (Figure 57).

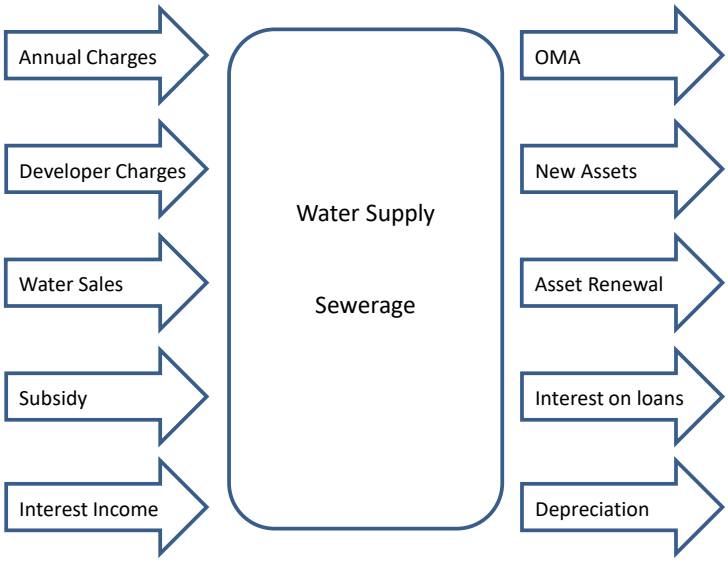


**Figure 57: Elements of financial modelling**

## 18.1 Data and Assumptions

The initial model was developed by ESC staff and modified for use in the IWCM financial plan. Base data utilised in the IWCM Strategy financial models are summarised in the following table.

**Table 21: Input data (2022$)**

| Item | Data Used | |
|---|---|---|
| | Water Supply | Sewerage |
| Historical data | Historical financial statements for 2020/21 | |
| Financial data (2021/22 onwards) | General inflation 2.5%, capital works inflation 2.5%, borrowing interest rate 3.5%, investment interest rate 1.5% | |
| Term of new loans | 20 years | |
| Residential assessments (2020/21) | 20,647 | 19,437 |
| Non-residential assessments (2020/21) | 1,060 | 1,180 |
| Growth rate – residential assessments[1] | 0.50% p.a. | 0.50% p.a. |
| Growth rate – non-residential assessments | 0.50% p.a. | 0.50% p.a. |
| 2021/22 and 2022/23 TRB per assessment | $796 | $1,010 |
| Developer charges income (2023 onwards) | $1,200,000 p.a. | $1,170,000 p.a. |
| Revenue split – total residential revenue | 82.25% | 87.1% |
| Revenue split – total non-residential revenue | 15.49% | 12.9% |
| Revenue split – total other revenue | 2.26% | - |
| 30-year (2022-2051) capital works program ($k) | $300,850<br>(Figure 58 and Appendix 2) | $317,175<br>(Figure 59 and Appendix 2) |
| Capital works grants ($) | Approved grants:<br>$77,800,000 – southern storage<br>$1,500,000 – Nelligen water supply | Approved grants:<br>$450,000 – Potato Point sewerage<br>$650,000 – Akolele sewerage<br>$2,000,000 – Nelligen sewerage |
| 30-year (2022-2051) operation, maintenance and administration (OMA) costs | $328,200,000 or $10,900,000 p.a. (refer Appendix 2) | $452,300,000 or $15,100,000 p.a. (refer Appendix 2) |
| Cash (2021) | $44,157,000 | $21,497,000 |
| Debt (2021) | $784,000 | $15,990,000 |
| Replacement cost of system assets (2021) | $370,309,000 | $449,658,000 |

1. PWA (2020) excluding backlog villages.

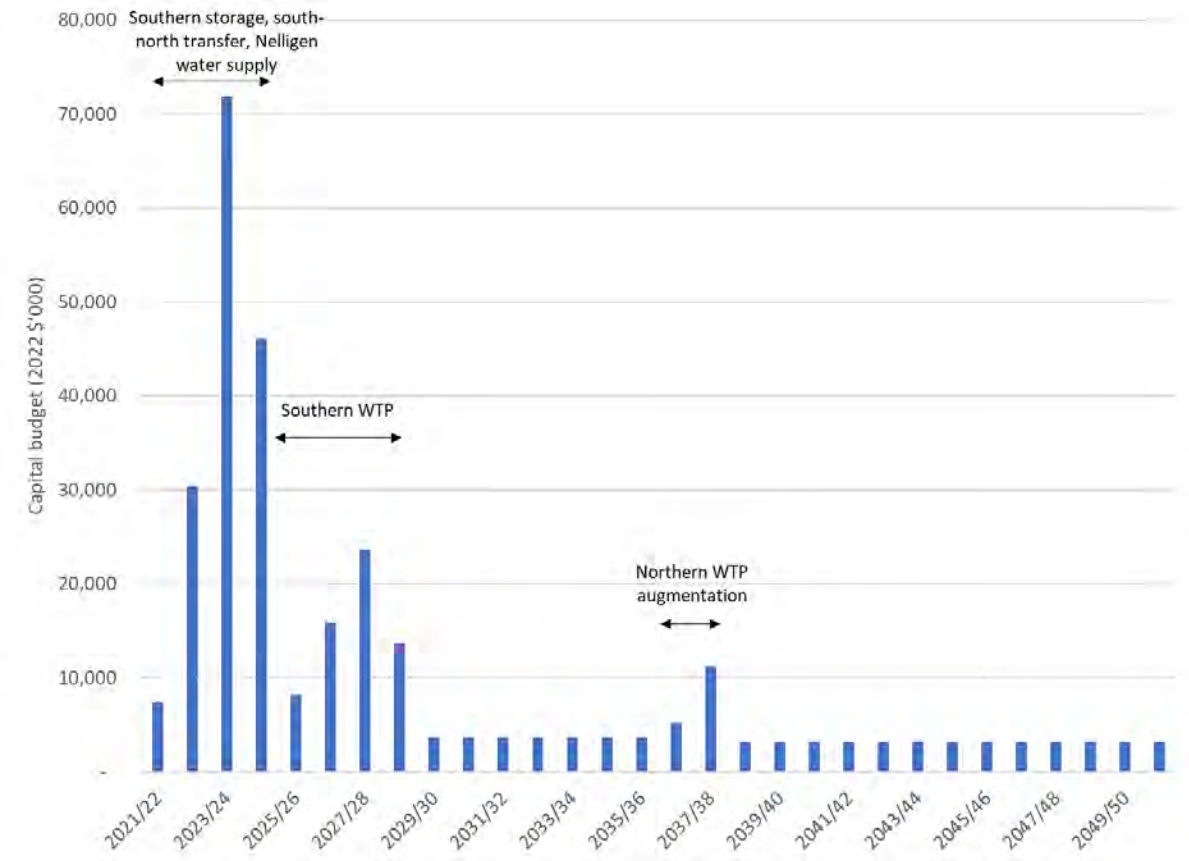


**Figure 58: Water capital works budget**

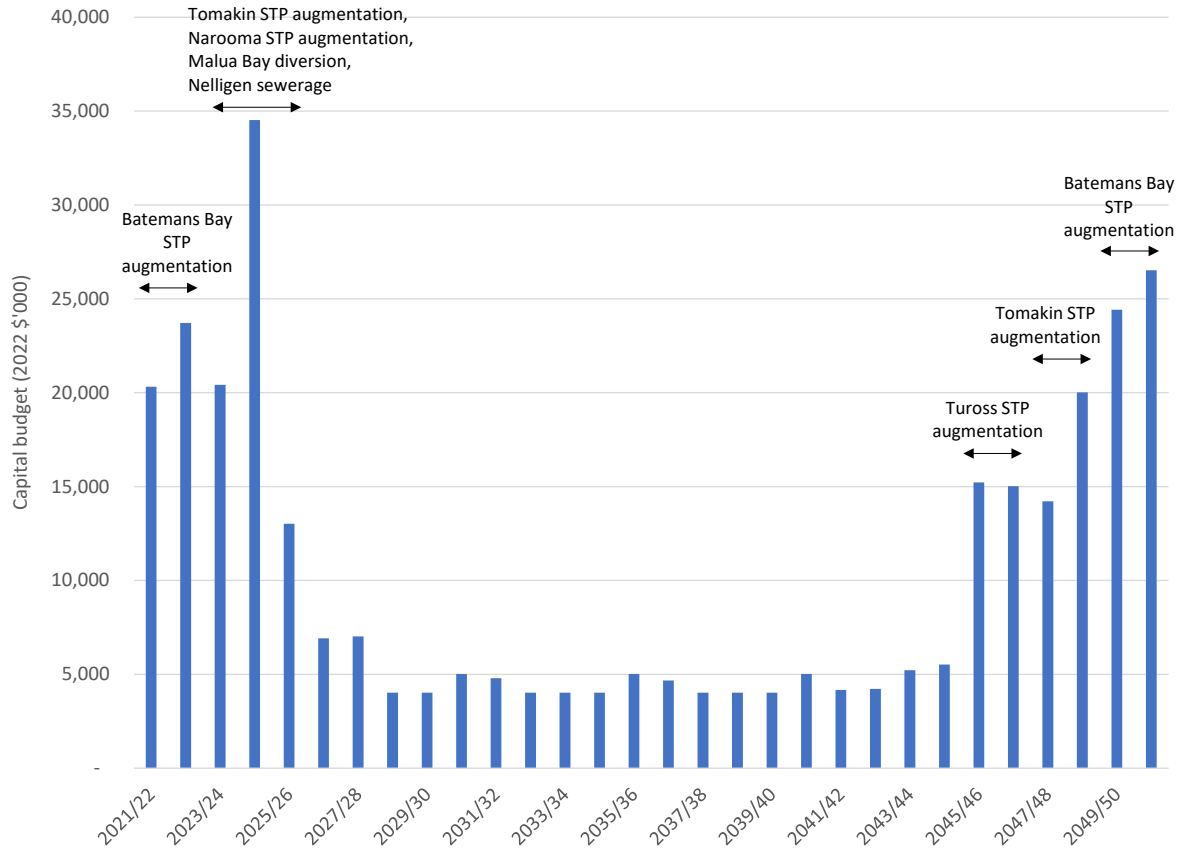


**Figure 59: Sewer capital works budget**

# 19. MODEL OUTPUTS

The financial modelling provides an indication of the relative cost to ESC and its customers of the water supply and sewerage services. The main output of the financial plan is the TRB which is defined as the annual bill paid by a customer who is not a pensioner and not a vacant lot and uses the average water demand.

The purpose of the modelling is to identify the lowest TRB that will enable Council to fund the OMA expenses and the capital investment of the schemes. The TRB is used as a measure of affordability and determines the price path Council needs to set in order to meet the levels of service. Council will develop a tariff structure that will provide this income.

FINMOD provides detailed financial statements for each scheme. The financial statements for the base cases are included in Appendix 3. Sensitivity analysis cases have been developed to identify the impact of different variables on the TRB (refer Section 19.2).

The financial outcomes (e.g. TRB, borrowings and cash and investment) are shown in 2021/22 dollars. The figures shown in this plan need to be adjusted for inflation.

## 19.1 Initial Cases

Initial cases were developed for the water supply and sewer financial models to determine the preferred funding scenario. The initial cases were developed by finding the combination of funding from internal and external sources (i.e. loans and subsidies) that gives a stable and affordable TRB.

Where possible, the capital works programs and recurrent expenditure are funded through existing cash levels which are determined by the amount of income generated from bills. Where planned expenditure exceeds the available cash levels, loans are required. The level of borrowing can be adjusted with resulting changes in the TRB to suit ESC's requirements. For example, additional borrowing in the short to medium term can reduce the required TRB in later years. Grants may also be available for works that improve the level of service.

A minimum cash level of $2.0 million has been maintained for each fund.

### 19.1.1 Sewerage

Two initial cases have been modelled for the sewer fund as follows:

1. No increase in TRB (apart from inflation).
2. 2% increase in TRB for 3 years (2023/24 – 2025/26) in addition to inflation.

Both cases include the loan taken by ESC in 2022 ($11.4 million) and the planned loan for 2023 ($16.5 million). The following figures show the resulting TRB, cash and investments and borrowing required for each of the initial cases.

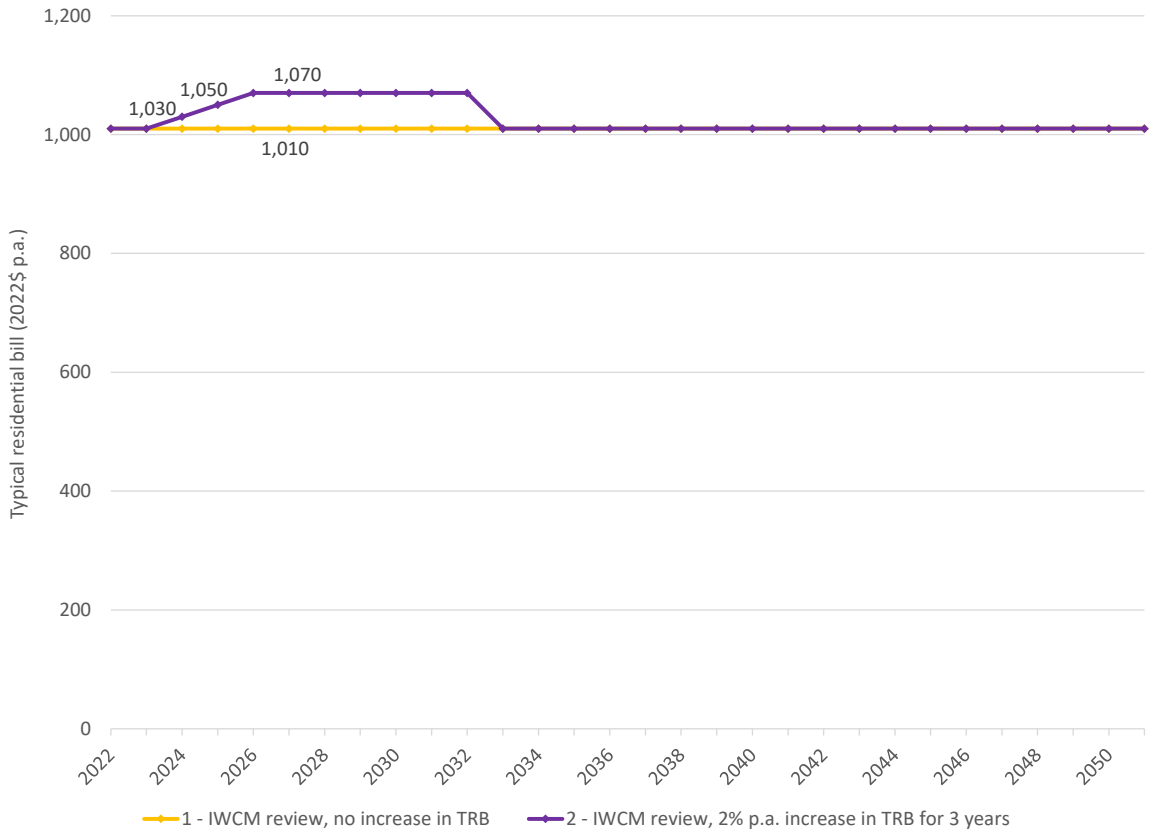


**Figure 60: Sewerage TRB – initial cases**

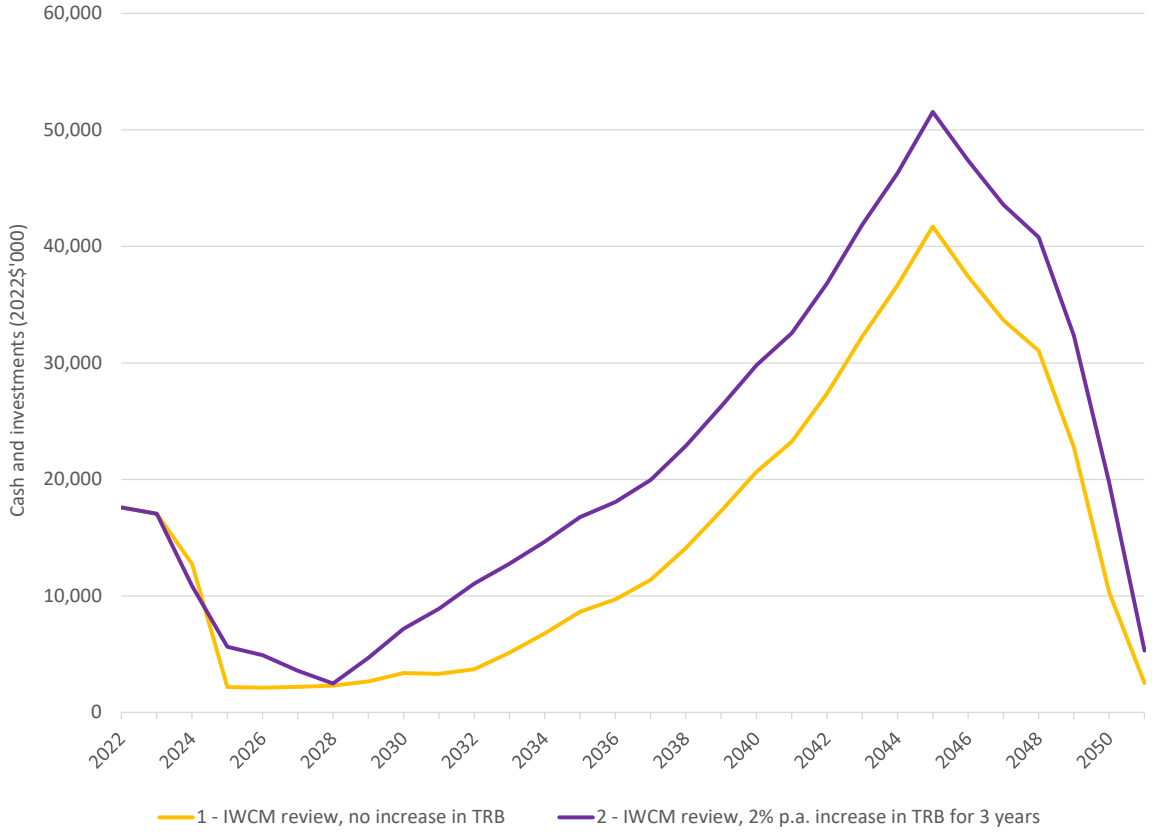


**Figure 61: Sewerage cash and investments – initial cases**

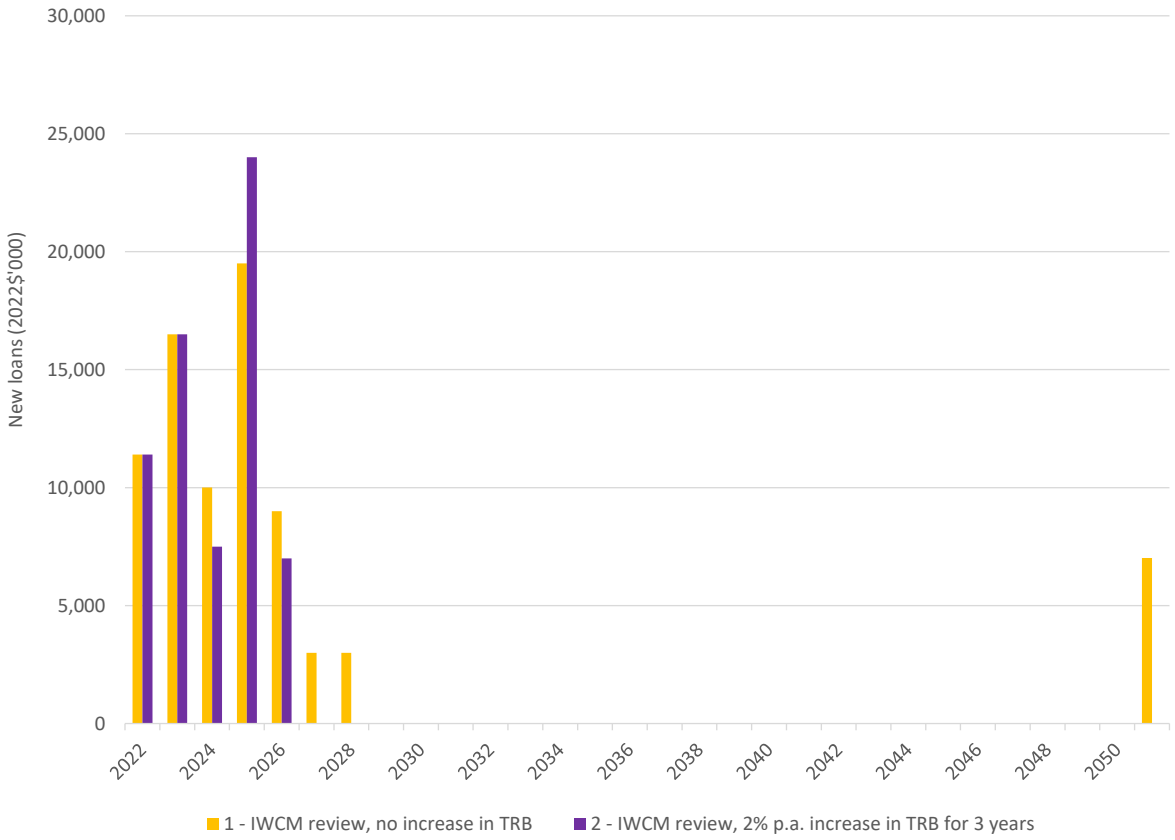


**Figure 62: Sewerage new loans – initial cases**

ESC's sewerage TRB in 2020/21 was $990 p.a. which was the 10th highest in NSW (of 80 LWUs), 25% higher than the weighted median of all NSW non-metropolitan LWUs and 43% higher than the national median (including NSW metropolitan LWUs). Sewerage charges were increased by 2% p.a. in 2022 and 2023 despite inflation being higher than expected at approximately 3.8% and 6.1% respectively. Although economies of scale, topography and infrastructure influence the cost drivers for ESC compared to other LWUs, ESC considers that the current cost of living pressures should be considered in setting the future price path. ESC therefore proposes to increase sewerage charges by 2% p.a. for the next 3 years (in addition to the target inflation of approximately 2.5%). Case 2 will be the base case but does not take account of the results of the sensitivity analysis as outlined below.

The projected TRB, levels of borrowing and cash and investments associated with the base case financial projection for sewerage are shown in the following figure.

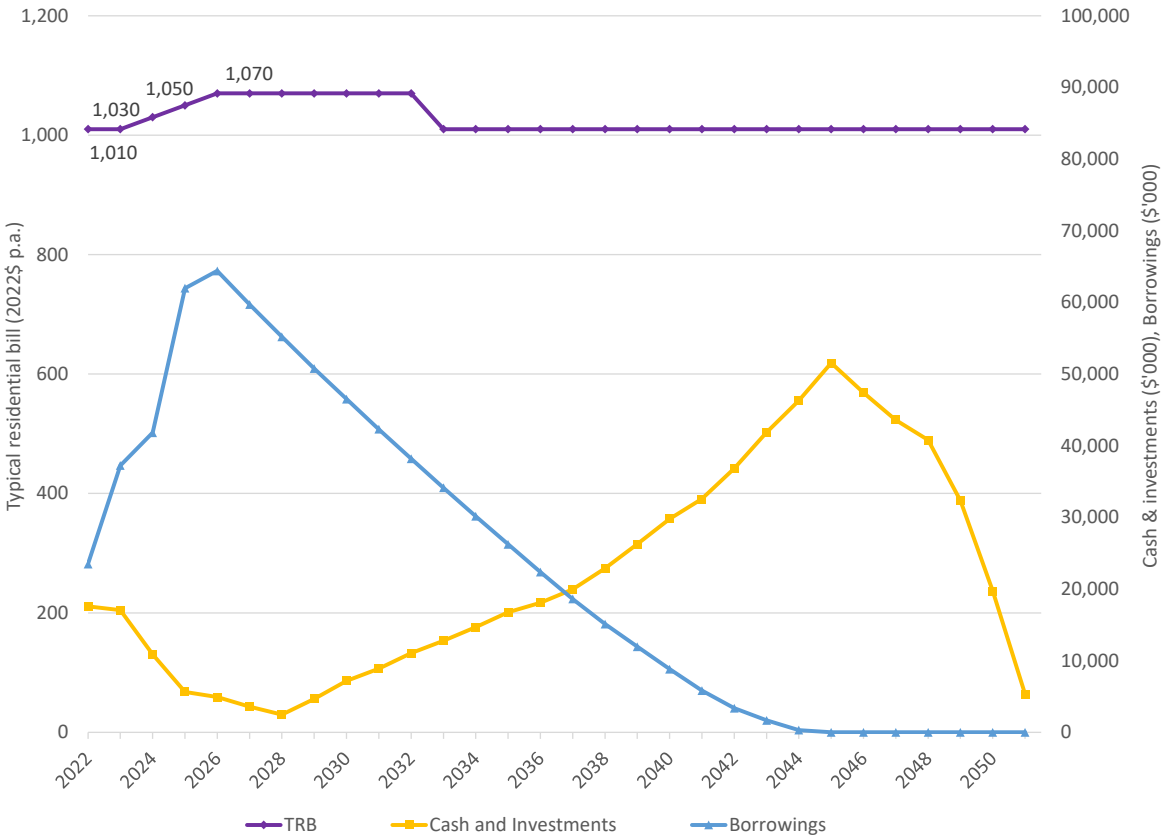


**Figure 63: Sewerage TRB, cash and investments and borrowing – base case**

An additional case has been modelled to test the affordability of the sewerage scheme for South Durras. This case assumes the capital cost of the water supply and sewerage scheme is $30 million with half included in the sewerage fund, construction in 2027 and no subsidy is available. Compared to the base case, the TRB would need to increase by an additional 5% in 2024, 2.7% in 2025 and 1.6% in 2026 (to $1,150 p.a. plus inflation) with additional loans of $9.0 million. ESC considers that the increase in TRB required to fund the South Durras scheme without subsidy is not affordable for the Eurobodalla community.

### 19.1.2 Water supply

An initial case has been modelled for the water fund. This case includes the loan taken by ESC in 2022 ($495,000) and the planned loan for 2023 ($200,000). The modelling indicates that Council can maintain the water supply TRB at $796 per assessment per annum but additional loans will be required in 2024 and 2025 (total $54 million). This will be the base case but does not take account of the results of the sensitivity analysis as outlined below. The projected TRB, levels of borrowing and cash and investments associated with the base case financial projection for water supply are shown in the following figure.

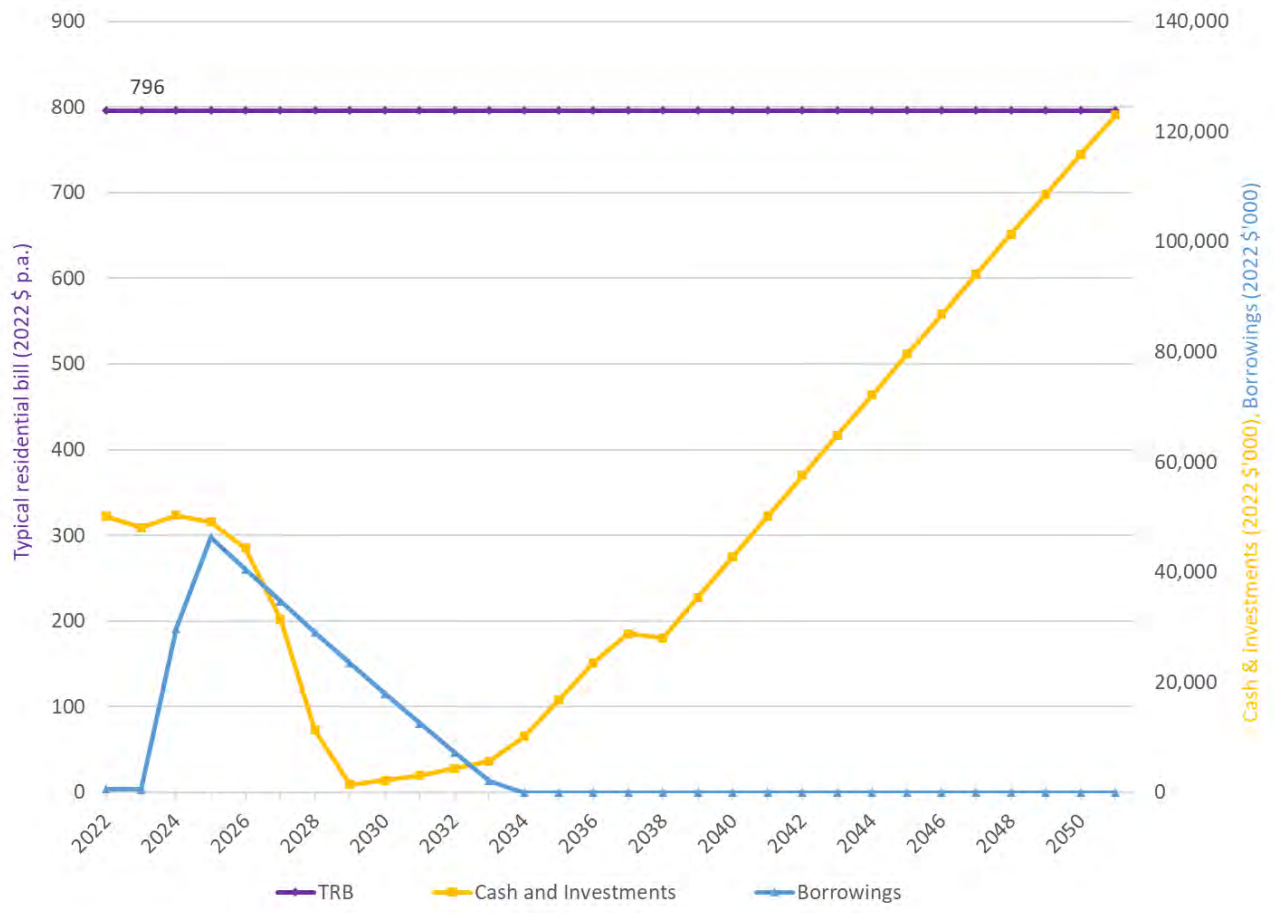


**Figure 64: Water supply TRB, cash and investments and borrowing – base case**

An additional case has been modelled to test the affordability of the water supply scheme for South Durras. This case assumes the capital cost of the water supply and sewerage scheme is $30 million with half included in the water supply fund, construction in 2027 and no subsidy is available. Compared to the base case, the TRB would need to increase by 13% p.a. in 2027 (to $900 p.a. plus inflation) with new loans of $9 million.

ESC's water supply TRB in 2020/21 was $780 p.a. which was the 26th highest in NSW (of 80 LWUs), 31% higher than the weighted median of all NSW non-metropolitan LWUs and 14% higher than the national median (including NSW metropolitan LWUs). ESC considers that the increase in TRB required to fund the South Durras scheme without subsidy is not affordable for the Eurobodalla community, particularly considering the additional increase in sewerage TRB that would be required.

## 19.2 Sensitivity Analysis

ESC will adopt a medium-term price path to provide certainty to its customers. Prior to selection of the TRB to be adopted, it is necessary to undertake a sensitivity analysis to determine the impact of various parameters on the TRB. Each of the cases can be described as a variation of the base case. One parameter is varied between the preferred case and the sensitivity cases. Depending on the results of the sensitivity analysis, the required TRB is selected from the most likely set of financial conditions. Whilst the preferred scenarios are defined as the most likely, there is still a significant level of uncertainty as to the future conditions that will affect the financial status of the water supply and sewerage businesses and the

subsequent bills. Council should allow for some of this uncertainty and reduce the need to increase the price path in the following years.

The sensitivity analysis is summarised in the following table.

**Table 22: Sensitivity analysis**

| Case | Description | TRB (2022$ per assessment) and loans (2022$) for next 5 years | |
|---|---|---|---|
| | | Sewerage | Water supply |
| Base case | Input data as in Table 21 | The TRB increases by 2% p.a. over 3 years (2024 – 2026) to $1,070 with loans of $38.5 million over the next 3 years | No change in TRB ($796 p.a.), $54 million additional loans |
| Higher inflation and interest | Inflation +1% p.a.<br>Borrowing +1% p.a.<br>Investment +1% p.a. | Same as base case | No change in TRB ($796 p.a.), $2 million additional loans |
| Lower inflation and interest | Inflation -1% p.a.<br>Borrowing -1% p.a.<br>Investment -1% p.a. | Same as base case | |
| Higher capital costs | Capital costs for projects (new assets, upgrades and new schemes) increases by 20% from 2024 | The TRB increases by 2% p.a. over 5 years (2024 – 2028) to $1,110 with loans of $52.0 million over the next 3 years | Same as base case |
| Lower growth[1] | Growth is 0.25% p.a. from 2024 (approximately halved) | Same as base case | Same as base case |

1. With lower growth, the income from developer charges would reduce however the projected developer income for the sensitivity cases has been kept the same as the base case (based on previous levels of income).

# 20. PROPOSED PRICE PATHS

There is a significant level of uncertainty as to the future conditions that will affect the financial status of the water and sewer businesses and the subsequent bills. Council should set price paths which allow for some of this uncertainty and reduce the need to change the price path every year.

Council may elect to pay dividends from the water supply and/or sewer businesses to the General Fund. Should ESC wish to make such payments, the price path will need to be increased to create a surplus that will enable dividend payment.

Future changes due to uncontrollable variables such as interest rates, inflation, growth rates, energy costs, etc. may be significant. Thus, the financial models must be revisited on an annual basis and the data updated to avoid a potential shortfall.

The TRBs should be checked and adjusted annually in accordance with inflation.

The current (2022/23) TRB for sewerage is $1,030 p.a. It is recommended that ESC increases the sewerage TRB by 2% p.a. for the next 3 years in addition to inflation. The recommended sewerage price path is shown on Figure 65 in year 1 dollars (2024$ with 2.5% inflation in 2023 included).

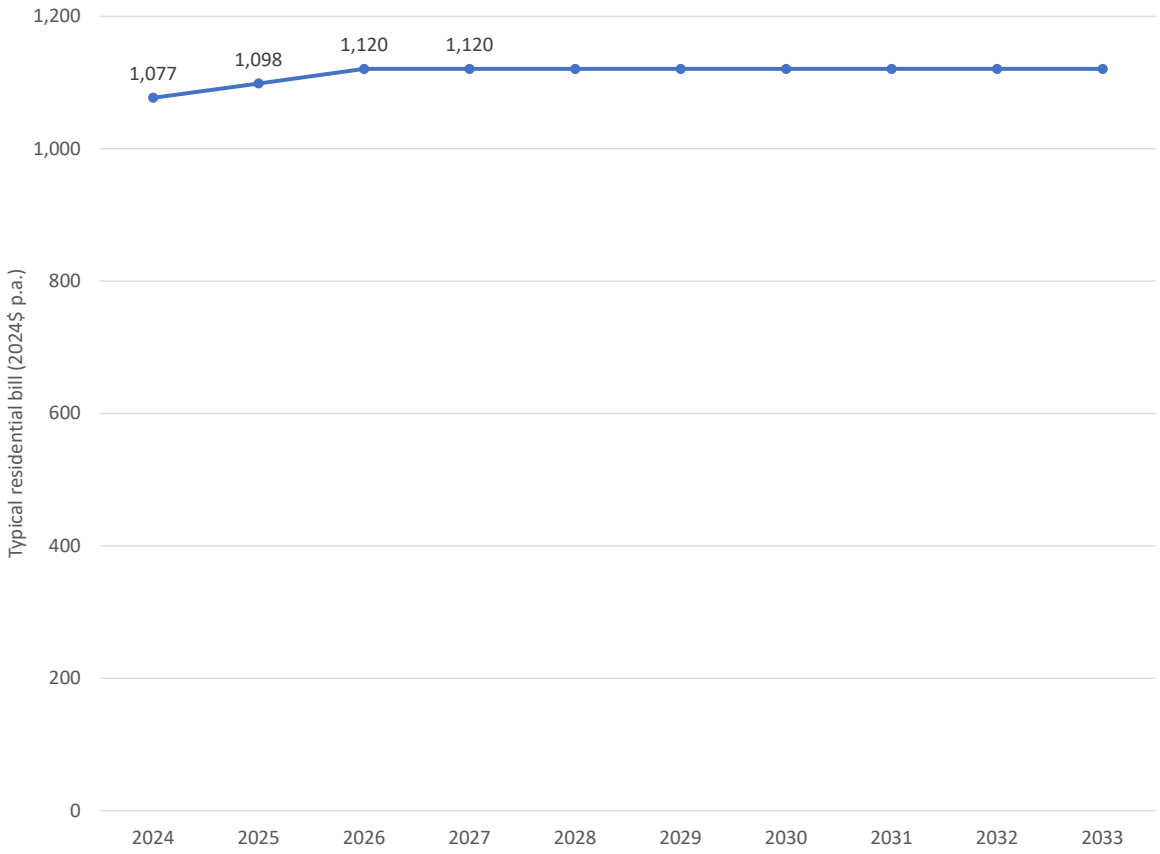


**Figure 65: Recommended sewerage price path**

The current (2022/23) TRB for water supply is $833 p.a. It is recommended that ESC maintains the water supply TRB at the current level (not including inflation). The recommended water supply price path is shown on Figure 66 in year 1 dollars (2024$ with 2.5% inflation in 2023 included).

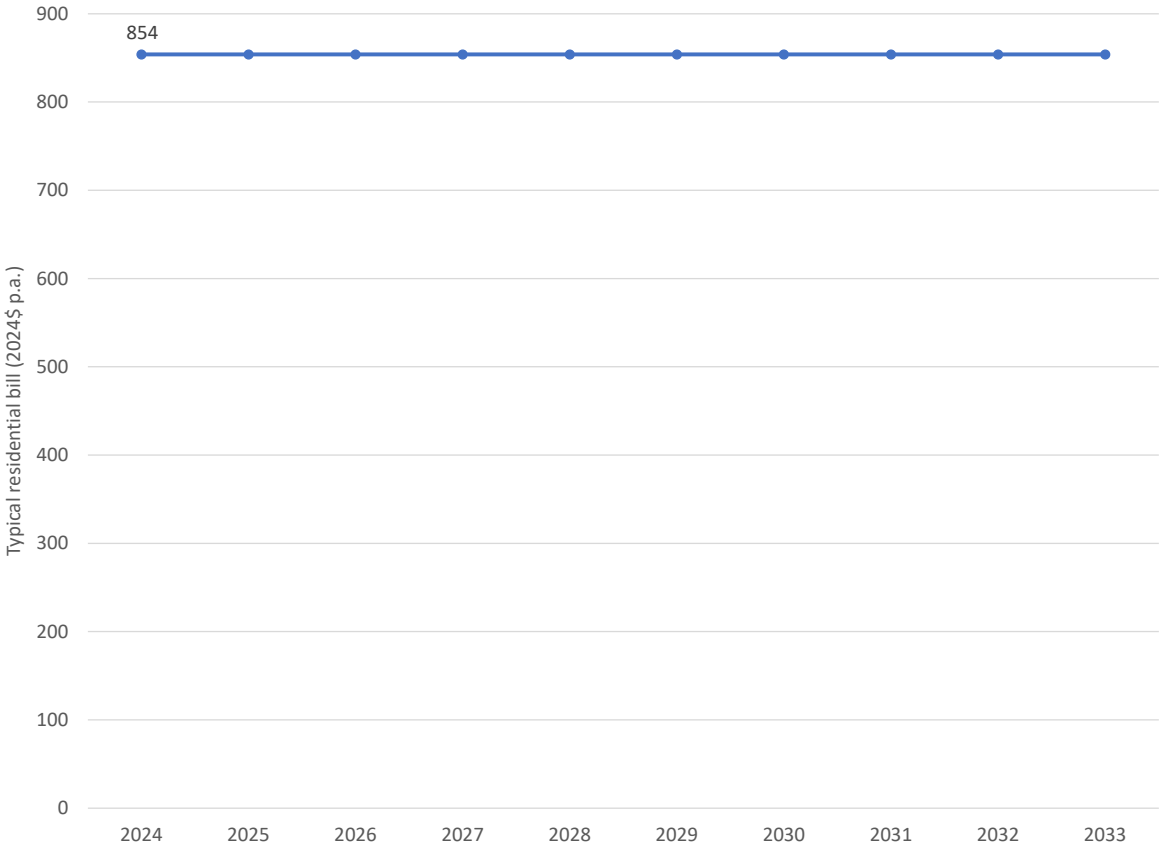


**Figure 66: Recommended water supply price path**

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# ABBREVIATIONS

| | |
|---|---|
| AC | (water supply) Access charge |
| ADWF | Average dry weather flow |
| ADWG | Australian Drinking Water Guidelines |
| AGWR | Australian Guidelines for Water Recycling |
| AHD | Australian height datum |
| AOTS | Aerobic on-site treatment system |
| ARI | Average return interval |
| BASIX | Building Sustainability Index |
| BB | Batemans Bay |
| BCP | Business Continuity Plan |
| CCTV | Closed-Circuit Television |
| cfu | Colony forming unit |
| CTWSSP | Country Towns Water Supply and Sewerage Program |
| DAFF | Dissolved air flotation and filtration |
| DPE | NSW Department of Planning and Environment |
| DPE – Water | NSW Department of Planning and Environment – Water |
| DPI | NSW Department of Primary Industries |
| DWE | Department of Water Energy, former name for DPE - Water |
| DMWS | Division Manager Water and Sewer |
| DWMS | Drinking Water Management System |
| EP | Equivalent persons |
| EPA | Environment Protection Authority |
| EPL | Environmental Protection Licence |
| ESC | Eurobodalla Shire Council |
| ET | Equivalent tenements |
| IDEA | Intermittent Decant Extended Aeration |
| IWCM | Integrated Water Cycle Management |
| GCM | Global climate model |
| GM | General Manager |
| ILI | Infrastructure leakage index |
| IPR | Integrated Planning and Reporting |
| kL | Kilolitres |
| kL/d | Kilolitres per day |
| km | Kilometres |

| | |
|---|---|
| LWU | Local Water Utility |
| mAHD | Metres AHD |
| ML | Megalitres (million litres) |
| ML/a | Megalitres per annum |
| ML/d | Megalitres per day |
| MO | Moruya |
| NA | Narooma |
| NRW | Non-Revenue Water |
| NWTP | Northern WTP |
| OMA | Operation, Management and Administration (cost) |
| OSSM | On-site Sewerage Management (System) |
| PAC | Powdered activated carbon |
| PDD | Peak Day Demand |
| PRP | Pollution Reduction Program |
| PWWF | Peak wet weather flow |
| RSPS | Regional sewage pumping station |
| SBP | Strategic Business Plan |
| SEPP | State Environmental Planning Policy (Resilience and Hazards) 2021 |
| SPS | Sewage pumping station |
| STP | Sewage Treatment Plant |
| SWTP | Southern WTP |
| TAMP | Total Asset Management Plan |
| TO | Tomakin |
| TN | Total nitrogen |
| TRB | Typical Residential Bill |
| TP | Total phosphorous |
| TU | Tuross |
| UC | (water supply) Usage charge |
| UV | Ultraviolet |
| WELS | Water efficiency labelling scheme |
| WHS | Work Health and Safety |
| WSOE | Water and Sewer Operations Engineer |
| WSPE | Water and Sewer Project Engineer |
| WTP | Water treatment plant |

# APPENDIX 1 PERFORMANCE INDICATOR DATA

*ESC submits data on performance indicators to the NSW Government each year. A summary of the data and yearly trends compared to other NSW water utilities is provided in this appendix. The data are provided as nominal values (from the year of reporting). Gaps indicate no data has been reported. The weighted median is the median of the available validated data for the indicator with the number of connected properties applied as weights.*

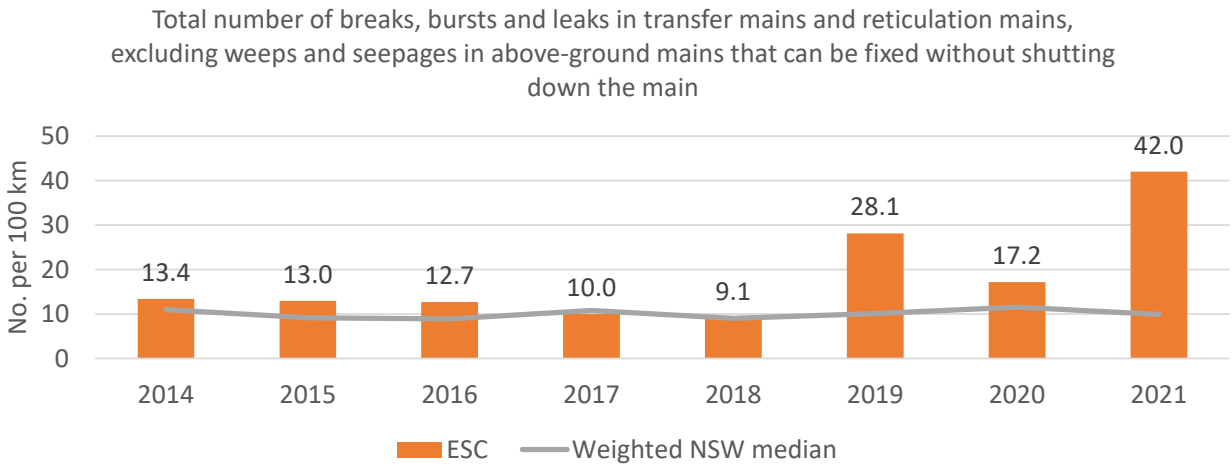



**Figure 67: Water main breaks**

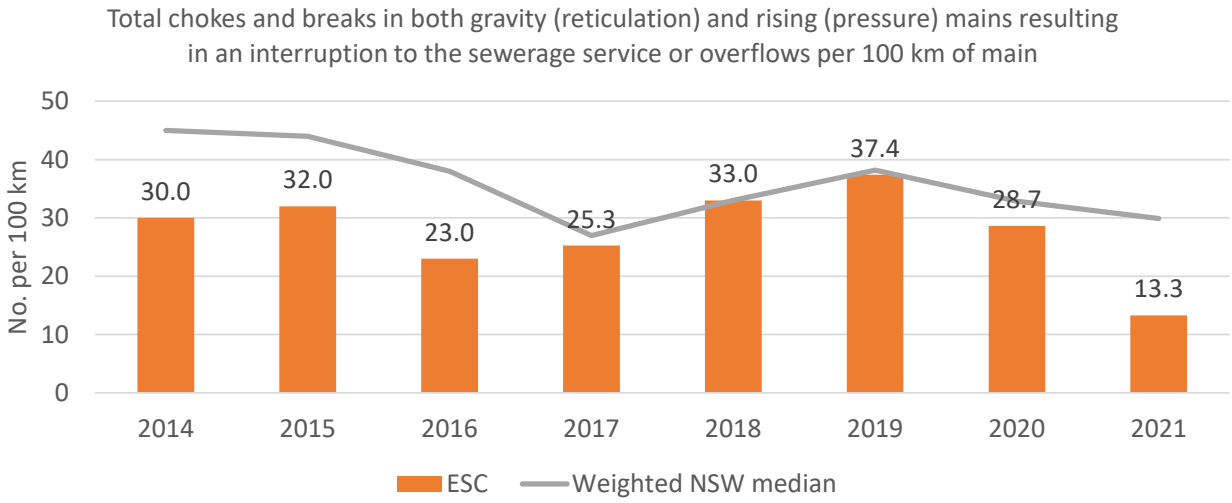



**Figure 68: Sewerage breaks and chokes**

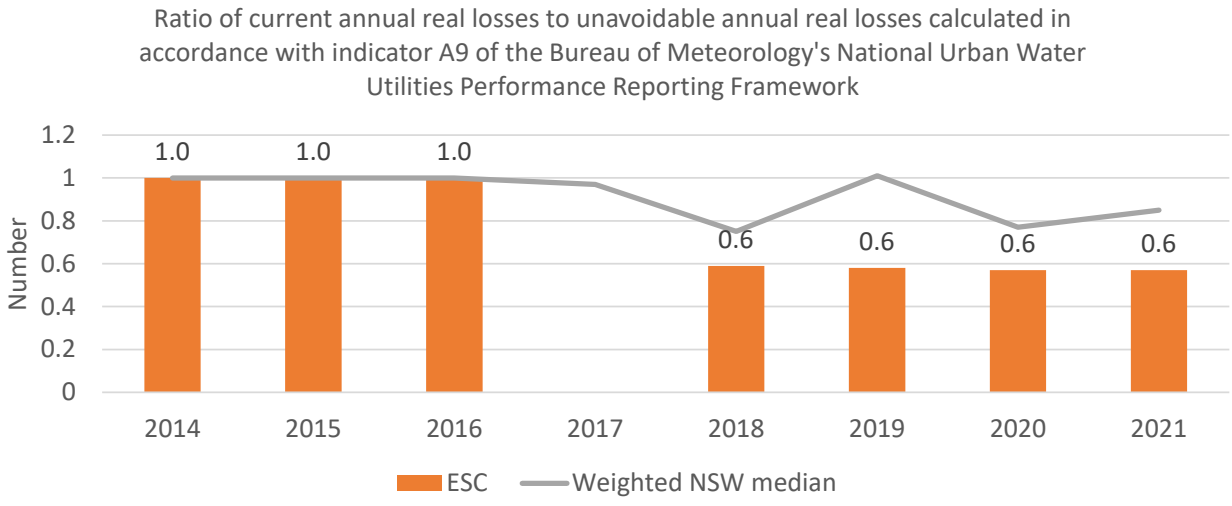



**Figure 69: Infrastructure leakage index**

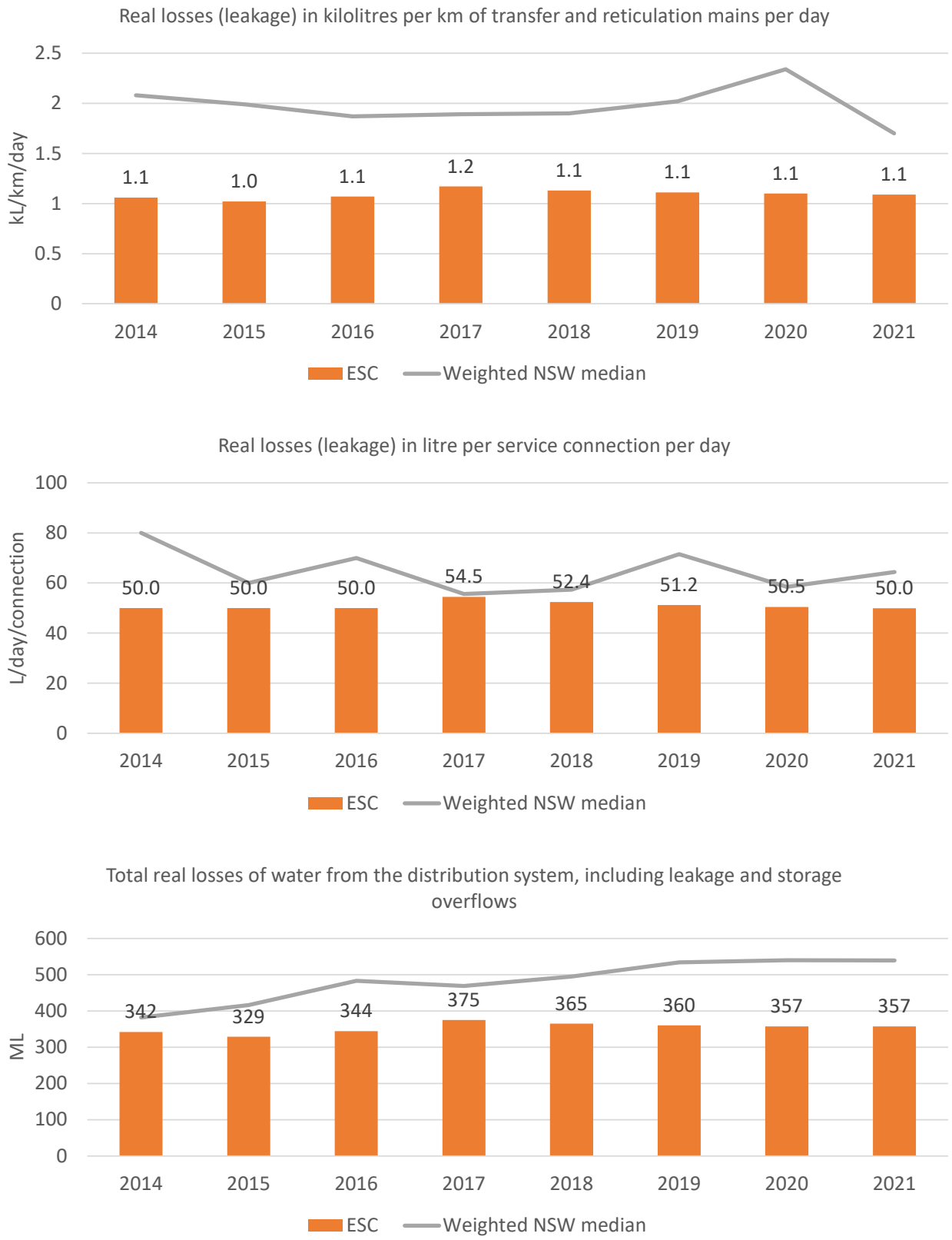



**Figure 70: Real losses (leakage)**

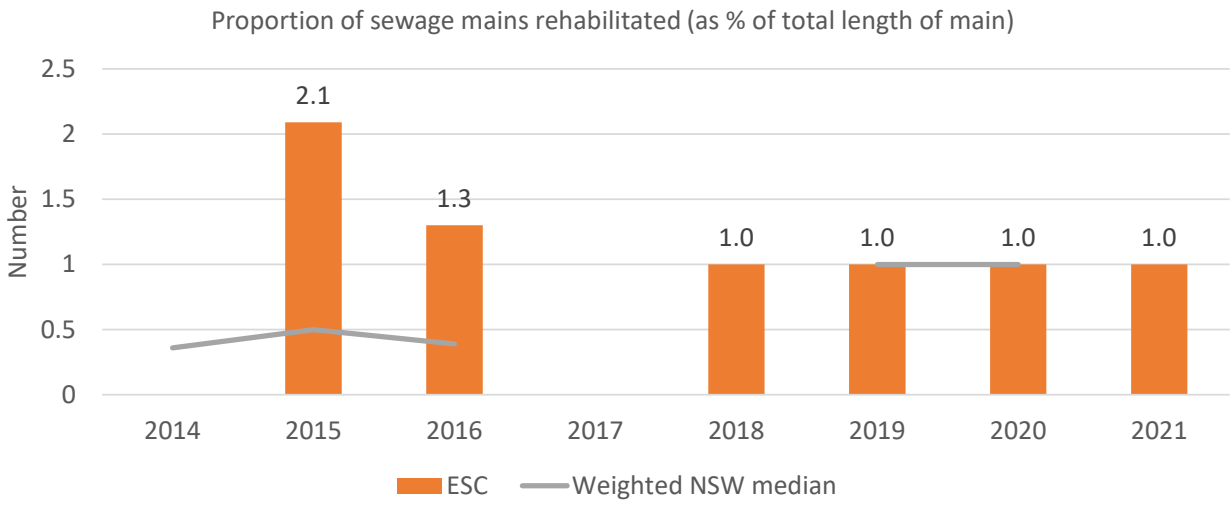



**Figure 71: Rehabilitation of sewerage mains**

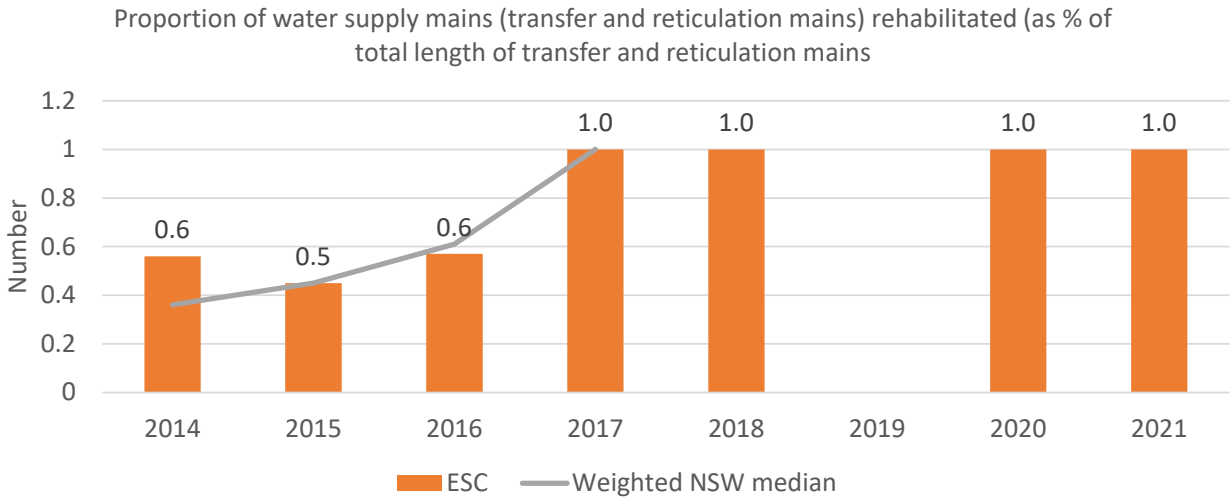



**Figure 72: Rehabilitation of water mains**

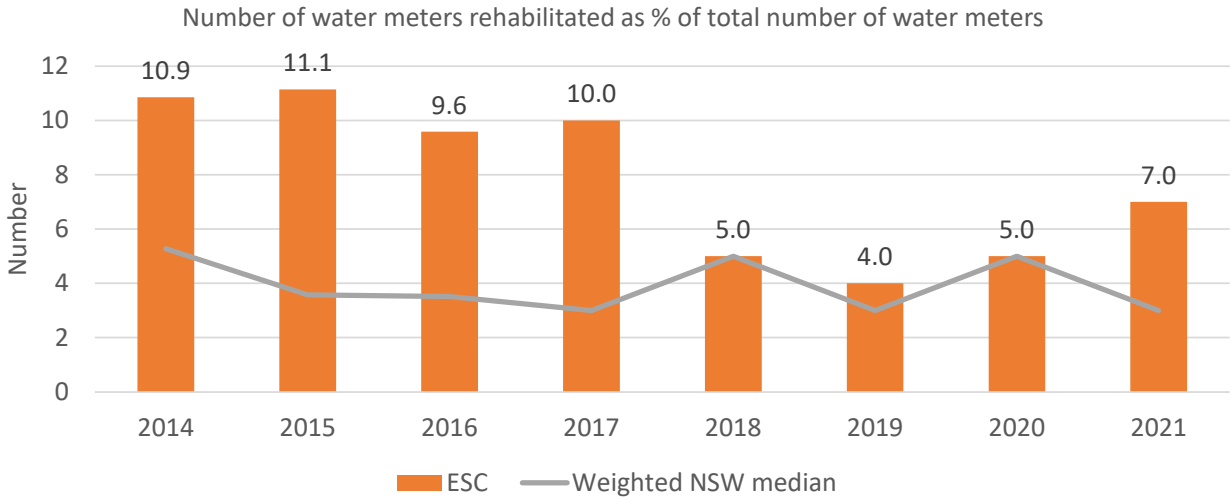



**Figure 73: Rehabilitation of water meters**

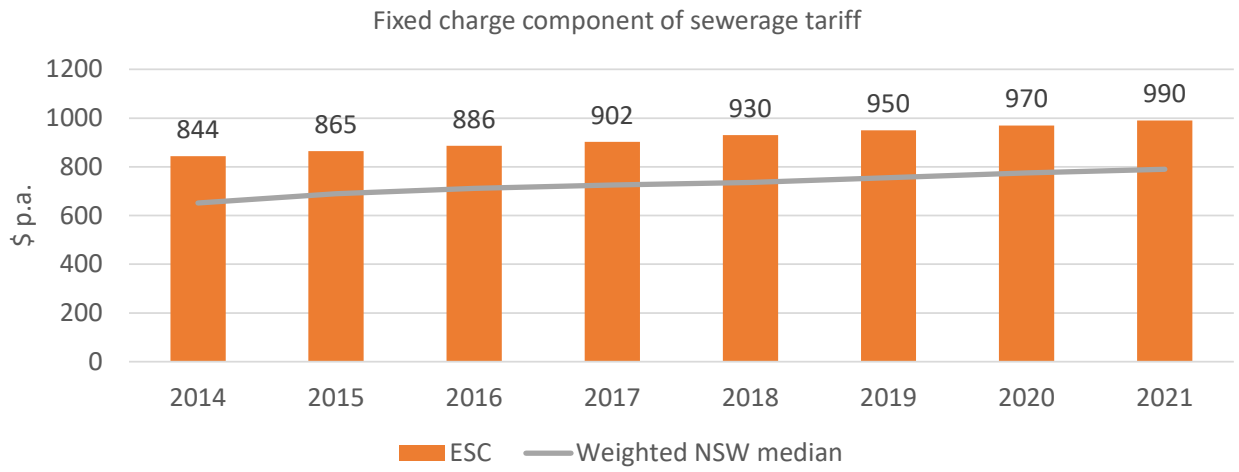



**Figure 74: Sewerage access charge**

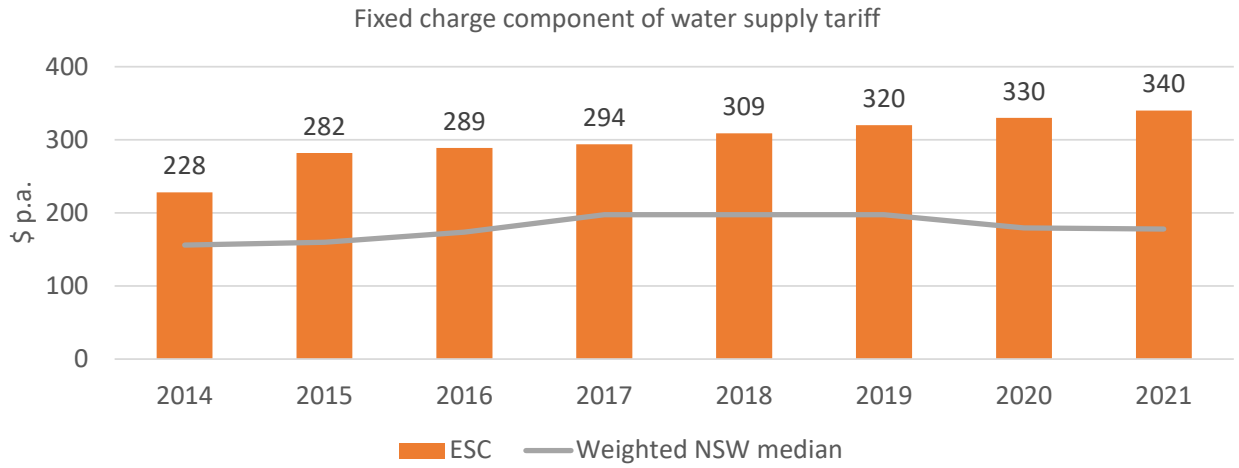



**Figure 75: Water supply access charge**

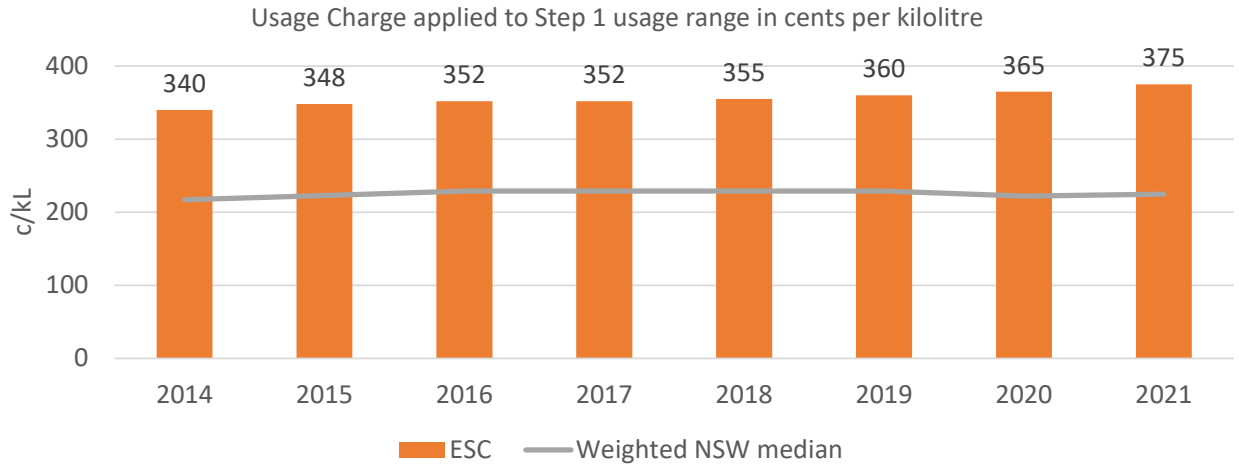



**Figure 76: Water supply usage charge – step 1**

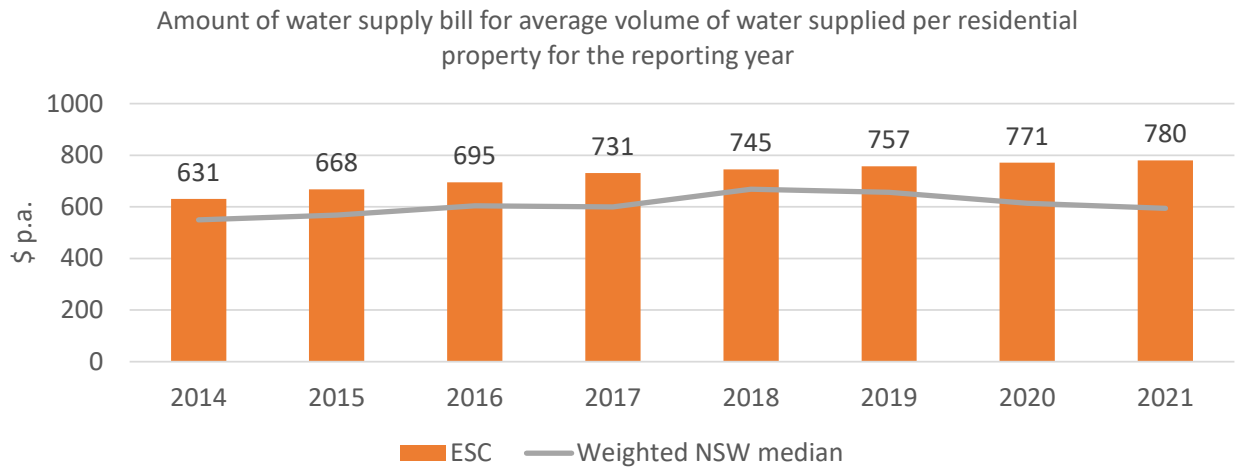



**Figure 77: Typical residential bill – water supply**

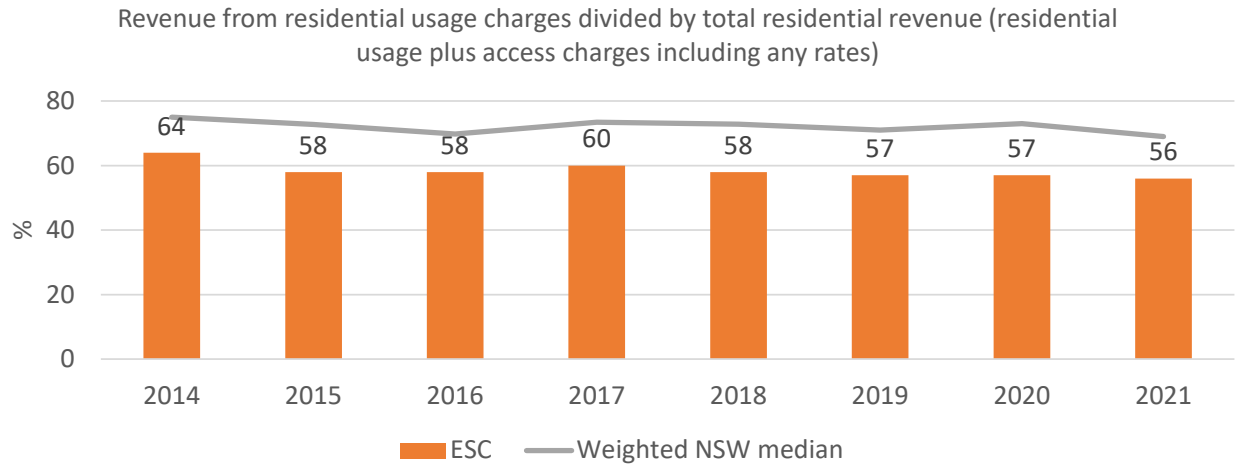



**Figure 78: Residential revenue from water supply usage charges**

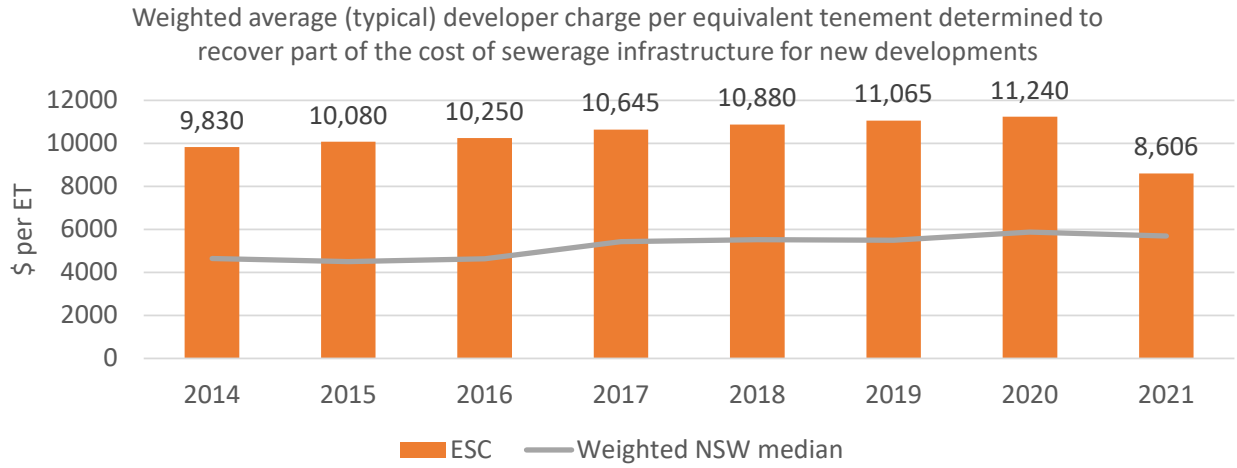



**Figure 79: Typical developer charge – sewerage**

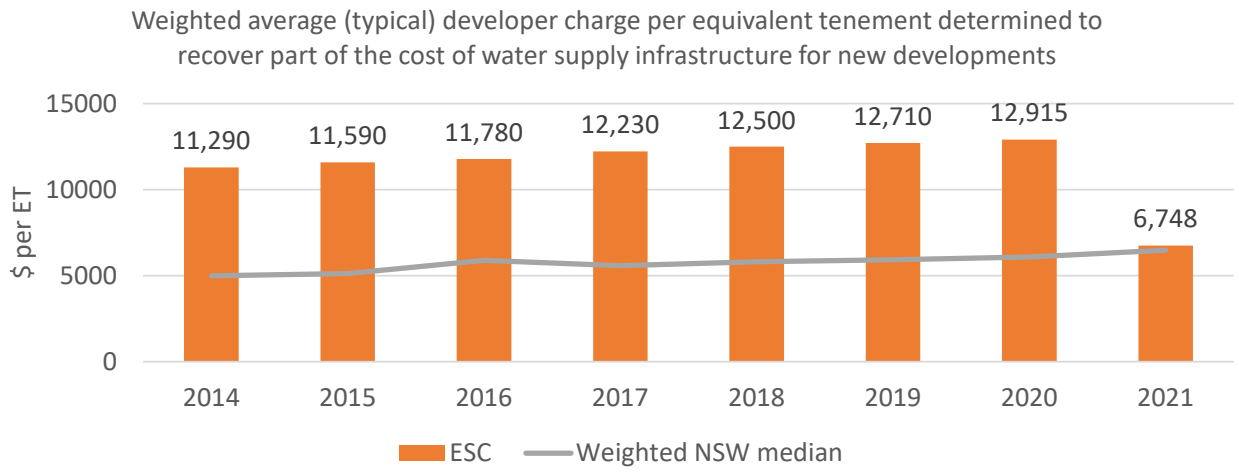



**Figure 80: Typical developer charge – water supply**

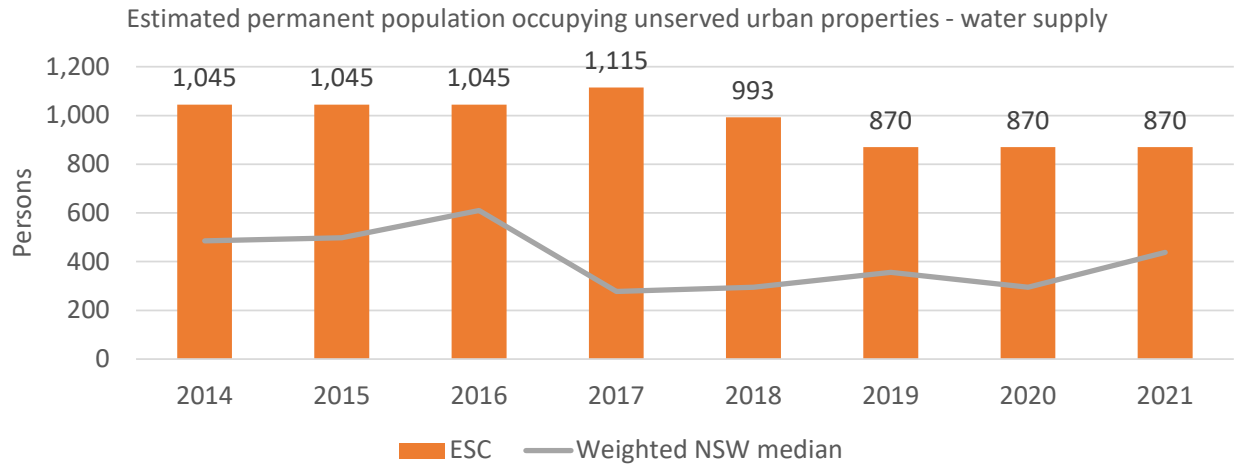



**Figure 81: Unserved urban population – water supply**

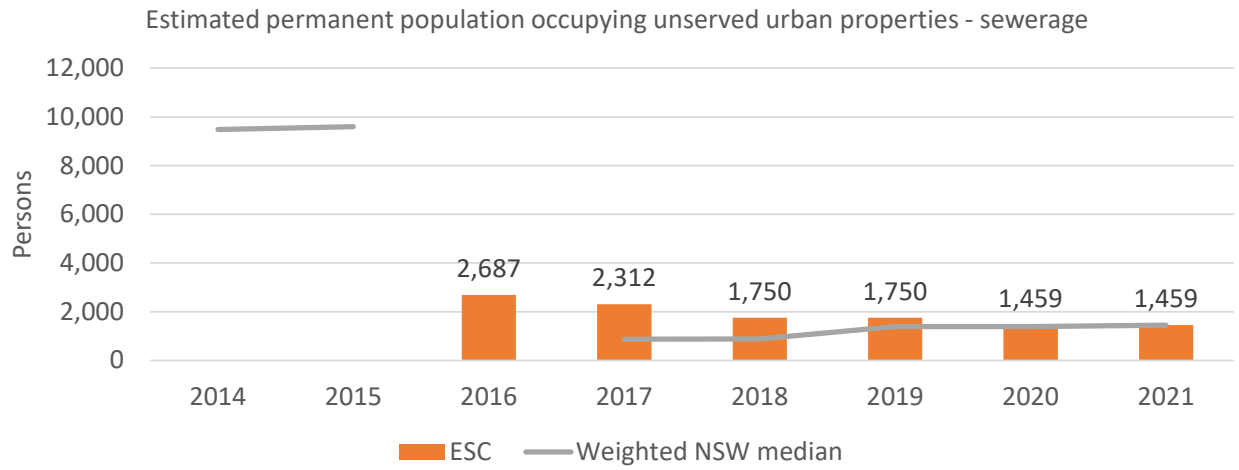



**Figure 82: Unserved urban population – sewerage**

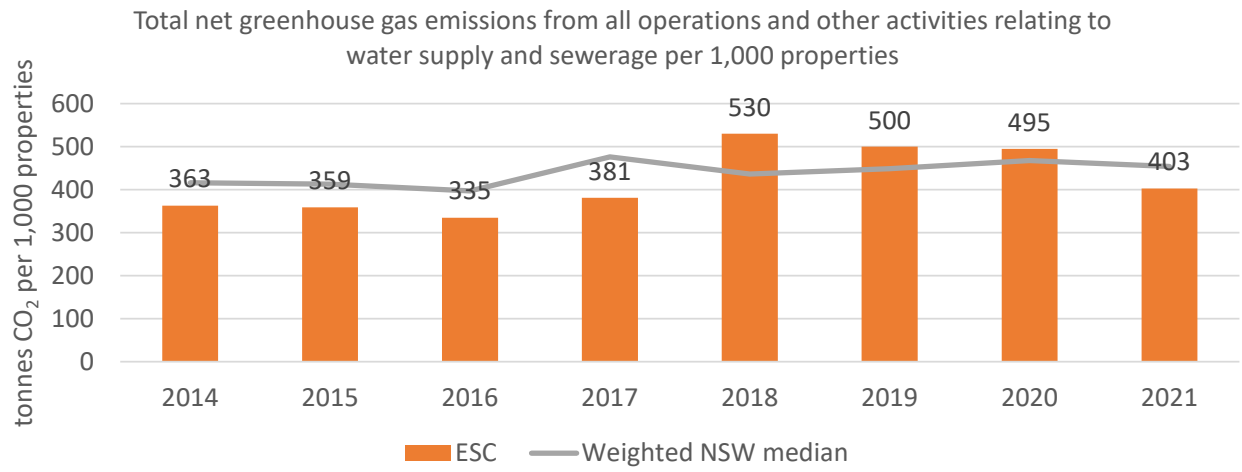
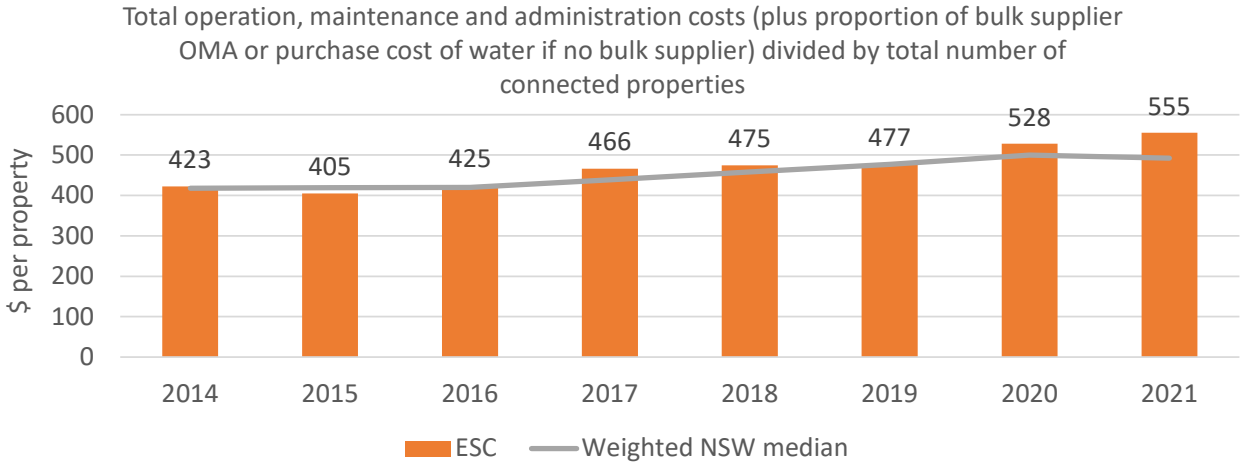



**Figure 83: Total water supply and sewerage greenhouse gas emissions**



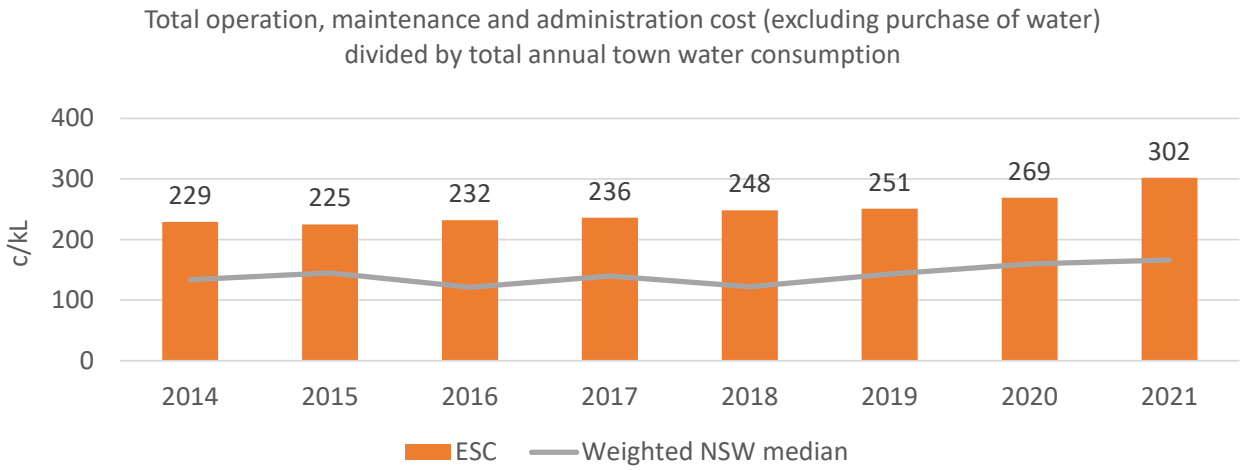




**Figure 84: Operating, maintenance and administration cost – water supply**

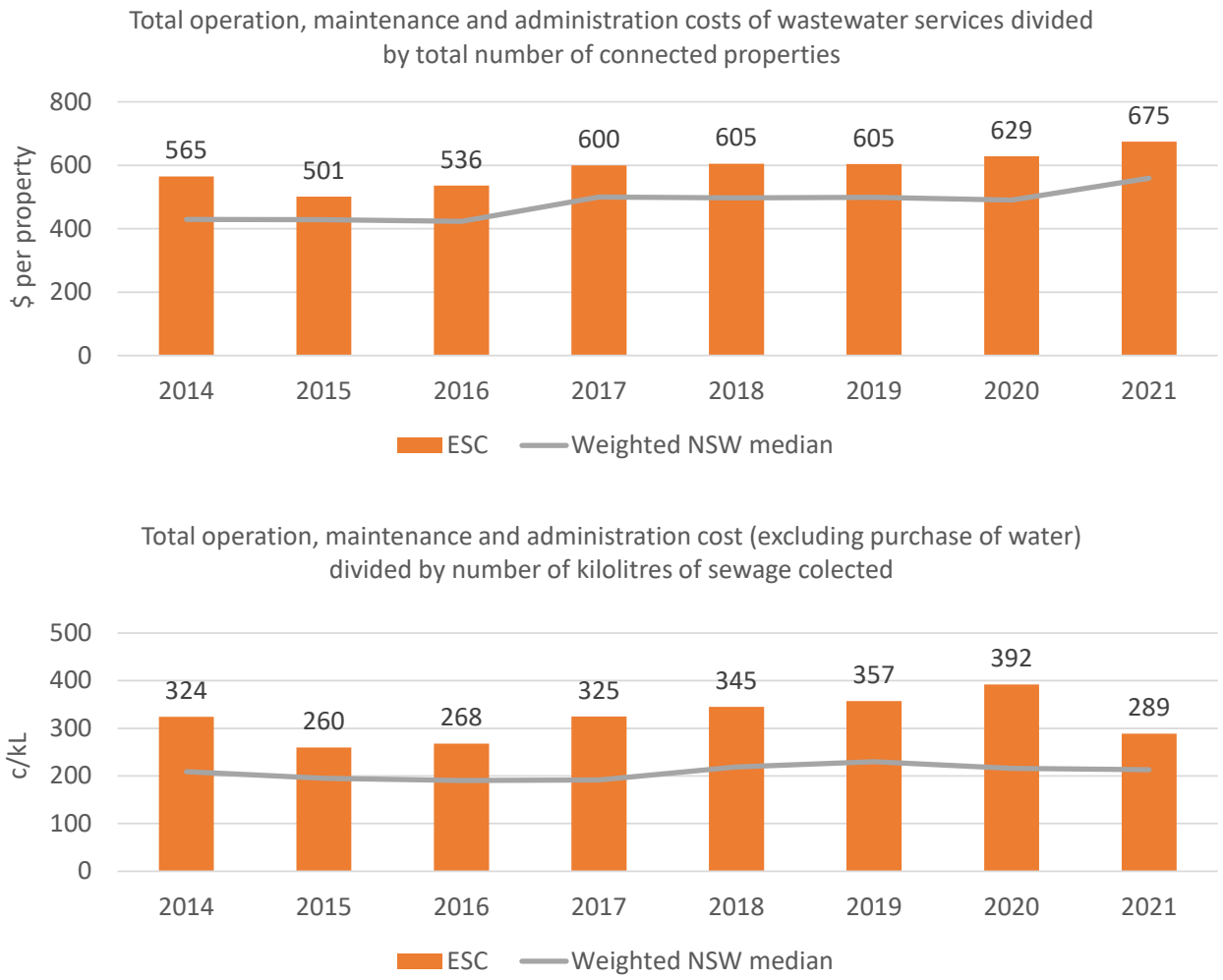



**Figure 85: Operating, maintenance and administration cost – sewerage**

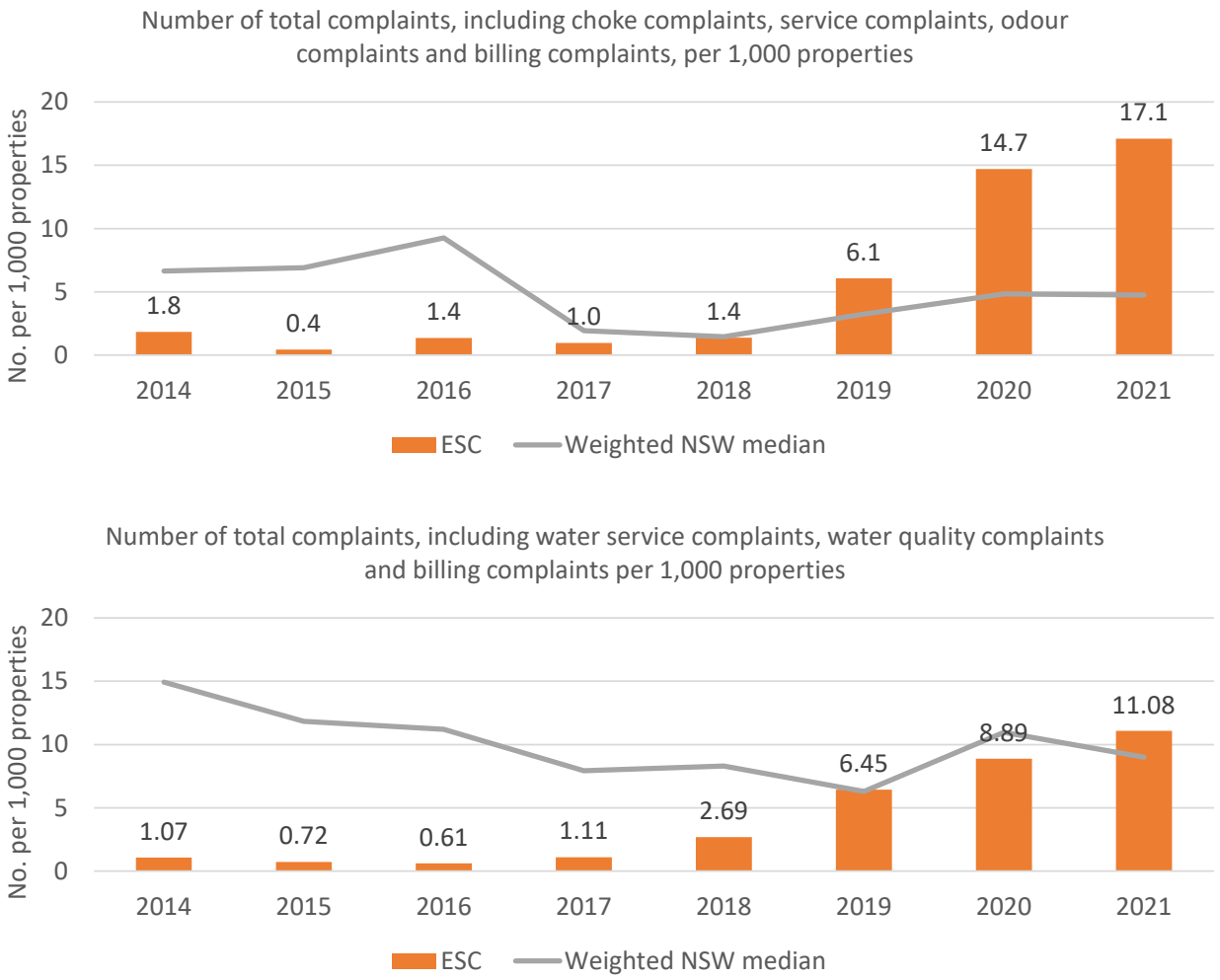



**Figure 86: Complaints**

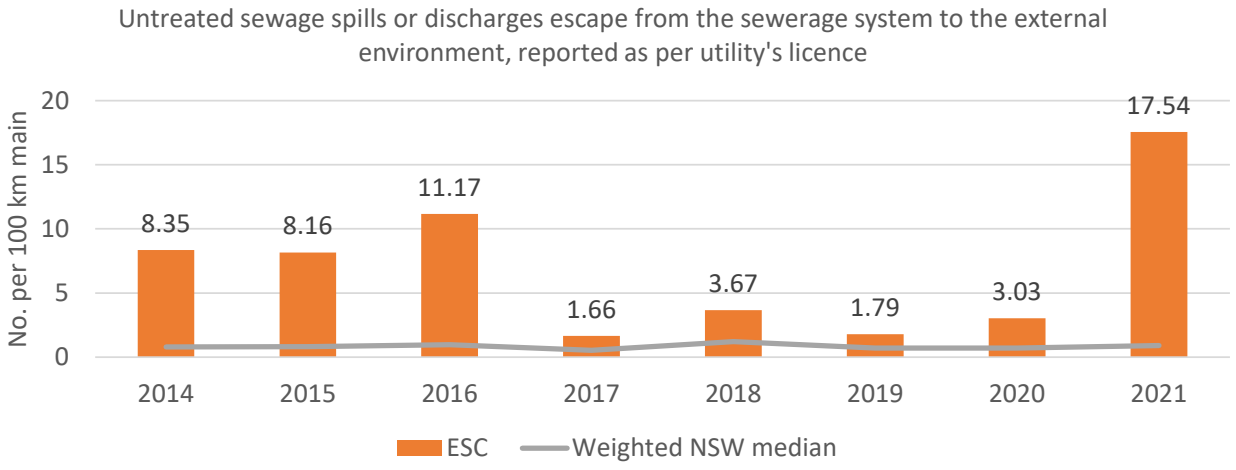



**Figure 87: Sewer overflows – reported to regulator**

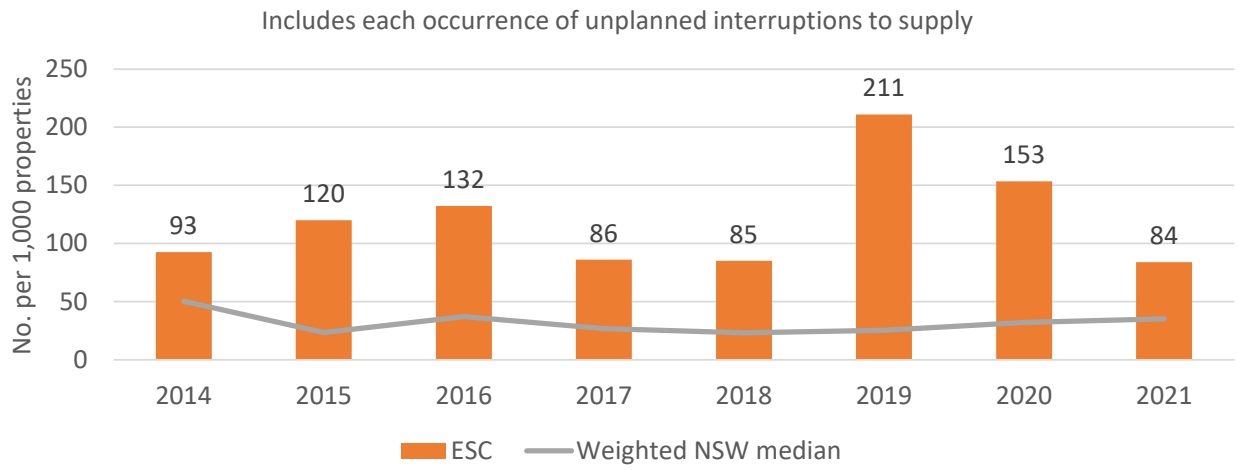



**Figure 88: Unplanned interruptions**

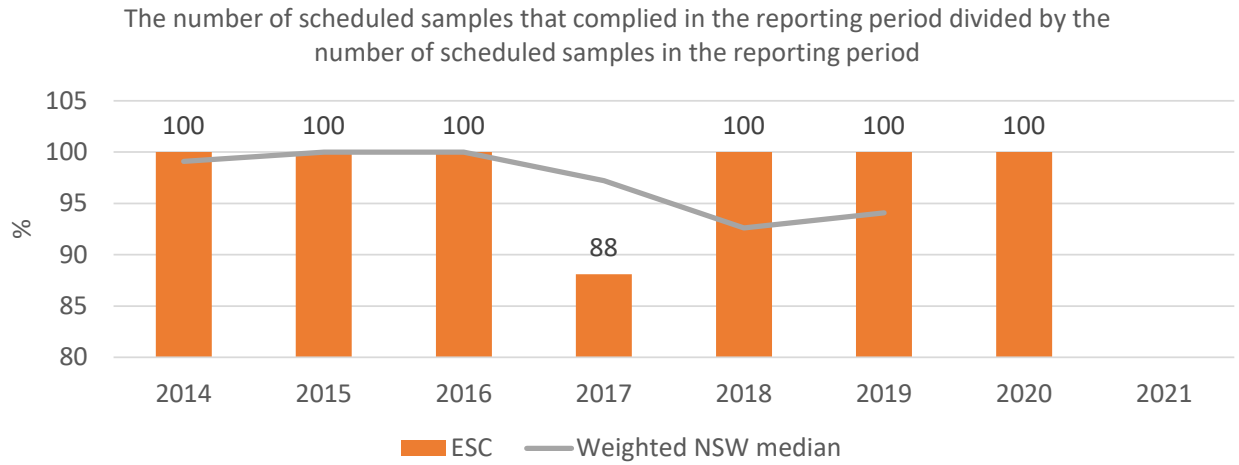



**Figure 89: Sewage treated that was compliant**

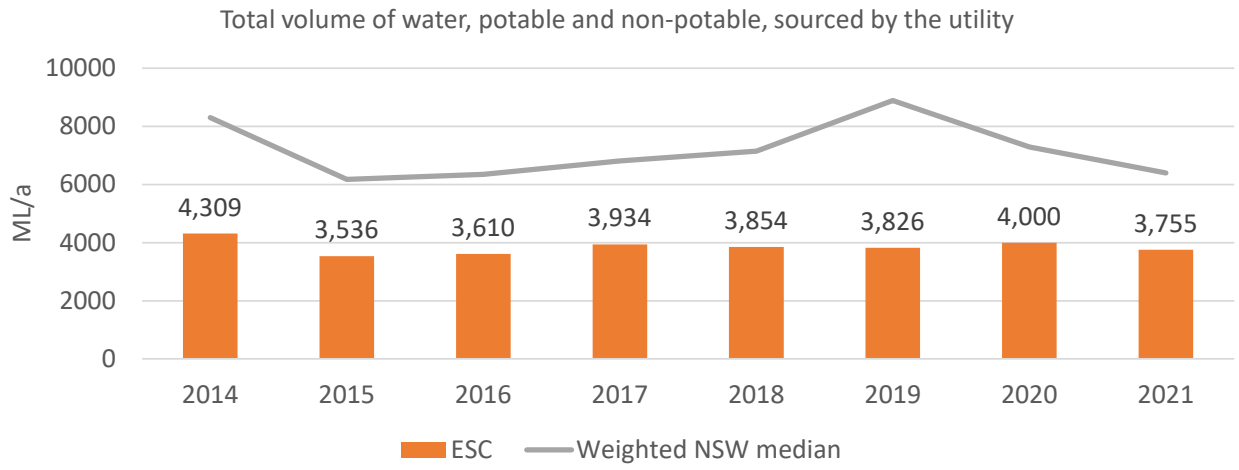



**Figure 90: Water sourced**

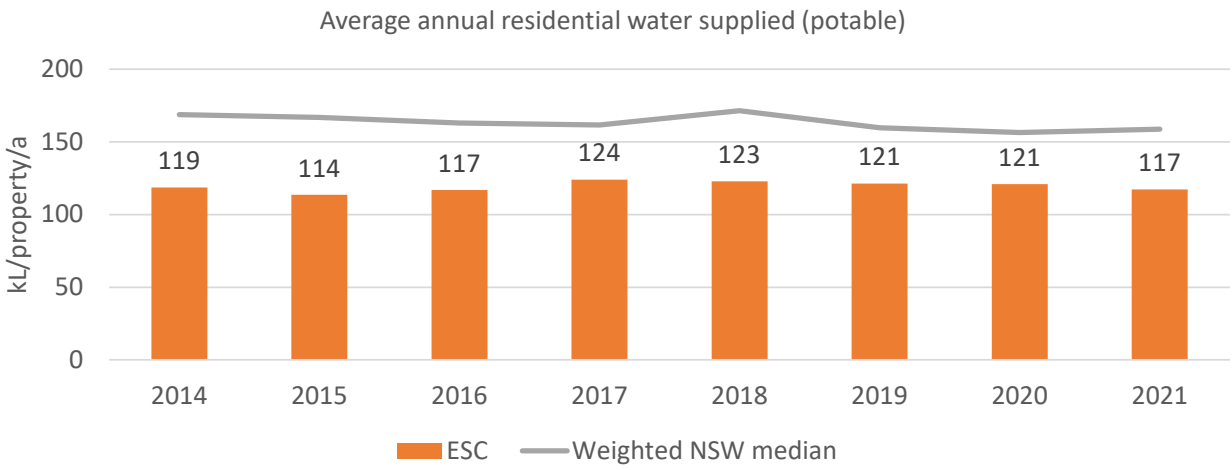



**Figure 91: Residential water supplied**

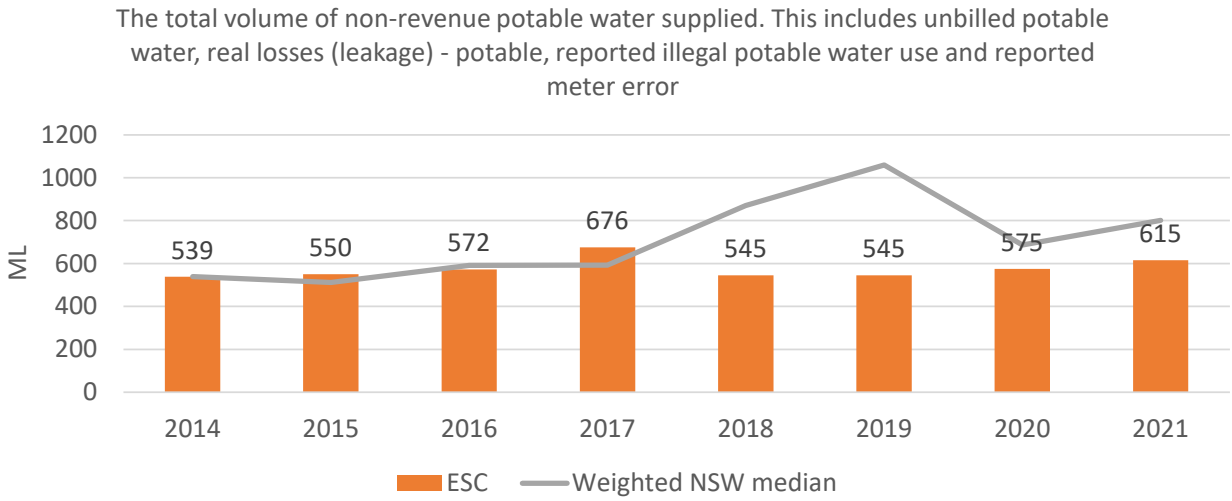



**Figure 92: Non-revenue water**

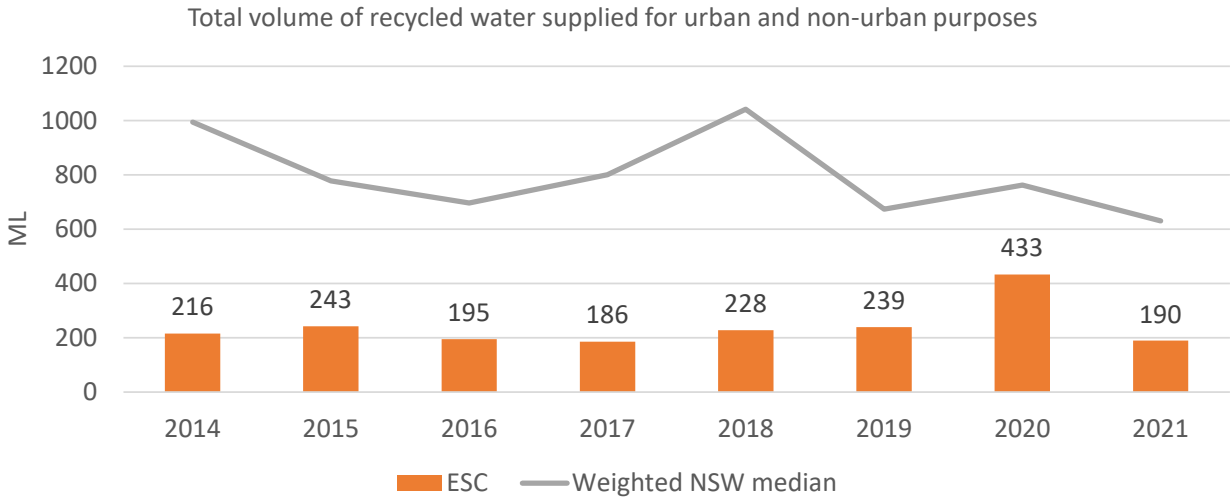



**Figure 93: Recycled water supplied**

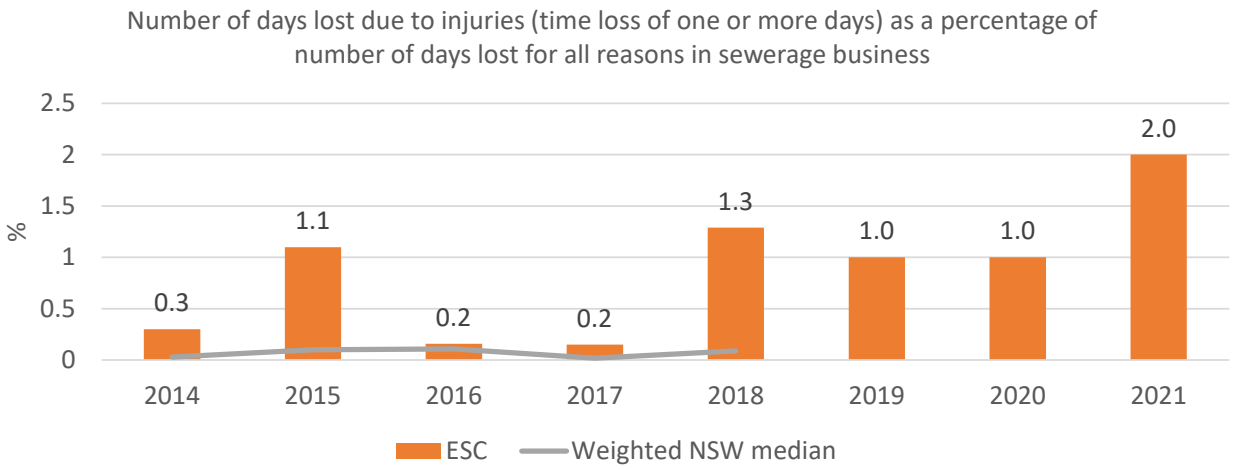



**Figure 94: Days lost due to injuries - sewerage**

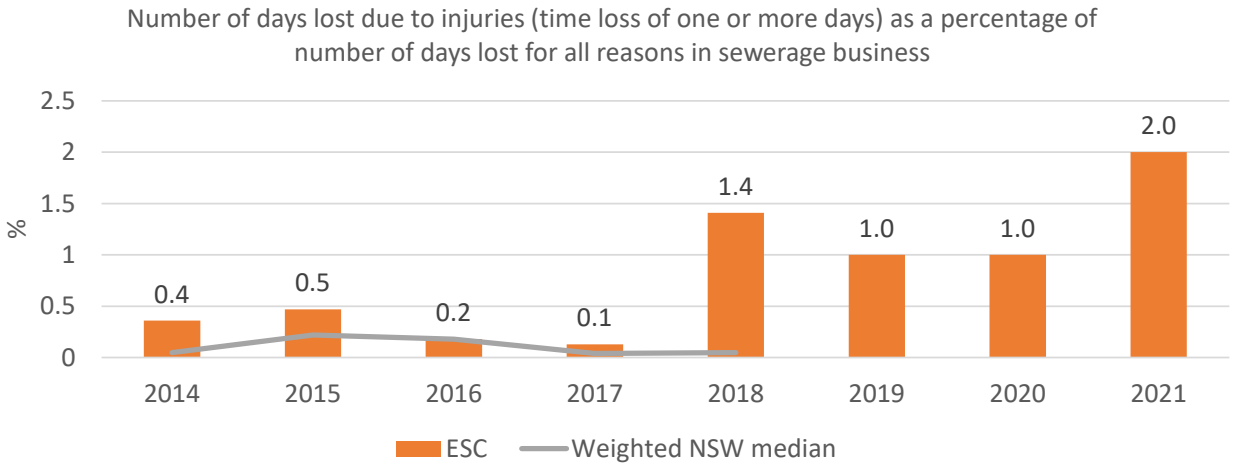



**Figure 95: Days lost due to injuries – water supply**

# APPENDIX 2 CAPITAL WORKS AND RECURRENT BUDGETS

| **Sewerage capital works program** | *2022 $'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 |
| **Project** | **% Renewal** | **% new assets** | **% subsidised scheme** | **2021/22** | **2022/23** | **2023/24** | **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** |
| **Asset renewals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sewer Mains and Service Connection Renewals | 100% | | | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Sewer Manholes Renewals | 100% | | | 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 | 200 | 200 | 200 | 200 |
| Pumping Stations Renewals | 100% | | | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 |
| Sewage Treatment Plant Renewals | 100% | | | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 |
| SCADA and Telemetry Renewals | 100% | | | 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 |
| **New assets** | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| New Service Connections | | 100% | | 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 |
| Tuross Effluent Reuse Pumping Station | 50% | 50% | | - | 500 | 500 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Moruya Effluent Reuse Scheme | | 100% | | - | 1,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Augmentation** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Batemans Bay Sewerage upgrades | | 100% | | - | - | - | - | 1,000 | - | - | - | - | 1,000 | - | - | - | - | 1,000 | - | - | - | - | 1,000 | - | - | - | - | 1,000 | - | - | - | - | 1,000 |
| Tomakin Sewerage upgrades | | 100% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Moruya Sewerage upgrades | | 100% | | - | - | - | - | - | 150 | - | - | - | - | 150 | - | - | - | - | 150 | - | - | - | - | 150 | - | - | - | - | - | - | - | - | - |
| Tuross Sewerage upgrades | | 100% | | - | - | - | - | - | 180 | - | - | - | - | 150 | - | - | - | - | 120 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Narooma Sewerage upgrades | | 100% | | - | - | - | - | - | 570 | - | - | - | - | 475 | - | - | - | - | 380 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Batemans Bay STP Augmentation | 50% | 50% | | 10,000 | 13,000 | - | - | - | 2,000 | 3,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 200 | 1,000 | 20,000 | 20,000 |
| Tomakin STP Augmentation | | 100% | | 500 | 100 | 8,000 | 19,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 200 | 1,000 | 10,000 | 15,000 | - | - |
| Moruya STP Augmentation | | 100% | | - | - | 500 | 1,000 | 2,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 200 | 500 |
| Tuross STP Augmentation | 50% | 50% | | 2,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 200 | 500 | 10,000 | 10,000 | - | - | - | - |
| Bodalla STP Augmentation | | 100% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 200 | 1,000 | 1,000 | - | - | - | - | - | - |
| Narooma STP Augmentation | | 100% | | 1,000 | 1,000 | 2,000 | 6,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 200 | 1,000 |
| Malua Bay Diversion | | 100% | | - | - | - | 3,000 | 6,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **New schemes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Potato Point Sewerage | | | 100% | 2,500 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Akolele Sewerage | | | 100% | 200 | 100 | 1,400 | 1,500 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Nelligen Sewerage | | | 100% | 100 | 4,000 | 3,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Totals** | **317,175** | | | **20,320** | **23,720** | **20,420** | **34,520** | **13,020** | **6,920** | **7,020** | **4,020** | **4,020** | **5,020** | **4,795** | **4,020** | **4,020** | **4,020** | **5,020** | **4,670** | **4,020** | **4,020** | **4,020** | **5,020** | **4,170** | **4,220** | **5,220** | **5,520** | **15,220** | **15,020** | **14,220** | **20,020** | **24,420** | **26,520** |
| *Renewals* | *166,450* | | | *10,000* | *10,750* | *4,250* | *4,000* | *4,000* | *5,000* | *5,500* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,000* | *4,100* | *4,250* | *9,000* | *9,000* | *4,100* | *4,500* | *14,000* | *14,000* |
| *New assets* | *137,925* | 43% | | *7,520* | *8,870* | *11,770* | *29,020* | *9,020* | *1,920* | *1,520* | *20* | *20* | *1,020* | *795* | *20* | *20* | *20* | *1,020* | *670* | *20* | *20* | *20* | *1,020* | *170* | *220* | *1,120* | *1,270* | *6,220* | *6,020* | *10,120* | *15,520* | *10,420* | *12,520* |
| *Subsidised scheme* | *12,800* | 4% | | *2,800* | *4,100* | *4,400* | *1,500* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Grants** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Potato Point Sewerage | *450* | | | 450 | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | |
| Akolele Sewerage | *650* | | | - | - | 300 | 350 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Nelligen Sewerage | *2,000* | | | - | 1,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total grants** | ***3,100*** | | | **450** | **1,000** | **1,300** | **350** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | | | | | | | | | | | | |

| **Water supply capital works program** | *2022 $'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 |
| **Project** | **% Renewal** | **% new assets** | **% subsidised scheme** | **2021/22** | **2022/23** | **2023/24** | **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** |
| **Asset renewals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Meter Replacements | 100% | | | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 | 260 |
| Water Service Renewals | 100% | | | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Valve and Hydrant Replacements | 100% | | | 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 | 200 | 200 | 200 | 200 | 200 |
| Water Main Renewals | 100% | | | 1,500 | 1,600 | 2,000 | 2,000 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 | 2,100 |
| Water Pumping Stations Renewals | 100% | | | 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 | 80 | 80 |
| Water Reservoir Renewals | 100% | | | - | - | - | - | - | 1,500 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Water Treatment Renewals | 100% | | | - | - | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SCADA & Telemetry Renewals | 100% | | | 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 | 50 |
| **New assets** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| New Service Connections | | 100% | | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| Southern Storage | | | 100% | 5,000 | 24,000 | 60,000 | 42,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Southern Water Treatment Plant | 70% | 30% | | - | - | - | 1,000 | 2,000 | 10,000 | 20,000 | 10,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Catalina Service Reservoir | | 100% | | - | - | - | - | 3,000 | 1,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Narooma Service Reservoir | | 100% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Water Refill Stations | | 100% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Augmentation** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Distribution System Upgrades | | 100% | | - | - | - | - | - | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Northern Water Treatment Plant Augmentation | 50% | 50% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2,000 | 8,000 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Water Treatment Sludge Management | | 100% | | - | - | 400 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Moruya Bypass Trunk Water Main | | 100% | | - | - | 6,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Deep Creek Dam Spillway | | 100% | | - | 500 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **New schemes** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nelligen | | | 100% | 100 | 3,500 | 2,500 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Totals** | **300,850** | | | **7,390** | **30,390** | **71,940** | **46,040** | **8,140** | **15,890** | **23,690** | **13,690** | **3,690** | **3,690** | **3,690** | **3,690** | **3,690** | **3,690** | **3,690** | **5,190** | **11,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** | **3,190** |
| *Renewals* | *128,250* | | | *2,150* | *2,250* | *2,900* | *3,600* | *4,400* | *11,500* | *17,300* | *10,300* | *3,300* | *3,300* | *3,300* | *3,300* | *3,300* | *3,300* | *3,300* | *4,050* | *7,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* | *3,050* |
| *New assets* | *35,500* | *12%* | | *140* | *640* | *6,540* | *440* | *3,740* | *4,390* | *6,390* | *3,390* | *390* | *390* | *390* | *390* | *390* | *390* | *390* | *1,140* | *4,140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* | *140* |
| *Subsidised scheme* | *137,100* | *46%* | | *5,100* | *27,500* | *62,500* | *42,000* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Grants** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southern Storage | *76,300* | | | 2,500 | 18,000 | 36,000 | 19,800 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Nelligen | *1,500* | | | - | 900 | 600 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total grants** | ***77,800*** | | | **2,500** | **18,900** | **36,600** | **19,800** | | | | | | | | | | | | | | | | | | | | | | | | | | |

| **Sewer operations and maintenance costs** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual | | | | | | | | | | |
| **Description** | **2021/22** | **2022/23** | **2023/24** | **2024/25** | **2025/26** | **2026/27** | **2027/28** | **2028/29** | **2029/30** | **2030/31** | **2031/32** |
| Condition Assessments (CCTV) | 154,534 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| Smoke Testing | - | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Sewer Mains Cleaning | - | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 |
| Sewer Mains OMR | 1,236,270 | 800,000 | 1,050,000 | 1,050,000 | 1,050,000 | 1,050,000 | 1,050,000 | 1,050,000 | 1,050,000 | 1,050,000 | 1,050,000 |
| Total Sewer Mains OMR | 1,390,804 | 1,550,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 |
| Sewage Pumping Stations OMR | 2,163,473 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 |
| Sewage Treatment Plants OMR | 3,090,675 | 3,200,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 |
| Odour Control OMR | 329,672 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 |
| SCADA & Telemetry OMR | 190,563 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 |
| Water Sampling & Testing | 164,243 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 |
| Strategic Business Planning | 123,627 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Workforce Planning | 30,908 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Business Improvement Plan Implementation | - | - | - | - | - | - | - | - | - | - | - |
| WHS Management Systems | 10,302 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 |
| Quality Management Systems | 51,511 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 |
| Environmental Management Systems | - | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 |
| Sewer Administration General | 1,387,204 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 | 1,400,000 |
| Sewer Operations Training and Development | - | - | - | - | - | - | - | - | - | - | - |
| Sewer Operations Supervision | 175,138 | - | - | - | - | - | - | - | - | - | - |
| Total | **10,498,924** | **11,090,000** | **11,690,000** | **11,690,000** | **11,690,000** | **11,690,000** | **11,690,000** | **11,690,000** | **11,690,000** | **11,690,000** | **11,690,000** |
| Sewer overheads | 3,814,487 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 | 3,435,061 |

| **Water operations and maintenance costs** | *2022$* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual | | | | | | | | | | |
| **Description** | **2021/22** | **2022/23** | **2023/24** | **2024/25** | **2025/26** | **2026/27** | **2027/28** | **2028/29** | **2029/30** | **2030/31** | **2031/32** |
| Water Resource Management Planning | 20,605 | - | - | - | - | - | - | - | - | - | - |
| Water Loss Management | 30,907 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Catchment Management | 20,605 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| Water Licences | 20,605 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| Water Purchases | 10,302 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Dam Safety Review | - | - | - | - | - | 30,000 | - | - | - | - | - |
| Dams & Weirs North OMR | 103,023 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 |
| Dams & Weirs South OMR | - | - | - | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 |
| Trunk Mains OMR | 257,556 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 |
| Reticulation Mains OMR | 1,390,804 | 1,500,000 | 1,650,000 | 1,650,000 | 1,650,000 | 1,650,000 | 1,650,000 | 1,650,000 | 1,650,000 | 1,650,000 | 1,650,000 |
| Water Services OMR | 669,646 | 650,000 | 650,000 | 650,000 | 650,000 | 650,000 | 650,000 | 650,000 | 650,000 | 650,000 | 650,000 |
| Condition Assessments | - | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Reservoirs OMR | 236,952 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 | 220,000 |
| Total Reservoirs OMR | 236,952 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |
| Raw Water Pumping Stations OMR | 463,601 | 500,000 | 600,000 | 600,000 | 600,000 | 550,000 | 550,000 | 550,000 | 550,000 | 550,000 | 550,000 |
| Booster Pumping Stations OMR | 206,045 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| Water Treatmnt Plants OMR | 741,299 | 900,000 | 900,000 | 900,000 | 900,000 | 1,500,000 | 1,500,000 | 1,500,000 | 1,500,000 | 1,500,000 | 1,500,000 |
| Network Disinfection OMR | 61,814 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 |
| SCADA & Telemetry OMR | 159,193 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 |
| Water Sampling & Testing | 246,541 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |
| Water Efficiency Education | 102,444 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Residential Water Efficiency Rebates | 50,750 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Non-Residential Water Efficiency Program | 33,867 | 30,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Strategic Business Planning | 123,627 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Workforce Planning | 30,907 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Business Improvement Plan Implementation | - | - | - | - | - | - | - | - | - | - | - |
| WHS Management Systems | 10,302 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Quality Management Systems | 51,511 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Environmental Management Systems | - | 10,000 | 50,000 | 10,000 | 10,000 | 50,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Water Administration General | 1,136,544 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |
| Water Operations Training and Development | - | - | - | - | - | - | - | - | - | - | - |
| Total | **6,416,400** | **6,940,000** | **7,200,000** | **7,350,000** | **7,350,000** | **7,930,000** | **7,900,000** | **7,900,000** | **7,900,000** | **7,900,000** | **7,900,000** |
| Water overheads | 3,140,187 | 3,205,923 | 3,180,684 | 3,180,684 | 3,180,684 | 3,180,684 | 3,180,684 | 3,180,684 | 3,180,684 | 3,180,684 | 3,180,684 |

# APPENDIX 3 FINMOD OUTPUTS

# Sewer 2022 : Case 5 - increase TRB, lower loans

## Summary Report of Assumptions and Results

**FINMOD**
Eurobodalla Shire Council

| | 2021/22 | 2025/26 | 2030/31 | 2035/36 | 2040/41 | 2045/46 | 2050/51 |
|---|---|---|---|---|---|---|---|
| Inflation Rates - General (%) | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| Inflation Rates - Capital Works (%) | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| Borrowing Interest Rate (%) | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 |
| Term of New Loans (years) | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Investment Interest Rate (%) | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Growth Rate - Residential (%) | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Developer Charges per Assessment - Residential (2021/22 $) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subsidised Scheme Capital Works ($m) | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grants on Acquisition of Assets ($m) | 0.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Renewals ($m) | 10.00 | 4.00 | 4.00 | 4.00 | 4.00 | 9.00 | 15.50 |
| Renewals (%) | 2.12 | 0.73 | 0.72 | 0.71 | 0.70 | 1.55 | 2.43 |
| Borrowing Outstanding ($m) | 23.49 | 64.39 | 42.30 | 22.37 | 5.83 | 0.00 | 0.00 |
| Mgmnt Cost / Assessment | 186 | 186 | 186 | 186 | 186 | 186 | 186 |
| Debt Equity Ratio | 0.08 | 0.20 | 0.11 | 0.05 | 0.01 | 0.00 | 0.00 |
| OMA Cost Per Assessment | 662 | 676 | 659 | 642 | 626 | 609 | 594 |
| Economic Real Rate of Return (%) | 0.64 | 0.69 | 0.88 | 0.65 | 0.88 | 1.07 | 0.86 |
| Return on Capital (%) | 0.70 | 0.70 | 0.88 | 0.67 | 0.88 | 1.04 | 0.85 |
| Net Debt ($m) | 5.90 | 59.47 | 33.41 | 4.32 | 0.00 | 0.00 | 0.00 |
| Debt Service Ratio | 0.21 | 0.21 | 0.17 | 0.16 | 0.11 | 0.00 | 0.00 |
| Average Residential Bills | 992 | 1054 | 1055 | 997 | 999 | 1000 | 1001 |
| Typical Residential Bills | 1010 | 1070 | 1070 | 1010 | 1010 | 1010 | 1010 |

# Sewer 2022 : Case 5 - increase TRB, lower loans

**FINMOD**
Eurobodalla Shire Council

## STANDARD LOAN PAYMENT SCHEDULE

| Drawdown | | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2021/22 | Principal 11400 | 402 | 416 | 430 | 446 | 462 | 478 | 495 | 512 | 531 | 549 | 569 | 589 | 609 | 631 | 653 | 676 | 700 | 725 | 750 | 777 | 0 | 0 | 0 | 0 | 0 |
| | Interest | 396 | 381 | 366 | 352 | 336 | 320 | 302 | 285 | 267 | 248 | 229 | 209 | 188 | 166 | 144 | 121 | 98 | 72 | 47 | 21 | 0 | 0 | 0 | 0 | 0 |
| 2022/23 | Principal 16913 | | 597 | 617 | 639 | 662 | 685 | 709 | 734 | 760 | 787 | 815 | 843 | 873 | 904 | 936 | 969 | 1003 | 1039 | 1075 | 1113 | 1152 | 0 | 0 | 0 | 0 |
| | Interest | | 587 | 566 | 544 | 522 | 498 | 474 | 449 | 423 | 396 | 369 | 339 | 310 | 279 | 247 | 214 | 180 | 145 | 107 | 70 | 30 | 0 | 0 | 0 | 0 |
| 2023/24 | Principal 7880 | | | 278 | 288 | 298 | 308 | 319 | 331 | 343 | 355 | 367 | 379 | 393 | 407 | 421 | 436 | 452 | 468 | 484 | 501 | 519 | 537 | 0 | 0 | 0 |
| | Interest | | | 273 | 264 | 253 | 243 | 232 | 221 | 209 | 197 | 185 | 171 | 158 | 144 | 130 | 115 | 100 | 84 | 68 | 50 | 32 | 14 | 0 | 0 | 0 |
| 2024/25 | Principal 25845 | | | | 911 | 944 | 976 | 1011 | 1047 | 1084 | 1122 | 1162 | 1202 | 1245 | 1289 | 1334 | 1382 | 1430 | 1481 | 1533 | 1587 | 1644 | 1701 | 1761 | 0 | 0 |
| | Interest | | | | 896 | 864 | 831 | 797 | 761 | 724 | 686 | 646 | 605 | 563 | 519 | 473 | 426 | 377 | 327 | 275 | 220 | 164 | 107 | 47 | 0 | 0 |
| 2025/26 | Principal 7726 | | | | | 272 | 282 | 292 | 302 | 313 | 324 | 335 | 347 | 359 | 372 | 385 | 399 | 413 | 428 | 442 | 458 | 474 | 491 | 508 | 527 | 0 |
| | Interest | | | | | 268 | 258 | 249 | 238 | 227 | 217 | 205 | 193 | 181 | 168 | 155 | 141 | 127 | 113 | 98 | 82 | 66 | 49 | 32 | 14 | 0 |
| Total Principal | 69764 | 402 | 1013 | 1325 | 2284 | 2638 | 2729 | 2826 | 2926 | 3031 | 3137 | 3248 | 3360 | 3479 | 3603 | 3729 | 3862 | 3998 | 4141 | 4284 | 4436 | 3789 | 2729 | 2269 | 527 | 0 |
| Total Interest | | 396 | 968 | 1205 | 2056 | 2243 | 2150 | 2054 | 1954 | 1850 | 1744 | 1634 | 1517 | 1400 | 1276 | 1149 | 1017 | 882 | 741 | 595 | 443 | 292 | 170 | 79 | 14 | 0 |

# Sewer 2022 : Case 5 - increase TRB, lower loans

**FINMOD**
Eurobodalla Shire Council

## Historical Operating Statement

| | 2019/20* | 2020/21* |
|---|---|---|
| **EXPENSES** | | |
| Management Expenses | *0* | *3741* |
| Administration | 0 | 3741 |
| Engineering and Supervision | | |
| Operation and Maintenance Expenses | *0* | *8646* |
| Operation Expenses | 0 | 4742 |
| Maintenance Expenses | | 3155 |
| Energy Costs | 0 | 439 |
| Chemical Costs | 0 | 310 |
| Depreciation | *0* | *7963* |
| System Assets | 0 | 7941 |
| Plant & Equipment | 0 | 22 |
| Interest Expenses | 0 | 685 |
| Other Expenses | | 582 |
| **TOTAL EXPENSES** | **0** | **21617** |
| **REVENUES** | | |
| Rates & Service Availability Charges | *0* | *21700* |
| Residential | 0 | 19053 |
| Non-Residential | 0 | 2647 |
| Trade Waste Charges | 0 | 166 |
| Other Sales and Charges | 0 | 0 |
| Extra Charges | | |
| Interest Income | 0 | 144 |
| Other Revenues | 0 | 85 |
| Grants | *0* | *1016* |
| Grants for Acquisition of Assets | 0 | 828 |
| Pensioner Rebate Subsidy | 0 | 188 |
| Other Grants | 0 | 0 |
| Contributions | *0* | *2293* |
| Developer Charges | 0 | 1278 |
| Developer Provided Assets | | 1012 |
| Other Contributions | | 3 |
| **TOTAL REVENUES** | **0** | **25404** |
| **OPERATING RESULT** | **0** | **3787** |
| **OPERATING RESULT (less Grants for Acq of Assets)** | **0** | **2959** |

# Sewer 2022 : Case 5 - increase TRB, lower loans

## Historical Statement of Financial Position



| | 2019/20* | 2020/21* |
|---|---|---|
| **Cash and Investments** | 0 | 21497 |
| **Receivables** | 0 | 930 |
| **Inventories** | | |
| **Property, Plant & Equipment** | *0* | *275463* |
| **System Assets (1)** | 0 | 275354 |
| **Plant & Equipment** | 0 | 109 |
| **Other Assets** | | 77 |
| **TOTAL ASSETS** | **0** | **297967** |
| **LIABILITIES** | | |
| **Bank Overdraft** | | |
| **Creditors** | 0 | 156 |
| **Borrowings** | 0 | 15990 |
| **Provisions** | | |
| **TOTAL LIABILITIES** | **0** | **16146** |
| **NET ASSETS COMMITTED** | **0** | **281821** |
| **EQUITY** | | |
| **Accumulated Operating Result** | 0 | 143130 |
| **Asset Revaluation Reserve** | 0 | 138691 |
| **TOTAL EQUITY** | **0** | **281821** |

**(1) Notes to System Assets**

| | | |
|---|---|---|
| **Current Replacement Cost** | | 449658 |
| **Less: Accumulated Depreciation** | 0 | 174304 |
| **Written Down Current Cost** | 0 | 275354 |

# Sewer 2022 : Case 5 - increase TRB, lower loans

## Base Forecast Data

FINMOD
Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Financial Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inflation Rate - General (%) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Inflation Rate - Capital Works (%) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Borrowing Interest Rate for New Loans (%) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Investment Interest Rate (%) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Number of Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Growth Rate (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Assessments | 0.5 | 1.37 | 0.5 | 1.21 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Non-Residential Assessments | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Total Assessments | 0.5 | 1.32 | 0.5 | 1.17 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Number of New Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 97 | 268 | 99 | 240 | 101 | 101 | 102 | 102 | 103 | 103 | 104 | 104 | 105 | 105 | 106 | 106 | 107 | 107 | 108 | 109 | 109 | 110 | 110 | 111 | 111 | 112 | 112 | 113 | 114 | 114 |
| Non-Residential | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Total New Assessments | 103 | 274 | 105 | 246 | 107 | 107 | 108 | 108 | 109 | 109 | 110 | 110 | 111 | 111 | 112 | 112 | 113 | 113 | 114 | 115 | 116 | 117 | 117 | 118 | 118 | 119 | 119 | 120 | 121 | 121 |
| Projected Number of Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 19534 | 19802 | 19901 | 20141 | 20242 | 20343 | 20445 | 20547 | 20650 | 20753 | 20857 | 20961 | 21066 | 21171 | 21277 | 21383 | 21490 | 21597 | 21705 | 21814 | 21923 | 22033 | 22143 | 22254 | 22365 | 22477 | 22589 | 22702 | 22816 | 22930 |
| Non-Residential | 1186 | 1192 | 1198 | 1204 | 1210 | 1216 | 1222 | 1228 | 1234 | 1240 | 1246 | 1252 | 1258 | 1264 | 1270 | 1276 | 1282 | 1288 | 1294 | 1300 | 1307 | 1314 | 1321 | 1328 | 1335 | 1342 | 1349 | 1356 | 1363 | 1370 |
| Total Projected Assessments | 20720 | 20994 | 21099 | 21345 | 21452 | 21559 | 21667 | 21775 | 21884 | 21993 | 22103 | 22213 | 22324 | 22435 | 22547 | 22659 | 22772 | 22885 | 22999 | 23114 | 23230 | 23347 | 23464 | 23582 | 23700 | 23819 | 23938 | 24058 | 24179 | 24300 |
| Backlog Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 0 | 170 | 0 | 140 | 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 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Total Backlog Assessments | 0 | 170 | 0 | 140 | 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 Charges / Vacant Assessments (Values in 2021/22 $) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Developer Charges $/Assessment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 | 8821 |
| Non-Residential | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 | 13232 |
| Number of Vacant Residential Assessments | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 | 846 |
| Average Charge of Vacant Assessments | 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 | 100 |
| % 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 | 0 | 0 | 0 | 0 | 0 |
| Depreciation of Existing Plant and Equipment (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current Replacement Cost of System Assets | 460899 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written Down Current Cost of System Assets | 282238 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Annual Depreciation of Existing System Assets | 8140 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written Down Value of Plant and Equipment | 109 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Annual Depreciation of Existing Plant and Equipment | 22 | 22 | 22 | 22 | 21 | 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 |

# Sewer 2022 : Case 5 - increase TRB, lower loans

## Revised/Additional Forecast Data

FINMOD
Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Existing Loan Payments (Values in Inflated $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Existing Loan Payments : Principal (Total:15990) | 3501 | 1223 | 791 | 743 | 763 | 783 | 720 | 742 | 661 | 684 | 708 | 733 | 759 | 785 | 813 | 804 | 516 | 128 | 133 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Loan Payments : Interest (Total:4062) | 621 | 443 | 388 | 359 | 331 | 302 | 274 | 247 | 221 | 198 | 174 | 149 | 124 | 97 | 69 | 41 | 17 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital Works Program (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subsidised Scheme (Total:12800) | 2800 | 4100 | 4400 | 1500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other New System Assets (Total:133825) | 7520 | 8870 | 11770 | 29020 | 9020 | 1920 | 1520 | 20 | 20 | 1020 | 795 | 20 | 20 | 20 | 1020 | 670 | 20 | 20 | 20 | 1020 | 170 | 20 | 120 | 270 | 6220 | 6020 | 10120 | 15520 | 10020 | 11020 |
| Renewals (Total:170550) | 10000 | 10750 | 4250 | 4000 | 4000 | 5000 | 5500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4200 | 5100 | 5250 | 9000 | 9000 | 4100 | 4500 | 14400 | 15500 |
| Total Capital Works (Total:317175) | 20320 | 23720 | 20420 | 34520 | 13020 | 6920 | 7020 | 4020 | 4020 | 5020 | 4795 | 4020 | 4020 | 4020 | 5020 | 4670 | 4020 | 4020 | 4020 | 5020 | 4170 | 4220 | 5220 | 5520 | 15220 | 15020 | 14220 | 20020 | 24420 | 26520 |
| Grant For Acquisition of Assets (% of Subsidised Scheme) | 16.07 | 24.39 | 29.55 | 23.33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grant For Acquisition of Assets ($) (Total:3100) | 450 | 1000 | 1300 | 350 | 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:30360) | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 |
| Plant and Equipment Expenditure / Asset Disposal (Values in 2021/22 $'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 | 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 | 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 | 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 | 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 | 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 | 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 | 0 | 0 | 0 | 0 | 0 |

# Sewer 2022 : Case 5 - increase TRB, lower loans

## Revised/Additional Forecast Data

FINMOD

Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OMA / Revenue Overrides (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | 3854 | 3905 | 3925 | 3971 | 3991 | 4011 | 4031 | 4051 | 4071 | 4091 | 4111 | 4132 | 4153 | 4174 | 4195 | 4216 | 4237 | 4258 | 4279 | 4300 | 4322 | 4344 | 4366 | 4388 | 4410 | 4432 | 4454 | 4476 | 4498 | 4520 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Engineering and Supervision | 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 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Expenses | 4885 | 4949 | 4974 | 5032 | 5057 | 5082 | 5107 | 5133 | 5159 | 5185 | 5211 | 5237 | 5263 | 5289 | 5315 | 5342 | 5369 | 5396 | 5423 | 5450 | 5477 | 5504 | 5532 | 5560 | 5588 | 5616 | 5644 | 5672 | 5700 | 5729 |
| Override | 5838 | 5981 | 6496 | 6430 | 6351 | 6307 | 6263 | 6219 | 6175 | 6131 | 6087 | 6042 | 5997 | 5951 | 5905 | 5859 | 5813 | 5767 | 5721 | 5675 | 5629 | 5582 | 5534 | 5486 | 5438 | 5389 | 5340 | 5291 | 5242 | 5193 |
| Maintenance Expenses | 3250 | 3293 | 3309 | 3348 | 3365 | 3382 | 3399 | 3416 | 3433 | 3450 | 3467 | 3484 | 3501 | 3519 | 3537 | 3555 | 3573 | 3591 | 3609 | 3627 | 3645 | 3663 | 3681 | 3699 | 3717 | 3736 | 3755 | 3774 | 3793 | 3812 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Energy Costs | 452 | 458 | 460 | 465 | 467 | 469 | 471 | 473 | 475 | 477 | 479 | 481 | 483 | 485 | 487 | 489 | 491 | 493 | 495 | 497 | 499 | 501 | 504 | 507 | 510 | 513 | 516 | 519 | 522 | 525 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chemical Costs | 319 | 323 | 325 | 329 | 331 | 333 | 335 | 337 | 339 | 341 | 343 | 345 | 347 | 349 | 351 | 353 | 355 | 357 | 359 | 361 | 363 | 365 | 367 | 369 | 371 | 373 | 375 | 377 | 379 | 381 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Expenses | 600 | 608 | 611 | 618 | 621 | 624 | 627 | 630 | 633 | 636 | 639 | 642 | 645 | 648 | 651 | 654 | 657 | 660 | 663 | 666 | 669 | 672 | 675 | 678 | 681 | 684 | 687 | 690 | 693 | 696 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Revenue | 88 | 89 | 89 | 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 | 90 | 90 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Contributions | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Developer Charges Overrides (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calculated from Scheme Data | 935 | 944 | 953 | 961 | 970 | 970 | 979 | 979 | 988 | 988 | 997 | 997 | 1006 | 1006 | 1014 | 1014 | 1023 | 1023 | 1032 | 1041 | 1054 | 1063 | 1063 | 1072 | 1072 | 1081 | 1081 | 1089 | 1098 | 1098 |
| Override | 1000 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 |
| Pensioner Rebate (Values in Inflated $) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pensioner Rebate per Pensioner ($) | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pensioner Rebate Subsidy (%) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of Pensioner Assessments | 3926 | 3980 | 4000 | 4048 | 4069 | 4089 | 4109 | 4130 | 4151 | 4171 | 4192 | 4213 | 4234 | 4255 | 4277 | 4298 | 4319 | 4341 | 4363 | 4385 | 4407 | 4429 | 4451 | 4473 | 4495 | 4518 | 4540 | 4563 | 4586 | 4609 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Percentage of Pensioners (%) | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pensioner Rebate | 344 | 348 | 350 | 354 | 356 | 358 | 360 | 361 | 363 | 365 | 367 | 369 | 370 | 372 | 374 | 376 | 378 | 380 | 382 | 384 | 386 | 388 | 389 | 391 | 393 | 395 | 397 | 399 | 401 | 403 |
| Pensioner Rebate Subsidy | 189 | 191 | 193 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 221 | 222 |
| Revenue Split (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Rates | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-Residential Rates | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 | 12.11 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trade Waste Charges | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Non-Residential Revenue (%) | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 | 12.87 |
| Total | 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 | 100 |
| Total Residential Revenue (%) | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 | 87.13 |

# Sewer 2022 : Case 5 - increase TRB, lower loans

## Revised/Additional Forecast Data

FINMOD

Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Loan Payment Overrides (Values in Inflated $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Loan Payments: Principal | 402 | 1013 | 1315 | 2274 | 2628 | 2719 | 2816 | 2914 | 3019 | 3125 | 3236 | 3348 | 3466 | 3589 | 3715 | 3848 | 3982 | 4125 | 4268 | 4419 | 3772 | 2711 | 2269 | 527 | 0 | 0 | 0 | 0 | 0 | 0 |
| Standard Loan Payments: Interest | 396 | 968 | 1196 | 2047 | 2235 | 2142 | 2046 | 1946 | 1843 | 1738 | 1628 | 1512 | 1395 | 1271 | 1145 | 1013 | 878 | 738 | 592 | 441 | 292 | 170 | 79 | 14 | 0 | 0 | 0 | 0 | 0 | 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 | 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 | 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 | 0 | 0 | 0 | 0 | 0 |
| Total New Loan Payments: Principal Override | 402 | 1013 | 1315 | 2274 | 2628 | 2719 | 2816 | 2914 | 3019 | 3125 | 3236 | 3348 | 3466 | 3589 | 3715 | 3848 | 3982 | 4125 | 4268 | 4419 | 3772 | 2711 | 2269 | 527 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total New Loan Payments: Interest Override | 396 | 968 | 1196 | 2047 | 2235 | 2142 | 2046 | 1946 | 1843 | 1738 | 1628 | 1512 | 1395 | 1271 | 1145 | 1013 | 878 | 738 | 592 | 441 | 292 | 170 | 79 | 14 | 0 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 |

Printed 8/12/2022 Values in $'000

# Sewer 2022 : Case 5 - increase TRB, lower loans
## Operating Statement

FINMOD
Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXPENSES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management Expenses | 3854 | 3905 | 3925 | 3971 | 3991 | 4011 | 4031 | 4051 | 4071 | 4091 | 4111 | 4132 | 4153 | 4174 | 4195 | 4216 | 4237 | 4258 | 4279 | 4300 | 4322 | 4344 | 4366 | 4388 | 4410 | 4432 | 4454 | 4476 | 4498 | 4520 |
| Administration | 3854 | 3905 | 3925 | 3971 | 3991 | 4011 | 4031 | 4051 | 4071 | 4091 | 4111 | 4132 | 4153 | 4174 | 4195 | 4216 | 4237 | 4258 | 4279 | 4300 | 4322 | 4344 | 4366 | 4388 | 4410 | 4432 | 4454 | 4476 | 4498 | 4520 |
| Engineering and Supervision | 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 | 0 | 0 |
| Operation and Maintenance Expenses | 9859 | 10055 | 10590 | 10571 | 10513 | 10491 | 10467 | 10445 | 10423 | 10400 | 10376 | 10352 | 10328 | 10305 | 10280 | 10256 | 10232 | 10208 | 10184 | 10160 | 10137 | 10110 | 10086 | 10061 | 10036 | 10011 | 9987 | 9961 | 9936 | 9911 |
| Operation Expenses | 5838 | 5981 | 6496 | 6430 | 6351 | 6307 | 6263 | 6219 | 6175 | 6131 | 6087 | 6042 | 5997 | 5951 | 5905 | 5859 | 5813 | 5767 | 5721 | 5675 | 5629 | 5582 | 5534 | 5486 | 5438 | 5389 | 5340 | 5291 | 5242 | 5193 |
| Maintenance Expenses | 3250 | 3293 | 3309 | 3348 | 3365 | 3382 | 3399 | 3416 | 3433 | 3450 | 3467 | 3484 | 3501 | 3519 | 3537 | 3555 | 3573 | 3591 | 3609 | 3627 | 3645 | 3663 | 3681 | 3699 | 3717 | 3736 | 3755 | 3774 | 3793 | 3812 |
| Energy Costs | 452 | 458 | 460 | 465 | 467 | 469 | 471 | 473 | 475 | 477 | 479 | 481 | 483 | 485 | 487 | 489 | 491 | 493 | 495 | 497 | 499 | 501 | 504 | 507 | 510 | 513 | 516 | 519 | 522 | 525 |
| Chemical Costs | 319 | 323 | 325 | 329 | 331 | 333 | 335 | 337 | 339 | 341 | 343 | 345 | 347 | 349 | 351 | 353 | 355 | 357 | 359 | 361 | 363 | 365 | 367 | 369 | 371 | 373 | 375 | 377 | 379 | 381 |
| Depreciation | 8324 | 8524 | 8769 | 9219 | 9360 | 9383 | 9419 | 9434 | 9448 | 9477 | 9503 | 9518 | 9533 | 9548 | 9577 | 9602 | 9617 | 9631 | 9646 | 9675 | 9692 | 9707 | 9724 | 9742 | 9845 | 9945 | 10104 | 10340 | 10498 | 10670 |
| System Assets | 8302 | 8502 | 8748 | 9199 | 9341 | 9383 | 9419 | 9434 | 9448 | 9477 | 9503 | 9518 | 9533 | 9548 | 9577 | 9602 | 9617 | 9631 | 9646 | 9675 | 9692 | 9707 | 9724 | 9742 | 9845 | 9945 | 10104 | 10340 | 10498 | 10670 |
| Plant & Equipment | 22 | 21 | 21 | 20 | 19 | 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 Expenses | 1017 | 1377 | 1508 | 2234 | 2325 | 2160 | 2001 | 1845 | 1694 | 1550 | 1408 | 1266 | 1129 | 992 | 859 | 728 | 603 | 488 | 381 | 276 | 178 | 101 | 46 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Expenses | 600 | 608 | 611 | 618 | 621 | 624 | 627 | 630 | 633 | 636 | 639 | 642 | 645 | 648 | 651 | 654 | 657 | 660 | 663 | 666 | 669 | 672 | 675 | 678 | 681 | 684 | 687 | 690 | 693 | 696 |
| TOTAL EXPENSES | 23654 | 24468 | 25403 | 26614 | 26809 | 26669 | 26545 | 26405 | 26269 | 26154 | 26037 | 25911 | 25788 | 25667 | 25562 | 25455 | 25345 | 25245 | 25154 | 25077 | 24997 | 24935 | 24896 | 24876 | 24972 | 25072 | 25232 | 25467 | 25625 | 25797 |
| REVENUES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rates & Service Availability Charges | 22081 | 22387 | 22964 | 23717 | 24301 | 24440 | 24567 | 24696 | 24833 | 24954 | 25098 | 23790 | 23914 | 24042 | 24173 | 24306 | 24426 | 24563 | 24686 | 24827 | 24952 | 25077 | 25218 | 25344 | 25484 | 25608 | 25743 | 25879 | 26012 | 26155 |
| Residential | 19387 | 19656 | 20162 | 20823 | 21336 | 21458 | 21569 | 21683 | 21802 | 21909 | 22035 | 20887 | 20996 | 21108 | 21223 | 21340 | 21446 | 21566 | 21674 | 21797 | 21907 | 22017 | 22141 | 22252 | 22374 | 22483 | 22602 | 22721 | 22838 | 22964 |
| Non-Residential | 2694 | 2732 | 2802 | 2894 | 2965 | 2982 | 2998 | 3013 | 3030 | 3045 | 3062 | 2903 | 2918 | 2934 | 2950 | 2966 | 2981 | 2997 | 3012 | 3029 | 3045 | 3060 | 3077 | 3092 | 3110 | 3125 | 3142 | 3158 | 3174 | 3191 |
| Trade Waste Charges | 169 | 172 | 176 | 182 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| 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 | 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 | 0 | 0 | 0 | 0 | 0 |
| Interest Income | 291 | 255 | 199 | 114 | 72 | 57 | 40 | 49 | 78 | 102 | 123 | 142 | 160 | 178 | 192 | 205 | 228 | 256 | 284 | 306 | 336 | 373 | 405 | 440 | 405 | 363 | 330 | 258 | 155 | 42 |
| Other Revenues | 88 | 89 | 89 | 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 | 90 | 90 |
| Grants | 639 | 1186 | 1484 | 531 | 178 | 174 | 171 | 167 | 164 | 161 | 158 | 155 | 152 | 149 | 146 | 143 | 140 | 137 | 135 | 132 | 129 | 127 | 124 | 122 | 119 | 117 | 115 | 112 | 111 | 108 |
| Grants for Acquisition of Assets | 450 | 1000 | 1300 | 350 | 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 |
| Pensioner Rebate Subsidy | 189 | 186 | 184 | 181 | 178 | 174 | 171 | 167 | 164 | 161 | 158 | 155 | 152 | 149 | 146 | 143 | 140 | 137 | 135 | 132 | 129 | 127 | 124 | 122 | 119 | 117 | 115 | 112 | 111 | 108 |
| Other 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 | 0 | 0 | 0 | 0 | 0 |
| Contributions | 2015 | 2185 | 2185 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2185 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 | 2186 |
| Developer Charges | 1000 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 | 1171 |
| Developer Provided Assets | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 | 1012 |
| Other Contributions | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| TOTAL REVENUES | 25283 | 26274 | 27098 | 26821 | 27013 | 27134 | 27241 | 27378 | 27542 | 27684 | 27846 | 26544 | 26685 | 26829 | 26972 | 27116 | 27257 | 27421 | 27569 | 27731 | 27883 | 28045 | 28216 | 28376 | 28479 | 28560 | 28662 | 28724 | 28753 | 28781 |
| OPERATING RESULT | 1629 | 1806 | 1695 | 207 | 204 | 465 | 696 | 973 | 1273 | 1529 | 1809 | 633 | 897 | 1162 | 1410 | 1661 | 1912 | 2176 | 2416 | 2654 | 2886 | 3110 | 3320 | 3500 | 3507 | 3488 | 3429 | 3256 | 3127 | 2984 |
| OPERATING RESULT (less Grants for Acq of Assets) | 1179 | 806 | 395 | -143 | 204 | 465 | 696 | 973 | 1273 | 1529 | 1809 | 633 | 897 | 1162 | 1410 | 1661 | 1912 | 2176 | 2416 | 2654 | 2886 | 3110 | 3320 | 3500 | 3507 | 3488 | 3429 | 3256 | 3127 | 2984 |

# Sewer 2022 : Case 5 - increase TRB, lower loans
## Cashflow Statement

FINMOD
Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0 | 0 | 0 | 0 | 0 |
| Payments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acquisition of Assets | 20320 | 23721 | 20420 | 34520 | 13019 | 6920 | 7020 | 4020 | 4020 | 5020 | 4795 | 4020 | 4020 | 4020 | 5020 | 4670 | 4020 | 4019 | 4020 | 5020 | 4170 | 4220 | 5220 | 5520 | 15220 | 15020 | 14220 | 20020 | 24420 | 26520 |
| Net Cash from Capital Activities | -20320 | -23721 | -20420 | -34520 | -13019 | -6920 | -7020 | -4020 | -4020 | -5020 | -4795 | -4020 | -4020 | -4020 | -5020 | -4670 | -4020 | -4019 | -4020 | -5020 | -4170 | -4220 | -5220 | -5520 | -15220 | -15020 | -14220 | -20020 | -24420 | -26520 |
| CashFlow from Financing Activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Receipts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| New Loans Required | 11400 | 16500 | 7250 | 24000 | 6999 | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Principal Loan Payments | 3903 | 2181 | 2005 | 2802 | 3072 | 3095 | 3049 | 3076 | 3020 | 3050 | 3081 | 3110 | 3142 | 3173 | 3205 | 3212 | 3030 | 2795 | 2822 | 2764 | 2302 | 1614 | 1318 | 299 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Cash from Financing Activities | 7497 | 14319 | 5245 | 21198 | 3927 | -3095 | -3049 | -3076 | -3020 | -3050 | -3081 | -3110 | -3142 | -3173 | -3205 | -3212 | -3030 | -2795 | -2822 | -2764 | -2302 | -1614 | -1318 | -299 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL NET CASH | -3907 | -117 | -5748 | -4940 | -567 | -1206 | -993 | 2272 | 2642 | 1898 | 2397 | 1983 | 2228 | 2477 | 1722 | 2340 | 3438 | 3952 | 4180 | 3504 | 5066 | 5943 | 5464 | 6382 | -2909 | -2628 | -1728 | -7464 | -11836 | -13908 |
| Current Year Cash | -3907 | -117 | -5748 | -4940 | -567 | -1206 | -993 | 2272 | 2642 | 1898 | 2397 | 1983 | 2228 | 2477 | 1722 | 2340 | 3438 | 3952 | 4180 | 3504 | 5066 | 5943 | 5464 | 6382 | -2909 | -2628 | -1728 | -7464 | -11836 | -13908 |
| Cash & Investments @Year Start | 21497 | 17161 | 16628 | 10615 | 5536 | 4848 | 3554 | 2498 | 4654 | 7118 | 8796 | 10920 | 12588 | 14455 | 16520 | 17797 | 19646 | 22521 | 25827 | 29275 | 31979 | 36142 | 41058 | 45387 | 50506 | 46436 | 42739 | 40011 | 31753 | 19431 |
| Cash & Investments @Year End | 17590 | 17044 | 10880 | 5675 | 4969 | 3642 | 2560 | 4770 | 7296 | 9015 | 11193 | 12903 | 14817 | 16933 | 18242 | 20137 | 23084 | 26473 | 30007 | 32779 | 37045 | 42084 | 46522 | 51769 | 47597 | 43808 | 41011 | 32546 | 19916 | 5523 |
| Capital Works Funding: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Funding for New Works ($'000) | 0 | 0 | 7620 | 6170 | 2020 | 1920 | 1520 | 20 | 20 | 1020 | 795 | 20 | 20 | 20 | 1020 | 670 | 20 | 20 | 20 | 1020 | 170 | 20 | 120 | 270 | 6220 | 6020 | 10120 | 15520 | 10020 | 11020 |
| Internal Funding for Renewals | 8470 | 6220 | 4250 | 4000 | 4000 | 5000 | 5500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4200 | 5100 | 5250 | 9000 | 9000 | 4100 | 4500 | 14400 | 15500 |
| New Loans | 11400 | 16500 | 7250 | 24000 | 6999 | 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 | 450 | 1000 | 1300 | 350 | 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 Works | 20320 | 23721 | 20420 | 34520 | 13019 | 6920 | 7020 | 4020 | 4020 | 5020 | 4795 | 4020 | 4020 | 4020 | 5020 | 4670 | 4020 | 4019 | 4020 | 5020 | 4170 | 4220 | 5220 | 5520 | 15220 | 15020 | 14220 | 20020 | 24420 | 26520 |
| Cashflow From Operating Activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Receipts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rates and Charges | 22250 | 22559 | 23141 | 23899 | 24487 | 24628 | 24755 | 24885 | 25023 | 25145 | 25290 | 23972 | 24097 | 24226 | 24359 | 24492 | 24614 | 24751 | 24875 | 25017 | 25143 | 25269 | 25411 | 25538 | 25679 | 25804 | 25941 | 26077 | 26211 | 26355 |
| Interest Income | 291 | 255 | 199 | 114 | 72 | 57 | 40 | 49 | 78 | 102 | 123 | 142 | 160 | 178 | 192 | 205 | 228 | 256 | 284 | 306 | 336 | 373 | 405 | 440 | 405 | 363 | 330 | 258 | 155 | 42 |
| Other Revenues | 88 | 89 | 89 | 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 | 90 | 90 |
| Grants | 639 | 1186 | 1484 | 531 | 178 | 174 | 171 | 167 | 164 | 161 | 158 | 155 | 152 | 149 | 146 | 143 | 140 | 137 | 135 | 132 | 129 | 127 | 124 | 122 | 119 | 117 | 115 | 112 | 111 | 108 |
| Contributions | 1003 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1173 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 | 1174 |
| Total Receipts from Operations | 24271 | 25262 | 26086 | 25809 | 26001 | 26122 | 26228 | 26366 | 26530 | 26671 | 26834 | 25532 | 25673 | 25817 | 25960 | 26104 | 26245 | 26409 | 26558 | 26719 | 26871 | 27033 | 27204 | 27364 | 27467 | 27548 | 27650 | 27712 | 27741 | 27769 |
| Payments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management | 3854 | 3905 | 3925 | 3971 | 3991 | 4011 | 4031 | 4051 | 4071 | 4091 | 4111 | 4132 | 4153 | 4174 | 4195 | 4216 | 4237 | 4258 | 4279 | 4300 | 4322 | 4344 | 4366 | 4388 | 4410 | 4432 | 4454 | 4476 | 4498 | 4520 |
| Operations (plus WC Inc) | 9884 | 10088 | 10616 | 10604 | 10540 | 10518 | 10494 | 10472 | 10450 | 10427 | 10403 | 10379 | 10356 | 10332 | 10309 | 10284 | 10260 | 10236 | 10213 | 10189 | 10165 | 10139 | 10115 | 10091 | 10065 | 10041 | 10017 | 9990 | 9966 | 9941 |
| Interest Expenses | 1017 | 1377 | 1508 | 2234 | 2325 | 2160 | 2001 | 1845 | 1694 | 1550 | 1408 | 1266 | 1129 | 992 | 859 | 728 | 603 | 488 | 381 | 276 | 178 | 101 | 46 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Expenses | 600 | 608 | 611 | 618 | 621 | 624 | 627 | 630 | 633 | 636 | 639 | 642 | 645 | 648 | 651 | 654 | 657 | 660 | 663 | 666 | 669 | 672 | 675 | 678 | 681 | 684 | 687 | 690 | 693 | 696 |
| Total Payments from Operations | 15355 | 15978 | 16660 | 17427 | 17476 | 17313 | 17153 | 16998 | 16847 | 16704 | 16561 | 16419 | 16282 | 16146 | 16014 | 15882 | 15757 | 15642 | 15536 | 15431 | 15334 | 15256 | 15202 | 15164 | 15156 | 15157 | 15158 | 15156 | 15157 | 15157 |
| Net Cash from Operations | 8916 | 9285 | 9427 | 8382 | 8525 | 8809 | 9076 | 9368 | 9682 | 9967 | 10274 | 9113 | 9390 | 9671 | 9946 | 10222 | 10488 | 10767 | 11022 | 11288 | 11538 | 11777 | 12002 | 12200 | 12311 | 12391 | 12492 | 12556 | 12584 | 12612 |

# Sewer 2022 : Case 5 - increase TRB, lower loans
## Statement of Financial Position

FINMOD
Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash and Investments | 17590 | 17044 | 10880 | 5675 | 4969 | 3642 | 2560 | 4770 | 7296 | 9015 | 11193 | 12903 | 14817 | 16933 | 18242 | 20137 | 23084 | 26473 | 30007 | 32779 | 37045 | 42084 | 46522 | 51769 | 47597 | 43808 | 41011 | 32546 | 19916 | 5523 |
| Receivables | 958 | 971 | 976 | 987 | 992 | 997 | 1002 | 1007 | 1012 | 1017 | 1022 | 1027 | 1032 | 1037 | 1042 | 1047 | 1053 | 1058 | 1064 | 1069 | 1074 | 1079 | 1085 | 1090 | 1096 | 1101 | 1107 | 1113 | 1118 | 1123 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Property, Plant & Equipment | 295355 | 311562 | 324223 | 350535 | 355205 | 353754 | 352367 | 347966 | 343550 | 340105 | 336408 | 331922 | 327421 | 322905 | 319360 | 315440 | 310856 | 306256 | 301642 | 297999 | 293489 | 289014 | 285522 | 282313 | 288699 | 294786 | 299913 | 310605 | 325539 | 342401 |
| System Assets (1) | 295268 | 311499 | 324182 | 350516 | 355205 | 353754 | 352367 | 347966 | 343550 | 340105 | 336408 | 331922 | 327421 | 322905 | 319360 | 315440 | 310856 | 306256 | 301642 | 297999 | 293489 | 289014 | 285522 | 282313 | 288699 | 294786 | 299913 | 310605 | 325539 | 342401 |
| Plant & Equipment | 87 | 63 | 41 | 20 | 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 |
| Other Assets | 79 | 80 | 80 | 81 | 82 | 82 | 83 | 83 | 84 | 84 | 84 | 85 | 85 | 85 | 86 | 86 | 87 | 87 | 88 | 88 | 88 | 89 | 89 | 90 | 90 | 91 | 91 | 91 | 92 | 92 |
| TOTAL ASSETS | 313982 | 329657 | 336159 | 357278 | 361248 | 358475 | 356012 | 353826 | 351941 | 350221 | 348707 | 345936 | 343355 | 340960 | 338730 | 336710 | 335079 | 333875 | 332800 | 331935 | 331697 | 332267 | 333218 | 335261 | 337482 | 339785 | 342123 | 344355 | 346665 | 349140 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Creditors | 161 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 171 | 172 | 173 | 174 | 175 | 175 | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 182 | 184 | 184 | 185 | 186 | 187 | 188 |
| Borrowings | 23487 | 37233 | 41570 | 61755 | 64176 | 59515 | 55015 | 50597 | 46343 | 42162 | 38053 | 34015 | 30043 | 26138 | 22296 | 18540 | 15058 | 11895 | 8783 | 5805 | 3361 | 1665 | 307 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| TOTAL LIABILITIES | 23648 | 37396 | 41734 | 61920 | 64342 | 59682 | 55183 | 50766 | 46513 | 42333 | 38224 | 34187 | 30217 | 26312 | 22470 | 18715 | 15234 | 12073 | 8962 | 5984 | 3541 | 1846 | 489 | 183 | 184 | 185 | 186 | 187 | 188 | 189 |
| NET ASSETS COMMITTED | 290334 | 292260 | 294425 | 295358 | 296906 | 298793 | 300830 | 303060 | 305429 | 307888 | 310483 | 311749 | 313138 | 314648 | 316259 | 317995 | 319845 | 321802 | 323839 | 325951 | 328156 | 330420 | 332730 | 335078 | 337298 | 339600 | 341937 | 344168 | 346477 | 348951 |
| EQUITY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accumulated Operating Result | 144759 | 143034 | 141241 | 138003 | 134841 | 132017 | 129493 | 127308 | 125476 | 123945 | 122731 | 120371 | 118332 | 116608 | 115173 | 114025 | 113156 | 112572 | 112242 | 112158 | 112309 | 112680 | 113251 | 113989 | 114716 | 115405 | 116020 | 116447 | 116734 | 116871 |
| Asset Revaluation Reserve | 145575 | 149226 | 153184 | 157355 | 162066 | 166776 | 171337 | 175752 | 179953 | 183943 | 187752 | 191378 | 194806 | 198040 | 201086 | 203970 | 206690 | 209231 | 211597 | 213793 | 215847 | 217741 | 219479 | 221090 | 222583 | 224195 | 225917 | 227722 | 229743 | 232080 |
| TOTAL EQUITY | 290334 | 292260 | 294425 | 295358 | 296906 | 298793 | 300830 | 303060 | 305429 | 307888 | 310483 | 311749 | 313138 | 314648 | 316259 | 317995 | 319845 | 321802 | 323839 | 325951 | 328156 | 330420 | 332730 | 335078 | 337298 | 339600 | 341937 | 344168 | 346477 | 348951 |
| (1) Notes to System Assets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current Replacement Cost | 472231 | 486214 | 503396 | 534927 | 544958 | 547890 | 550422 | 551454 | 552486 | 554519 | 556326 | 557358 | 558390 | 559422 | 561454 | 563136 | 564168 | 565200 | 566232 | 568264 | 569446 | 570478 | 571610 | 572892 | 580124 | 587156 | 598288 | 614820 | 625852 | 637884 |
| Less: Accumulated Depreciation | 176963 | 174715 | 179213 | 184411 | 189753 | 194136 | 198055 | 203489 | 208937 | 214414 | 219918 | 225436 | 230969 | 236518 | 242094 | 247696 | 253313 | 258944 | 264590 | 270265 | 275957 | 281464 | 286088 | 290580 | 291424 | 292370 | 298375 | 304215 | 300313 | 295483 |
| Written Down Current Cost | 295268 | 311499 | 324182 | 350516 | 355205 | 353754 | 352367 | 347966 | 343550 | 340105 | 336408 | 331922 | 327421 | 322905 | 319360 | 315440 | 310856 | 306256 | 301642 | 297999 | 293489 | 289014 | 285522 | 282313 | 288699 | 294786 | 299913 | 310605 | 325539 | 342401 |

# Sewer 2022 : Case 5 - increase TRB, lower loans
## Performance Indicators

FINMOD
Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Typical Residential Bills | 1010 | 1010 | 1030 | 1050 | 1070 | 1070 | 1070 | 1070 | 1070 | 1070 | 1070 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 | 1010 |
| Average Residential Bills (2021/22$) | 992 | 992 | 1013 | 1034 | 1054 | 1054 | 1055 | 1055 | 1055 | 1055 | 1056 | 996 | 996 | 997 | 997 | 998 | 998 | 998 | 998 | 999 | 999 | 999 | 1000 | 1000 | 1000 | 1000 | 1000 | 1001 | 1001 | 1001 |
| Mgmnt Cost / Assessment (2021/22$) | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 | 186 |
| OMA Cost per Assessment (2021/22$) | 662 | 665 | 688 | 682 | 676 | 673 | 669 | 665 | 662 | 659 | 655 | 652 | 648 | 646 | 642 | 639 | 635 | 632 | 629 | 626 | 622 | 619 | 616 | 613 | 609 | 606 | 603 | 600 | 597 | 594 |
| Operating Sales Margin (%) | 3.8 | 3.82 | 2.81 | 3.81 | 5.57 | 5.97 | 6.28 | 6.68 | 7.1 | 7.4 | 7.8 | 2.94 | 3.35 | 3.76 | 4.13 | 4.52 | 4.9 | 5.34 | 5.71 | 6.1 | 6.47 | 6.85 | 7.27 | 7.63 | 7.72 | 7.77 | 7.64 | 7.24 | 7.11 | 6.96 |
| Economic Real Rate of Return (%) | 0.64 | 0.62 | 0.53 | 0.56 | 0.69 | 0.73 | 0.75 | 0.8 | 0.84 | 0.88 | 0.92 | 0.53 | 0.57 | 0.61 | 0.65 | 0.69 | 0.74 | 0.79 | 0.83 | 0.88 | 0.93 | 0.98 | 1.04 | 1.09 | 1.07 | 1.06 | 1.03 | 0.97 | 0.91 | 0.86 |
| Debt Service Ratio | 0.21 | 0.15 | 0.14 | 0.2 | 0.21 | 0.2 | 0.19 | 0.19 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 | 0.16 | 0.16 | 0.15 | 0.14 | 0.12 | 0.12 | 0.11 | 0.09 | 0.06 | 0.05 | 0.01 | 0 | 0 | 0 | 0 | 0 | 0 |
| Debt/Equity Ratio | 0.08 | 0.13 | 0.14 | 0.21 | 0.22 | 0.2 | 0.18 | 0.17 | 0.15 | 0.14 | 0.12 | 0.11 | 0.1 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest Cover | 2.16 | 1.59 | 1.26 | 0.94 | 1.09 | 1.22 | 1.35 | 1.53 | 1.75 | 1.99 | 2.29 | 1.5 | 1.79 | 2.17 | 2.64 | 3.28 | 4.17 | 5.46 | 7.34 | 10.62 | 17.2 | 31.73 | 73.34 | 442.14 | 0 | 0 | 0 | 0 | 0 | 0 |
| Return on capital (%) | 0.7 | 0.67 | 0.58 | 0.59 | 0.7 | 0.73 | 0.76 | 0.8 | 0.84 | 0.88 | 0.92 | 0.55 | 0.59 | 0.63 | 0.67 | 0.71 | 0.75 | 0.8 | 0.84 | 0.88 | 0.92 | 0.97 | 1.01 | 1.05 | 1.04 | 1.03 | 1 | 0.95 | 0.9 | 0.85 |
| Cash and Investments (2021/22$'000) | 17590 | 17044 | 10880 | 5675 | 4969 | 3642 | 2560 | 4770 | 7296 | 9015 | 11193 | 12903 | 14817 | 16933 | 18242 | 20137 | 23084 | 26473 | 30007 | 32779 | 37045 | 42084 | 46522 | 51769 | 47597 | 43808 | 41011 | 32546 | 19916 | 5523 |
| Debt outstanding (2021/22$'000) | 23487 | 37233 | 41570 | 61755 | 64176 | 59515 | 55015 | 50597 | 46343 | 42162 | 38053 | 34015 | 30043 | 26138 | 22296 | 18540 | 15058 | 11895 | 8783 | 5805 | 3361 | 1665 | 307 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Net Debt (2021/22$'000) | 5897 | 20189 | 30690 | 56080 | 59207 | 55873 | 52455 | 45827 | 39047 | 33147 | 26860 | 21112 | 15226 | 9205 | 4054 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Water 2022 : Case 3 - IWCM review base case

## Summary Report of Assumptions and Results

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Eurobodalla Shire Council

| | 2021/22 | 2025/26 | 2030/31 | 2035/36 | 2040/41 | 2045/46 | 2050/51 |
|---|---|---|---|---|---|---|---|
| Inflation Rates - General (%) | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| Inflation Rates - Capital Works (%) | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 |
| Borrowing Interest Rate (%) | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 |
| Term of New Loans (years) | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Investment Interest Rate (%) | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Growth Rate - Residential (%) | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Developer Charges per Assessment - Residential (2021/22 $) | 1000 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 |
| Subsidised Scheme Capital Works ($m) | 5.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grants on Acquisition of Assets ($m) | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Renewals ($m) | 2.15 | 4.40 | 3.30 | 3.30 | 3.05 | 3.05 | 3.05 |
| Renewals (%) | 0.56 | 0.88 | 0.64 | 0.63 | 0.58 | 0.58 | 0.57 |
| Borrowing Outstanding ($m) | 0.67 | 0.36 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mgmnt Cost / Assessment | 268 | 268 | 268 | 268 | 268 | 268 | 268 |
| Debt Equity Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OMA Cost Per Assessment | 434 | 466 | 478 | 466 | 455 | 444 | 433 |
| Economic Real Rate of Return (%) | 1.99 | 0.74 | 0.62 | 0.84 | 1.04 | 1.36 | 1.75 |
| Return on Capital (%) | 1.85 | 0.79 | 0.64 | 0.86 | 1.01 | 1.18 | 1.34 |
| Net Debt ($m) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Debt Service Ratio | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Residential Bills | 758 | 760 | 761 | 764 | 766 | 767 | 769 |
| Typical Residential Bills (2021/22$) | 796 | 796 | 796 | 796 | 796 | 796 | 796 |

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# STANDARD LOAN PAYMENT SCHEDULE

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| | Drawdown | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2021/22 Principal | 495 | 42 | 44 | 45 | 47 | 48 | 50 | 52 | 54 | 56 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest | | 17 | 16 | 14 | 12 | 11 | 9 | 7 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022/23 Principal | 205 | | 18 | 18 | 18 | 20 | 20 | 20 | 22 | 22 | 23 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest | | | 7 | 6 | 6 | 5 | 4 | 4 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023/24 Principal | 33620 | | | 2861 | 2963 | 3067 | 3176 | 3288 | 3404 | 3524 | 3648 | 3777 | 3910 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest | | | | 1152 | 1051 | 946 | 838 | 726 | 610 | 489 | 365 | 237 | 103 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024/25 Principal | 23692 | | | | 2017 | 2088 | 2161 | 2238 | 2317 | 2399 | 2483 | 2571 | 2661 | 2756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest | | | | | 812 | 740 | 667 | 591 | 512 | 429 | 345 | 258 | 167 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Principal | 58012 | 42 | 62 | 2924 | 5045 | 5223 | 5407 | 5598 | 5797 | 6001 | 6212 | 6372 | 6571 | 2756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Interest | | 17 | 23 | 1172 | 1881 | 1702 | 1518 | 1328 | 1130 | 923 | 714 | 495 | 270 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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## Historical Operating Statement

| | 2019/20* | 2020/21* |
|---|---|---|
| **EXPENSES** | | |
| Management Expenses | *0* | *5685* |
| Administration | 0 | 5685 |
| Engineering and Supervision | | |
| Operation and Maintenance Expenses | *0* | *5632* |
| Operation Expenses | 0 | 2857 |
| Maintenance Expenses | | 2058 |
| Energy Costs | 0 | 427 |
| Chemical Costs | 0 | 290 |
| Purchase of Water | | |
| Depreciation | *0* | *6462* |
| System Assets | 0 | 6416 |
| Plant & Equipment | 0 | 46 |
| Interest Expenses | 0 | 48 |
| Other Expenses | | 93 |
| **TOTAL EXPENSES** | **0** | **17920** |
| **REVENUES** | | |
| Rates & Service Availability Charges | *0* | *7434* |
| Residential | 0 | 6739 |
| Non-Residential | 0 | 695 |
| User Charges | *0* | *10874* |
| Sales of Water : Residential | 0 | 8622 |
| Sales of Water : Non-Residential | 0 | 2252 |
| Extra Charges | 0 | 0 |
| Interest Income | 0 | 328 |
| Other Revenues | 0 | 443 |
| Grants | *0* | *1399* |
| Grants for Acquisition of Assets | 0 | 1200 |
| Pensioner Rebate Subsidy | 0 | 199 |
| Other Grants | 0 | |
| Contributions | *0* | *1401* |
| Developer Charges | 0 | 1009 |
| Developer Provided Assets | | 340 |
| Other Contributions | | 52 |
| **TOTAL REVENUES** | **0** | **21879** |
| **OPERATING RESULT** | **0** | **3959** |
| **OPERATING RESULT (less Grants for Acq of Assets)** | **0** | **2759** |

# Water 2022 : Case 3 - IWCM review base case

## Historical Statement of Financial Position



| | 2019/20* | 2020/21* |
|---|---|---|
| **Cash and Investments** | 0 | 44157 |
| **Receivables** | 0 | 4355 |
| **Inventories** | | |
| **Property, Plant & Equipment** | *0* | *198764* |
| **System Assets (1)** | 0 | 198425 |
| **Plant & Equipment** | 0 | 339 |
| **Other Assets** | 0 | 0 |
| **TOTAL ASSETS** | **0** | **247276** |
| **LIABILITIES** | | |
| **Bank Overdraft** | | |
| **Creditors** | 0 | 215 |
| **Borrowings** | 0 | 784 |
| **Provisions** | | |
| **TOTAL LIABILITIES** | **0** | **999** |
| **NET ASSETS COMMITTED** | **0** | **246277** |
| **EQUITY** | | |
| **Accumulated Operating Result** | 0 | 172425 |
| **Asset Revaluation Reserve** | 0 | 73852 |
| **TOTAL EQUITY** | **0** | **246277** |

**(1) Notes to System Assets**

| | | |
|---|---|---|
| **Current Replacement Cost** | | 370309 |
| **Less: Accumulated Depreciation** | 0 | 171884 |
| **Written Down Current Cost** | 0 | 198425 |

# Water 2022 : Case 3 - IWCM review base case

## Base Forecast Data

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| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Financial Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inflation Rate - General (%) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Inflation Rate - Capital Works (%) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Borrowing Interest Rate for New Loans (%) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Investment Interest Rate (%) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Number of Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Growth Rate (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Assessments | 0.5 | 0.5 | 0.5 | 1.17 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Non-Residential Assessments | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Total Assessments | 0.5 | 0.5 | 0.5 | 1.13 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Number of New Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 103 | 104 | 104 | 245 | 106 | 107 | 107 | 108 | 108 | 109 | 109 | 110 | 110 | 111 | 111 | 112 | 113 | 113 | 114 | 114 | 115 | 115 | 116 | 117 | 117 | 118 | 118 | 119 | 120 | 120 |
| Non-Residential | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Total New Assessments | 108 | 109 | 109 | 250 | 111 | 112 | 112 | 113 | 114 | 115 | 115 | 116 | 116 | 117 | 117 | 118 | 119 | 119 | 120 | 120 | 121 | 121 | 122 | 123 | 123 | 124 | 124 | 125 | 126 | 126 |
| Projected Number of Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 20750 | 20854 | 20958 | 21203 | 21309 | 21416 | 21523 | 21631 | 21739 | 21848 | 21957 | 22067 | 22177 | 22288 | 22399 | 22511 | 22624 | 22737 | 22851 | 22965 | 23080 | 23195 | 23311 | 23428 | 23545 | 23663 | 23781 | 23900 | 24020 | 24140 |
| Non-Residential | 1065 | 1070 | 1075 | 1080 | 1085 | 1090 | 1095 | 1100 | 1106 | 1112 | 1118 | 1124 | 1130 | 1136 | 1142 | 1148 | 1154 | 1160 | 1166 | 1172 | 1178 | 1184 | 1190 | 1196 | 1202 | 1208 | 1214 | 1220 | 1226 | 1232 |
| Total Projected Assessments | 21815 | 21924 | 22033 | 22283 | 22394 | 22506 | 22618 | 22731 | 22845 | 22960 | 23075 | 23191 | 23307 | 23424 | 23541 | 23659 | 23778 | 23897 | 24017 | 24137 | 24258 | 24379 | 24501 | 24624 | 24747 | 24871 | 24995 | 25120 | 25246 | 25372 |
| Backlog Assessments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 0 | 0 | 0 | 140 | 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 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Total Backlog Assessments | 0 | 0 | 0 | 140 | 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 Charges / Vacant Assessments (Values in 2021/22 $) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Developer Charges $/Assessment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 | 8435 |
| Non-Residential | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 | 12600 |
| Number of Vacant Residential Assessments | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 | 962 |
| Average Charge of Vacant Assessments | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| % 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 | 0 | 0 | 0 | 0 | 0 |
| Depreciation of Existing Plant and Equipment (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current Replacement Cost of System Assets | 379567 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written Down Current Cost of System Assets | 203386 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Annual Depreciation of Existing System Assets | 6576 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written Down Value of Plant and Equipment | 339 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Annual Depreciation of Existing Plant and Equipment | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Water 2022 : Case 3 - IWCM review base case

## Base Forecast Data

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| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Existing Loan Payments (Values in Inflated $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Existing Loan Payments : Principal (Total:784) | 565 | 219 | 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 |
| Existing Loan Payments : Interest (Total:55) | 43 | 12 | 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 |
| Capital Works Program (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subsidised Scheme (Total:137100) | 5100 | 27500 | 62500 | 42000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other New System Assets (Total:35500) | 140 | 640 | 6540 | 440 | 3740 | 4390 | 6390 | 3390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 1140 | 4140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| Renewals (Total:128250) | 2150 | 2250 | 2900 | 3600 | 4400 | 11500 | 17300 | 10300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 4050 | 7050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 |
| Total Capital Works (Total:300850) | 7390 | 30390 | 71940 | 46040 | 8140 | 15890 | 23690 | 13690 | 3690 | 3690 | 3690 | 3690 | 3690 | 3690 | 3690 | 5190 | 11190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 |
| Grant For Acquisition of Assets (% of Subsidised Scheme) | 49.02 | 68.73 | 58.56 | 47.14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grant For Acquisition of Assets ($) (Total:77800) | 2500 | 18900 | 36600 | 19800 | 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:10200) | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| Plant and Equipment Expenditure / Asset Disposal (Values in 2021/22 $'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 | 0 | 0 | 0 | 0 | 0 |
| Proceeds from Disposal of Plant and Equipment | 0 | 0 | 77 | 82 | 125 | 63 | 233 | 66 | 167 | 113 | 116 | 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 | 77 | 82 | 125 | 63 | 233 | 66 | 167 | 113 | 116 | 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 | 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 | 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 | 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 | 0 | 0 | 0 | 0 | 0 |

# Water 2022 : Case 3 - IWCM review base case

## Revised/Additional Forecast Data

FINMOD

Eurobodalla Shire Council

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OMA / Revenue Overrides (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | 5856 | 5885 | 5914 | 5981 | 6011 | 6041 | 6071 | 6101 | 6132 | 6163 | 6194 | 6225 | 6256 | 6287 | 6318 | 6350 | 6382 | 6414 | 6446 | 6478 | 6510 | 6543 | 6576 | 6609 | 6642 | 6675 | 6708 | 6742 | 6776 | 6810 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Engineering and Supervision | 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 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Expenses | 2943 | 2958 | 2973 | 3007 | 3022 | 3037 | 3052 | 3067 | 3082 | 3097 | 3112 | 3128 | 3144 | 3160 | 3176 | 3192 | 3208 | 3224 | 3240 | 3256 | 3272 | 3288 | 3304 | 3321 | 3338 | 3355 | 3372 | 3389 | 3406 | 3423 |
| Override | 746 | 1292 | 1483 | 1533 | 1488 | 2023 | 1948 | 1903 | 1857 | 1811 | 1765 | 1719 | 1673 | 1627 | 1581 | 1534 | 1487 | 1439 | 1391 | 1343 | 1295 | 1246 | 1197 | 1148 | 1099 | 1050 | 1001 | 951 | 901 | 851 |
| Maintenance Expenses | 2120 | 2131 | 2142 | 2166 | 2177 | 2188 | 2199 | 2210 | 2221 | 2232 | 2243 | 2254 | 2265 | 2276 | 2287 | 2298 | 2309 | 2321 | 2333 | 2345 | 2357 | 2369 | 2381 | 2393 | 2405 | 2417 | 2429 | 2441 | 2453 | 2465 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Energy Costs | 440 | 442 | 444 | 449 | 451 | 453 | 455 | 457 | 459 | 461 | 463 | 465 | 467 | 469 | 471 | 473 | 475 | 477 | 479 | 481 | 483 | 485 | 487 | 489 | 491 | 493 | 495 | 497 | 499 | 501 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chemical Costs | 299 | 300 | 302 | 305 | 307 | 309 | 311 | 313 | 315 | 317 | 319 | 321 | 323 | 325 | 327 | 329 | 331 | 333 | 335 | 337 | 339 | 341 | 343 | 345 | 347 | 349 | 351 | 353 | 355 | 357 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Expenses | 96 | 96 | 96 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Revenue | 456 | 458 | 460 | 465 | 467 | 469 | 471 | 473 | 475 | 477 | 479 | 481 | 483 | 485 | 487 | 489 | 491 | 493 | 495 | 497 | 499 | 501 | 504 | 507 | 510 | 513 | 516 | 519 | 522 | 525 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Other 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Contributions | 54 | 54 | 54 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Developer Charges Overrides (Values in 2021/22 $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calculated from Scheme Data | 932 | 940 | 940 | 949 | 957 | 966 | 966 | 974 | 987 | 995 | 995 | 1003 | 1003 | 1012 | 1012 | 1020 | 1029 | 1029 | 1037 | 1037 | 1046 | 1046 | 1054 | 1062 | 1062 | 1071 | 1071 | 1079 | 1088 | 1088 |
| Override | 1000 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 |
| Pensioner Rebate (Values in Inflated $) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pensioner Rebate per Pensioner ($) | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 | 87.5 |
| Override | 89 | 86.5 | 87.75 | 89 | 90.25 | 91.5 | 93 | 94.25 | 95.75 | 97.25 | 98.75 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 | 97.25 |
| Pensioner Rebate Subsidy (%) | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of Pensioner Assessments | 4156 | 4177 | 4198 | 4247 | 4268 | 4290 | 4311 | 4333 | 4354 | 4376 | 4398 | 4420 | 4442 | 4464 | 4487 | 4509 | 4532 | 4554 | 4577 | 4600 | 4623 | 4646 | 4669 | 4693 | 4716 | 4740 | 4763 | 4787 | 4811 | 4835 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Percentage of Pensioners (%) | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 | 20.03 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pensioner Rebate | 370 | 361 | 368 | 378 | 385 | 393 | 401 | 408 | 417 | 426 | 434 | 430 | 432 | 434 | 436 | 439 | 441 | 443 | 445 | 447 | 450 | 452 | 454 | 456 | 459 | 461 | 463 | 466 | 468 | 470 |
| Pensioner Rebate Subsidy | 204 | 199 | 202 | 208 | 212 | 216 | 221 | 224 | 229 | 234 | 239 | 237 | 238 | 239 | 240 | 241 | 243 | 244 | 245 | 246 | 248 | 249 | 250 | 251 | 252 | 254 | 255 | 256 | 257 | 259 |
| Revenue Split (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Rates | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 | 36.81 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-Residential Rates | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sales of Water: Residential | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 | 47.09 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sales of Water: Non-Residential | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Non-Residential Revenue (%) | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 |
| Total Residential Revenue (%) | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 | 83.9 |
| Total | 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 | 100 |

# Water 2022 : Case 3 - IWCM review base case
## Revised/Additional Forecast Data

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Loan Payment Overrides (Values in Inflated $'000) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Loan Payments: Principal | 42 | 62 | 2924 | 5045 | 5223 | 5407 | 5598 | 5797 | 6001 | 6212 | 6372 | 6571 | 2756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Standard Loan Payments: Interest | 17 | 23 | 1172 | 1881 | 1702 | 1518 | 1328 | 1130 | 923 | 714 | 495 | 270 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 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 | 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 | 0 | 0 | 0 | 0 | 0 |
| Total New Loan Payments: Principal | 42 | 62 | 2924 | 5045 | 5223 | 5407 | 5598 | 5797 | 6001 | 6212 | 6372 | 6571 | 2756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total New Loan Payments: Interest | 17 | 23 | 1172 | 1881 | 1702 | 1518 | 1328 | 1130 | 923 | 714 | 495 | 270 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | 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 | 0 | 0 | 0 | 0 | 0 |
| Override | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Water 2022 : Case 3 - IWCM review base case

FINMOD
Eurobodalla Shire Council

## Operating Statement

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXPENSES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management Expenses | 5856 | 5885 | 5914 | 5981 | 6011 | 6041 | 6071 | 6101 | 6132 | 6163 | 6194 | 6225 | 6256 | 6287 | 6318 | 6350 | 6382 | 6414 | 6446 | 6478 | 6510 | 6543 | 6576 | 6609 | 6642 | 6675 | 6708 | 6742 | 6776 | 6810 |
| Administration | 5856 | 5885 | 5914 | 5981 | 6011 | 6041 | 6071 | 6101 | 6132 | 6163 | 6194 | 6225 | 6256 | 6287 | 6318 | 6350 | 6382 | 6414 | 6446 | 6478 | 6510 | 6543 | 6576 | 6609 | 6642 | 6675 | 6708 | 6742 | 6776 | 6810 |
| Engineering and Supervision | 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 | 0 | 0 |
| Operation and Maintenance Expenses | 3605 | 4165 | 4370 | 4454 | 4423 | 4974 | 4913 | 4883 | 4852 | 4821 | 4790 | 4758 | 4728 | 4697 | 4666 | 4634 | 4602 | 4571 | 4538 | 4506 | 4473 | 4442 | 4408 | 4375 | 4342 | 4309 | 4276 | 4242 | 4208 | 4174 |
| Operation Expenses | 746 | 1292 | 1483 | 1533 | 1488 | 2023 | 1948 | 1903 | 1857 | 1811 | 1765 | 1719 | 1673 | 1627 | 1581 | 1534 | 1487 | 1439 | 1391 | 1343 | 1295 | 1246 | 1197 | 1148 | 1099 | 1050 | 1001 | 951 | 901 | 851 |
| Maintenance Expenses | 2120 | 2131 | 2142 | 2166 | 2177 | 2188 | 2199 | 2210 | 2221 | 2232 | 2243 | 2254 | 2265 | 2276 | 2287 | 2298 | 2309 | 2321 | 2333 | 2345 | 2357 | 2369 | 2381 | 2393 | 2405 | 2417 | 2429 | 2441 | 2453 | 2465 |
| Energy Costs | 440 | 442 | 444 | 449 | 451 | 453 | 455 | 457 | 459 | 461 | 463 | 465 | 467 | 469 | 471 | 473 | 475 | 477 | 479 | 481 | 483 | 485 | 487 | 489 | 491 | 493 | 495 | 497 | 499 | 501 |
| Chemical Costs | 299 | 300 | 302 | 305 | 307 | 309 | 311 | 313 | 315 | 317 | 319 | 321 | 323 | 325 | 327 | 329 | 331 | 333 | 335 | 337 | 339 | 341 | 343 | 345 | 347 | 349 | 351 | 353 | 355 | 357 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Depreciation | 6701 | 7106 | 8096 | 8707 | 8763 | 8829 | 8924 | 8959 | 8949 | 8959 | 8968 | 8979 | 8990 | 9000 | 9011 | 9032 | 9096 | 9103 | 9110 | 9116 | 9124 | 9130 | 9137 | 9144 | 9150 | 9157 | 9164 | 9170 | 9177 | 9184 |
| System Assets | 6656 | 7062 | 8053 | 8665 | 8722 | 8789 | 8885 | 8938 | 8949 | 8959 | 8968 | 8979 | 8990 | 9000 | 9011 | 9032 | 9096 | 9103 | 9110 | 9116 | 9124 | 9130 | 9137 | 9144 | 9150 | 9157 | 9164 | 9170 | 9177 | 9184 |
| Plant & Equipment | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest Expenses | 60 | 34 | 1116 | 1747 | 1542 | 1342 | 1145 | 951 | 758 | 572 | 387 | 206 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Expenses | 96 | 96 | 96 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| TOTAL EXPENSES | 16318 | 17286 | 19591 | 20984 | 20836 | 21283 | 21150 | 20990 | 20787 | 20612 | 20435 | 20265 | 20124 | 20081 | 20092 | 20113 | 20176 | 20185 | 20190 | 20198 | 20204 | 20212 | 20218 | 20225 | 20231 | 20238 | 20245 | 20252 | 20258 | 20265 |
| REVENUES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rates & Service Availability Charges | 7612 | 7661 | 7698 | 7794 | 7841 | 7884 | 7919 | 7963 | 8008 | 8048 | 8092 | 8137 | 8190 | 8228 | 8279 | 8324 | 8372 | 8414 | 8458 | 8512 | 8554 | 8603 | 8647 | 8700 | 8746 | 8795 | 8843 | 8886 | 8936 | 8986 |
| Residential | 6900 | 6944 | 6978 | 7065 | 7107 | 7146 | 7179 | 7217 | 7259 | 7295 | 7335 | 7375 | 7423 | 7459 | 7504 | 7545 | 7588 | 7627 | 7667 | 7716 | 7753 | 7798 | 7838 | 7886 | 7928 | 7972 | 8016 | 8055 | 8100 | 8145 |
| Non-Residential | 712 | 717 | 721 | 729 | 734 | 738 | 741 | 745 | 749 | 753 | 757 | 761 | 767 | 770 | 775 | 779 | 783 | 787 | 791 | 796 | 801 | 805 | 809 | 814 | 818 | 823 | 827 | 832 | 836 | 841 |
| User Charges | 11132 | 11204 | 11259 | 11398 | 11466 | 11528 | 11583 | 11644 | 11710 | 11770 | 11835 | 11899 | 11975 | 12034 | 12107 | 12174 | 12242 | 12305 | 12371 | 12449 | 12509 | 12581 | 12647 | 12723 | 12791 | 12861 | 12932 | 12995 | 13069 | 13142 |
| Sales of Water : Residential | 8826 | 8884 | 8927 | 9037 | 9091 | 9141 | 9184 | 9232 | 9285 | 9332 | 9385 | 9435 | 9494 | 9541 | 9600 | 9652 | 9707 | 9757 | 9809 | 9870 | 9918 | 9976 | 10027 | 10088 | 10142 | 10198 | 10254 | 10304 | 10362 | 10420 |
| Sales of Water : Non-Residential | 2306 | 2320 | 2332 | 2360 | 2374 | 2387 | 2399 | 2412 | 2425 | 2437 | 2451 | 2464 | 2481 | 2493 | 2507 | 2522 | 2536 | 2549 | 2562 | 2578 | 2591 | 2605 | 2619 | 2635 | 2649 | 2664 | 2679 | 2691 | 2707 | 2722 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Interest Income | 703 | 723 | 693 | 697 | 638 | 497 | 260 | 72 | 25 | 34 | 47 | 60 | 98 | 162 | 231 | 287 | 290 | 335 | 400 | 462 | 521 | 576 | 628 | 678 | 724 | 768 | 809 | 848 | 884 | 918 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Grants | 2704 | 19095 | 36792 | 19993 | 192 | 191 | 191 | 188 | 188 | 187 | 187 | 181 | 177 | 173 | 170 | 166 | 164 | 160 | 157 | 154 | 151 | 148 | 145 | 142 | 139 | 137 | 134 | 131 | 129 | 127 |
| Grants for Acquisition of Assets | 2500 | 18900 | 36600 | 19800 | 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 |
| Pensioner Rebate Subsidy | 204 | 194 | 192 | 193 | 192 | 191 | 191 | 188 | 188 | 187 | 187 | 181 | 177 | 173 | 170 | 166 | 164 | 160 | 157 | 154 | 151 | 148 | 145 | 142 | 139 | 137 | 134 | 131 | 129 | 127 |
| Other 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 | 0 | 0 | 0 | 0 | 0 |
| Contributions | 1394 | 1594 | 1594 | 1594 | 1595 | 1595 | 1595 | 1594 | 1595 | 1596 | 1594 | 1595 | 1595 | 1595 | 1595 | 1595 | 1595 | 1595 | 1595 | 1595 | 1595 | 1594 | 1595 | 1595 | 1594 | 1595 | 1595 | 1595 | 1595 | 1595 |
| Developer Charges | 1000 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 |
| Developer Provided Assets | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| Other Contributions | 54 | 54 | 54 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| TOTAL REVENUES | 23545 | 40277 | 58037 | 41476 | 21732 | 21695 | 21549 | 21461 | 21526 | 21636 | 21755 | 21871 | 22035 | 22194 | 22383 | 22546 | 22663 | 22810 | 22981 | 23172 | 23329 | 23502 | 23663 | 23838 | 23996 | 24156 | 24314 | 24456 | 24613 | 24768 |
| OPERATING RESULT | 7227 | 22991 | 38446 | 20491 | 896 | 412 | 399 | 471 | 739 | 1024 | 1319 | 1607 | 1911 | 2112 | 2291 | 2433 | 2486 | 2625 | 2791 | 2974 | 3126 | 3290 | 3445 | 3613 | 3765 | 3918 | 4069 | 4204 | 4355 | 4503 |
| OPERATING RESULT (less Grants for Acq of Assets) | 4727 | 4091 | 1846 | 692 | 896 | 412 | 399 | 471 | 739 | 1024 | 1319 | 1607 | 1911 | 2112 | 2291 | 2433 | 2486 | 2625 | 2791 | 2974 | 3126 | 3290 | 3445 | 3613 | 3765 | 3918 | 4069 | 4204 | 4355 | 4503 |

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## Cashflow Statement

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cashflow From Operating Activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Receipts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rates and Charges | 18744 | 18865 | 18957 | 19191 | 19307 | 19412 | 19503 | 19607 | 19718 | 19818 | 19927 | 20035 | 20164 | 20262 | 20386 | 20498 | 20614 | 20719 | 20829 | 20961 | 21063 | 21184 | 21294 | 21423 | 21538 | 21656 | 21775 | 21882 | 22005 | 22128 |
| Interest Income | 703 | 723 | 693 | 697 | 638 | 497 | 260 | 72 | 25 | 34 | 47 | 60 | 98 | 162 | 231 | 287 | 290 | 335 | 400 | 462 | 521 | 576 | 628 | 678 | 724 | 768 | 809 | 848 | 884 | 918 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Grants | 2704 | 19095 | 36792 | 19993 | 192 | 191 | 191 | 188 | 188 | 187 | 187 | 181 | 177 | 173 | 170 | 166 | 164 | 160 | 157 | 154 | 151 | 148 | 145 | 142 | 139 | 137 | 134 | 131 | 129 | 127 |
| Contributions | 1054 | 1254 | 1254 | 1255 | 1256 | 1255 | 1256 | 1254 | 1255 | 1256 | 1255 | 1255 | 1255 | 1255 | 1256 | 1255 | 1255 | 1255 | 1255 | 1255 | 1255 | 1254 | 1255 | 1255 | 1254 | 1255 | 1255 | 1255 | 1255 | 1255 |
| Total Receipts from Operations | 23205 | 39937 | 57697 | 41136 | 21392 | 21355 | 21209 | 21121 | 21186 | 21295 | 21415 | 21531 | 21695 | 21853 | 22043 | 22206 | 22323 | 22470 | 22641 | 22832 | 22990 | 23162 | 23323 | 23498 | 23656 | 23816 | 23974 | 24116 | 24273 | 24428 |
| Payments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management | 5856 | 5885 | 5914 | 5981 | 6011 | 6041 | 6071 | 6101 | 6132 | 6163 | 6194 | 6225 | 6256 | 6287 | 6318 | 6350 | 6382 | 6414 | 6446 | 6478 | 6510 | 6543 | 6576 | 6609 | 6642 | 6675 | 6708 | 6742 | 6776 | 6810 |
| Operations (plus WC Inc) | 3730 | 4290 | 4495 | 4607 | 4551 | 5102 | 5043 | 5012 | 4983 | 4952 | 4922 | 4891 | 4861 | 4831 | 4801 | 4769 | 4737 | 4707 | 4675 | 4644 | 4612 | 4581 | 4548 | 4516 | 4484 | 4451 | 4419 | 4385 | 4352 | 4318 |
| Interest Expenses | 60 | 34 | 1116 | 1747 | 1542 | 1342 | 1145 | 951 | 758 | 572 | 387 | 206 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Expenses | 96 | 96 | 96 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Total Payments from Operations | 9742 | 10304 | 11621 | 12431 | 12201 | 12583 | 12355 | 12160 | 11969 | 11784 | 11599 | 11418 | 11267 | 11215 | 11215 | 11216 | 11216 | 11219 | 11218 | 11219 | 11219 | 11221 | 11221 | 11222 | 11223 | 11223 | 11224 | 11224 | 11225 | 11226 |
| Net Cash from Operations | 13463 | 29632 | 46076 | 28705 | 9191 | 8772 | 8854 | 8960 | 9217 | 9512 | 9816 | 10113 | 10428 | 10638 | 10828 | 10990 | 11107 | 11251 | 11424 | 11613 | 11771 | 11941 | 12102 | 12276 | 12433 | 12593 | 12750 | 12891 | 13047 | 13202 |
| Cashflow from Capital Activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Receipts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proceeds from Disposal of Assets | 0 | 0 | 77 | 82 | 125 | 63 | 233 | 66 | 167 | 113 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Payments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acquisition of Assets | 7390 | 30390 | 71940 | 46040 | 8140 | 15890 | 23690 | 13690 | 3690 | 3690 | 3690 | 3690 | 3690 | 3690 | 3690 | 5190 | 11190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 |
| Net Cash from Capital Activities | -7390 | -30390 | -71863 | -45958 | -8015 | -15827 | -23457 | -13624 | -3523 | -3577 | -3574 | -3690 | -3690 | -3690 | -3690 | -5190 | -11190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 | -3190 |
| CashFlow from Financing Activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Receipts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| New Loans Required | 495 | 200 | 32000 | 22000 | 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 |
| Payments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Principal Loan Payments | 607 | 274 | 2783 | 4685 | 4732 | 4779 | 4827 | 4877 | 4925 | 4974 | 4978 | 5008 | 2049 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Cash from Financing Activities | -112 | -74 | 29217 | 17316 | -4732 | -4779 | -4827 | -4877 | -4925 | -4974 | -4978 | -5008 | -2049 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL NET CASH | 5961 | -832 | 3430 | 62 | -3556 | -11834 | -19430 | -9541 | 768 | 961 | 1264 | 1415 | 4688 | 6948 | 7137 | 5800 | -84 | 8061 | 8234 | 8423 | 8581 | 8751 | 8912 | 9086 | 9243 | 9403 | 9560 | 9701 | 9857 | 10012 |
| Current Year Cash | 5961 | -832 | 3430 | 62 | -3556 | -11834 | -19430 | -9541 | 768 | 961 | 1264 | 1415 | 4688 | 6948 | 7137 | 5800 | -84 | 8061 | 8234 | 8423 | 8581 | 8751 | 8912 | 9086 | 9243 | 9403 | 9560 | 9701 | 9857 | 10012 |
| Cash & Investments @Year Start | 44157 | 48896 | 46891 | 49094 | 47957 | 43319 | 30717 | 11011 | 1435 | 2149 | 3034 | 4193 | 5471 | 9911 | 16448 | 23010 | 28108 | 27341 | 34538 | 41729 | 48928 | 56107 | 63276 | 70427 | 77574 | 84700 | 91807 | 98895 | 105947 | 112980 |
| Cash & Investments @Year End | 50118 | 48063 | 50321 | 49156 | 44402 | 31485 | 11287 | 1471 | 2203 | 3110 | 4298 | 5608 | 10159 | 16859 | 23586 | 28810 | 28024 | 35402 | 42772 | 50152 | 57509 | 64858 | 72188 | 79514 | 86817 | 94103 | 101367 | 108596 | 115804 | 122992 |
| Capital Works Funding: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Funding for New Works ($'000) | 2245 | 9040 | 440 | 640 | 3740 | 4390 | 6390 | 3390 | 390 | 390 | 390 | 390 | 390 | 390 | 390 | 1140 | 4140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| Internal Funding for Renewals | 2150 | 2250 | 2900 | 3600 | 4400 | 11500 | 17300 | 10300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 4050 | 7050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 | 3050 |
| New Loans | 495 | 200 | 32000 | 22000 | 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 |
| Grants | 2500 | 18900 | 36600 | 19800 | 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 Works | 7390 | 30390 | 71940 | 46040 | 8140 | 15890 | 23690 | 13690 | 3690 | 3690 | 3690 | 3690 | 3690 | 3690 | 3690 | 5190 | 11190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 | 3190 |

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## Statement of Financial Position

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash & Investments | 50118 | 48063 | 50321 | 49156 | 44402 | 31485 | 11287 | 1471 | 2203 | 3110 | 4298 | 5608 | 10159 | 16859 | 23586 | 28810 | 28024 | 35402 | 42772 | 50152 | 57509 | 64858 | 72188 | 79514 | 86817 | 94103 | 101367 | 108596 | 115804 | 122992 |
| Receivables | 4486 | 4508 | 4531 | 4582 | 4605 | 4628 | 4651 | 4674 | 4697 | 4720 | 4744 | 4768 | 4791 | 4815 | 4839 | 4864 | 4888 | 4913 | 4937 | 4962 | 4987 | 5011 | 5037 | 5062 | 5087 | 5112 | 5138 | 5164 | 5190 | 5215 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Property, Plant & Equipment | 204754 | 228372 | 292473 | 330061 | 329653 | 336996 | 351876 | 356894 | 351824 | 346801 | 341767 | 336842 | 331906 | 326959 | 321999 | 318518 | 320973 | 315419 | 309859 | 304293 | 298718 | 293136 | 287547 | 281950 | 276347 | 270737 | 265120 | 259495 | 253863 | 248224 |
| System Assets (1) | 204460 | 228129 | 292356 | 330071 | 329828 | 337269 | 352414 | 357505 | 352586 | 347658 | 342719 | 337770 | 332811 | 327842 | 322861 | 319359 | 321793 | 316220 | 310640 | 305055 | 299461 | 293861 | 288254 | 282640 | 277020 | 271394 | 265761 | 260120 | 254473 | 248819 |
| Plant & Equipment | 294 | 243 | 117 | -9 | -175 | -273 | -538 | -611 | -762 | -857 | -951 | -928 | -906 | -884 | -862 | -841 | -820 | -800 | -781 | -762 | -743 | -725 | -707 | -690 | -673 | -657 | -641 | -625 | -610 | -595 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| TOTAL ASSETS | 259358 | 280943 | 347325 | 383799 | 378659 | 373108 | 367814 | 363039 | 358724 | 354631 | 350810 | 347218 | 346856 | 348633 | 350424 | 352192 | 353885 | 355734 | 357569 | 359406 | 361214 | 363005 | 364771 | 366526 | 368251 | 369952 | 371625 | 373254 | 374857 | 376432 |
| 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 | 0 | 0 | 0 | 0 | 0 |
| Creditors | 221 | 222 | 224 | 227 | 227 | 229 | 230 | 231 | 232 | 234 | 235 | 236 | 237 | 239 | 240 | 241 | 243 | 244 | 245 | 246 | 248 | 249 | 250 | 252 | 253 | 254 | 255 | 257 | 258 | 259 |
| Borrowings | 672 | 581 | 29784 | 46373 | 40510 | 34743 | 29069 | 23483 | 17985 | 12572 | 7288 | 2102 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 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 | 0 | 0 | 0 | 0 | 0 |
| TOTAL LIABILITIES | 893 | 804 | 30008 | 46600 | 40738 | 34972 | 29299 | 23714 | 18217 | 12806 | 7523 | 2338 | 239 | 240 | 241 | 242 | 244 | 245 | 246 | 248 | 249 | 250 | 252 | 253 | 254 | 255 | 256 | 258 | 259 | 260 |
| NET ASSETS COMMITTED | 258465 | 280140 | 317317 | 337200 | 337921 | 338136 | 338514 | 339324 | 340506 | 341825 | 343287 | 344880 | 346617 | 348393 | 350183 | 351950 | 353641 | 355489 | 357322 | 359159 | 360965 | 362755 | 364520 | 366273 | 367998 | 369697 | 371369 | 372997 | 374598 | 376171 |
| EQUITY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accumulated Operating Result | 179652 | 198261 | 231872 | 246708 | 241586 | 236106 | 230746 | 225589 | 220826 | 216464 | 212504 | 208928 | 205743 | 202837 | 200181 | 197731 | 195395 | 193254 | 191332 | 189639 | 188140 | 186841 | 185729 | 184812 | 184069 | 183498 | 183091 | 182830 | 182725 | 182772 |
| Asset Revaluation Reserve | 78813 | 83925 | 89771 | 97450 | 106336 | 115438 | 124978 | 135195 | 145819 | 156559 | 167413 | 178381 | 189461 | 200651 | 211949 | 223354 | 234917 | 246859 | 258889 | 271002 | 283194 | 295462 | 307801 | 320207 | 332676 | 345203 | 357782 | 370407 | 383074 | 395775 |
| TOTAL EQUITY | 258465 | 280140 | 317317 | 337200 | 337921 | 338136 | 338514 | 339324 | 340506 | 341825 | 343287 | 344880 | 346617 | 348393 | 350183 | 351950 | 353641 | 355489 | 357322 | 359159 | 360965 | 362755 | 364520 | 366273 | 367998 | 369697 | 371369 | 372997 | 374598 | 376171 |
| (1) Notes to System Assets | 385147 | 413628 | 483008 | 525788 | 529867 | 534597 | 541327 | 545057 | 545787 | 546517 | 547247 | 547977 | 548707 | 549438 | 550167 | 551647 | 556127 | 556607 | 557087 | 557567 | 558047 | 558527 | 559007 | 559487 | 559967 | 560447 | 560927 | 561407 | 561887 | 562367 |
| Current Replacement Cost | 180687 | 185500 | 190652 | 195717 | 200039 | 197328 | 188913 | 187552 | 193200 | 198859 | 204528 | 210206 | 215896 | 221596 | 227306 | 232288 | 234334 | 240387 | 246446 | 252512 | 258586 | 264666 | 270753 | 276846 | 282946 | 289052 | 295166 | 301287 | 307414 | 313548 |
| Less: Accumulated Depreciation | 204460 | 228129 | 292356 | 330071 | 329828 | 337269 | 352414 | 357505 | 352586 | 347658 | 342719 | 337770 | 332811 | 327842 | 322861 | 319359 | 321793 | 316220 | 310640 | 305055 | 299461 | 293861 | 288254 | 282640 | 277020 | 271394 | 265761 | 260120 | 254473 | 248819 |
| Written Down Current Cost | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 |

# Water 2022 : Case 3 - IWCM review base case

## Performance Indicators

| | 2021/22 | 2022/23 | 2023/24 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Typical Residential Bills (2021/22$) | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 | 796 |
| Average Residential Bills (2021/22$) | 758 | 759 | 759 | 760 | 760 | 760 | 761 | 761 | 761 | 761 | 762 | 762 | 763 | 763 | 763 | 764 | 764 | 765 | 765 | 765 | 766 | 766 | 766 | 767 | 768 | 768 | 768 | 769 | 769 | 769 |
| Mgmnt Cost / Assessment (2021/22$) | 268 | 268 | 268 | 268 | 268 | 269 | 268 | 268 | 268 | 268 | 269 | 268 | 268 | 268 | 268 | 269 | 268 | 268 | 269 | 268 | 269 | 269 | 268 | 269 | 268 | 269 | 268 | 269 | 268 | 268 |
| OMA Cost per Assessment (2021/22$) | 434 | 459 | 466 | 468 | 466 | 490 | 485 | 483 | 481 | 478 | 476 | 473 | 471 | 469 | 466 | 464 | 462 | 459 | 457 | 455 | 453 | 451 | 448 | 446 | 444 | 442 | 439 | 437 | 435 | 433 |
| Operating Sales Margin (%) | 18.72 | 15.07 | 9.45 | 6.79 | 7.04 | 4.39 | 4.51 | 4.8 | 5.35 | 5.74 | 6.17 | 6.58 | 7.07 | 7.42 | 7.88 | 8.24 | 8.43 | 8.81 | 9.22 | 9.71 | 10.08 | 10.51 | 10.91 | 11.37 | 11.78 | 12.19 | 12.6 | 12.96 | 13.38 | 13.8 |
| Economic Real Rate of Return (%) | 1.99 | 1.49 | 0.78 | 0.53 | 0.55 | 0.37 | 0.36 | 0.38 | 0.42 | 0.45 | 0.49 | 0.52 | 0.56 | 0.6 | 0.64 | 0.67 | 0.68 | 0.73 | 0.77 | 0.83 | 0.87 | 0.93 | 0.98 | 1.04 | 1.1 | 1.16 | 1.23 | 1.29 | 1.37 | 1.44 |
| Debt Service Ratio | 0.03 | 0.01 | 0.18 | 0.3 | 0.29 | 0.29 | 0.28 | 0.28 | 0.27 | 0.26 | 0.25 | 0.24 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Debt/Equity Ratio | 0 | 0 | 0.09 | 0.14 | 0.12 | 0.1 | 0.09 | 0.07 | 0.05 | 0.04 | 0.02 | 0.01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest Cover | 79.78 | 120.8 | 2.65 | 1.4 | 1.58 | 1.31 | 1.35 | 1.5 | 1.98 | 2.79 | 4.41 | 8.81 | 36.69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Return on capital (%) | 1.85 | 1.63 | 1.36 | 1 | 0.64 | 0.47 | 0.42 | 0.39 | 0.42 | 0.45 | 0.49 | 0.52 | 0.57 | 0.61 | 0.65 | 0.69 | 0.7 | 0.74 | 0.78 | 0.83 | 0.87 | 0.91 | 0.94 | 0.99 | 1.02 | 1.06 | 1.09 | 1.13 | 1.16 | 1.2 |
| Cash and Investments (2021/22$'000) | 50118 | 48063 | 50321 | 49156 | 44402 | 31485 | 11287 | 1471 | 2203 | 3110 | 4298 | 5608 | 10159 | 16859 | 23586 | 28810 | 28024 | 35402 | 42772 | 50152 | 57509 | 64858 | 72188 | 79514 | 86817 | 94103 | 101367 | 108596 | 115804 | 122992 |
| Debt outstanding (2021/22$'000) | 672 | 581 | 29784 | 46373 | 40510 | 34743 | 29069 | 23483 | 17985 | 12572 | 7288 | 2102 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Net Debt (2021/22$'000) | 0 | 0 | 0 | 0 | 0 | 3258 | 17782 | 22012 | 15782 | 9462 | 2990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |