

29 May 2020

**ASSET MANAGEMENT PLAN
WATER SUPPLY NETWORK
2019/20 to 2048/49**

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| Table of Contents | |
| Executive summary | 2 |
| 1 Introduction and strategic objectives | 6 |
| 1.1 Introduction | 6 |
| 1.2 Strategic objective for the water supply network | 6 |
| 1.3 Definitions | 7 |
| 2 Services provided and classification | 8 |
| 2.1 Water supply network: categories and value | 8 |
| 2.2 Overview of the water supply network | 8 |
| 2.3 Managing future demand for the Shire’s water supply network | 11 |
| 3 Levels of service | 13 |
| 4 Condition of our assets | 16 |
| 5 Operations | 18 |
| 5.1 Lifecycle costs | 18 |
| 5.2 Operational activities | 18 |
| 6 Maintenance | 19 |
| 7 Capital renewal / rehabilitation | 20 |
| 8 Capital expansion – upgrades and new assets | 23 |
| 9 Disposal plan | 24 |
| 10 Financial plan | 25 |
| 10.1 Water supply network asset lifecycle expenditure | 25 |
| 10.2 Funding plan for the water supply network | 28 |
| 10.2.1 Managing the water supply fund | 28 |
| 10.2.2 User charges | 28 |
| 10.2.3 Grants | 29 |
| 10.2.4 Borrowings | 29 |
| 10.3 Summary of expenditure and funding sources | 30 |
| 11 Key performance benchmarks | 32 |
| 12 Risk management plan | 33 |
| 12.1 Critical risks | 33 |
| 12.2 Critical assets | 34 |
| 13 Asset management improvement program | 35 |

Executive summary

Warren Shire Council provides a water supply network for the communities of Warren, Nevertire and Collie.

Council provides a dual water supply of both potable water, which is drinkable, and non-potable water, which is not of drinking quality but can be used for many other purposes including washing, showering and on gardens. Potable water is provided in Warren and Nevertire and non-potable water is provided in Warren and Collie.

Water was first supplied to Warren in the 1890s and much of the existing infrastructure was installed between the 1960s and the 1990s. Today, the water supply network is comprised of a series of bores, mains, reservoirs and pumping stations.

Although the towns of Warren, Nevertire and Collie have each experienced a steady decline in their populations, new bores have been installed in each of these towns over the past two years. This will secure the water supply in each town well into the foreseeable future.

The estimated gross replacement cost of the water supply network across Warren, Nevertire and Collie is \$17.3m.

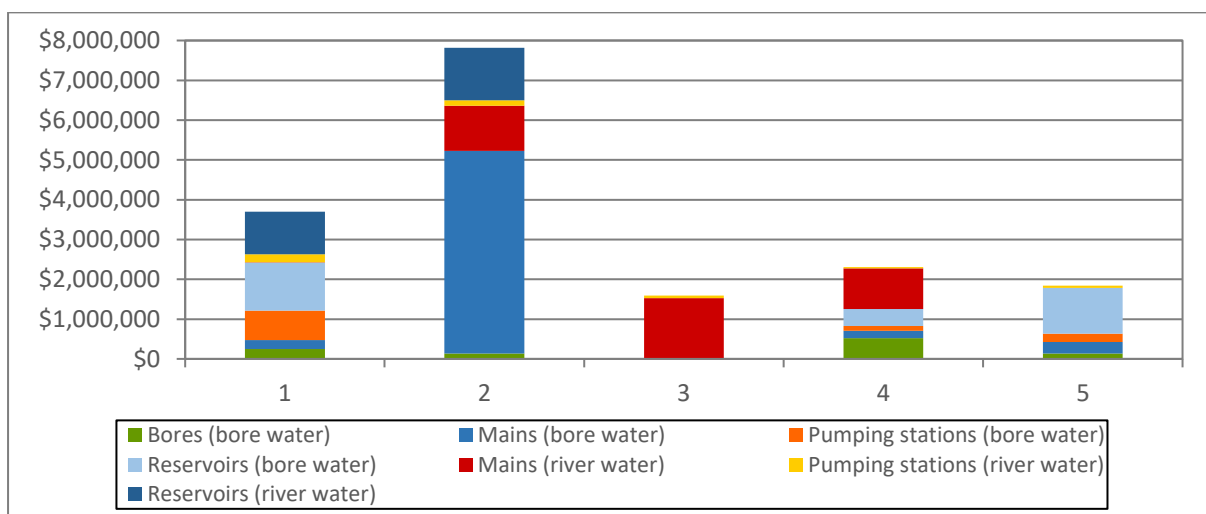
Council’s strategic objective for the water supply network is to provide Warren, Nevertire and Collie with an adequate and safe water supply that is appropriately priced for all consumers.

Council plans to install new water treatment plants in Warren, Nevertire and Collie. These will ensure that the quality of the water sourced from each town and village bore meets the Australian Drinking Water Guidelines. The water treatment plant in Collie will provide that village with potable water for the first time. These projects will lead to improved health outcomes for the residents of each of our communities.

The community has certain expectations as to the level of service it requires from the water supply network. These expectations fall into the categories of water access, water quality, availability of supply, supply interruptions, price and customer complaints management. This asset management plan outlines how Council delivers against these expectations and how we measure our performance.

Overall, most of our water supply network assets are in an acceptable condition, i.e., they have a condition rating between 1 and 3 on a scale of 1 to 5. See figure ES1 below.

Figure ES1: Condition ratings, water supply network (estimated gross replacement cost) as at 30 June 2019



Condition scale: 1=Excellent; 2=Good; 3=Average; 4=Poor; 5=Very poor

However, some assets are in condition 4 and 5. These are providing a poor level of service and will need to be renewed in the short- to medium-term. These assets include:

- The 0.9 ML bore water reservoir at Stafford Street in Warren which was constructed in 1939 and needs to be replaced
- The two overhead bore water tanks in Collie which will be replaced with larger reservoirs and a pump to pressurise the water mains
- Mains in Collie which need to be replaced
- The old bores in Warren and Nevertire which need to be refurbished
- The 0.6 ML bore water reservoir in Nevertire which is in condition 4
- Sections of the river water mains in Warren that are in condition 4
- The river pump in Oxley Park, Warren, which needs to be replaced.

In this asset management plan, the lifecycle costs of the water supply network are estimated and projected. There are four lifecycle categories. These categories are operations, maintenance, capital renewal and capital expansion.

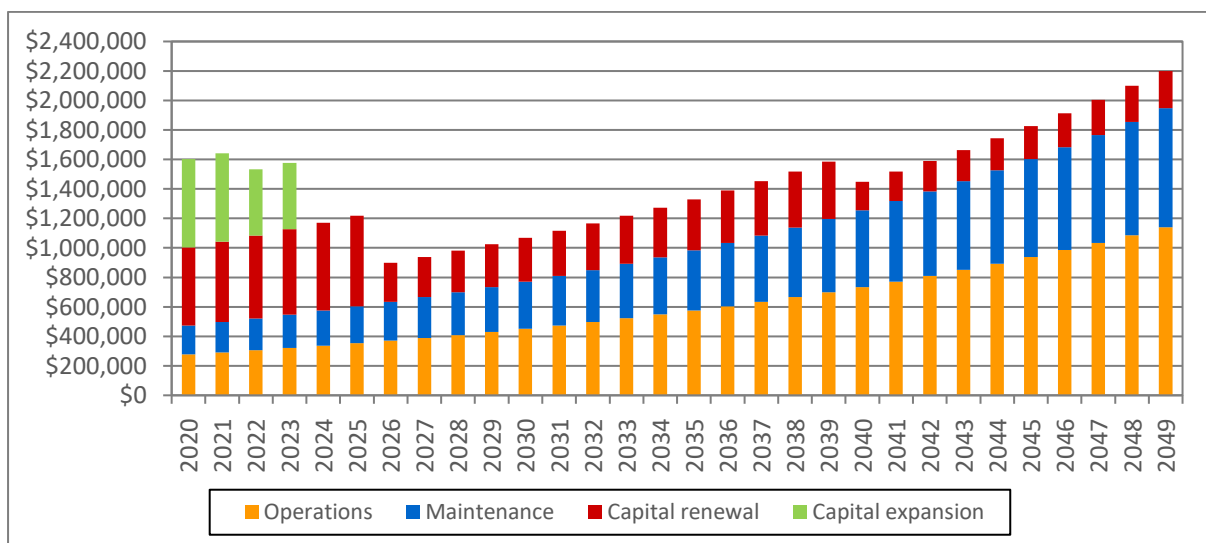
A summary of the operational and maintenance activities which are undertaken is provided together with the frequency in which these activities are undertaken.

An analysis of the capital renewal funding needs over the next thirty years has been undertaken. Council will be allocating funds to an asset renewal reserve each year to ensure that it is saving money from the day it purchases an asset to allow it to replace the asset at the end of its life.

Funds also need to be allocated to the net cost of the proposed capital expansion projects that Council will be undertaking over the next thirty years (i.e. the costs over and above the grant funding that Council will receive for these projects). The capital expansion projects that are currently planned over the next thirty years include the new water treatment plants in each community and new water tanks, and mains to these tanks, at Warren airport to support industrial business needs and firefighting. These projects will cost approximately \$2.1m and will be undertaken from the 2020 financial year to the 2023 financial year.

The projected lifecycle expenditure on operations, maintenance, renewal and expansion activities for the water supply network over the next thirty years is shown in the following graph.

Figure ES2: Thirty-year projected lifecycle expenditure on the water supply network, 2020 to 2049



Our annual operations and maintenance costs are not expected to fluctuate significantly over the next thirty years as our water supply network is not expected to grow due to our relatively stable populations in Warren, Nevertire and Collie. However, these costs have been indexed by 5.0% p.a. for inflation.

Our water supply assets have long estimated useful lives. Most of the water supply network will not need to be renewed over the next thirty years. However, the projected lifecycle expenditure includes funds to be allocated to an asset renewal reserve each year to ensure that assets can be replaced when they reach the end of their life. This asset renewal reserve allocation has been indexed by 3.0% p.a. for inflation.

Estimates for capital expansion projects for the water supply network have also been included in the thirty-year expenditure analysis.

Council's aim is to operate the water supply network on a full cost recovery basis with no significant cross-subsidies from non-water Council revenues. In other words, it is run as an independent business. As such, the primary source of funding to support the water supply network is from user charges.

The payments made by the residents of Warren, Nevertire and Collie are held in a water supply fund which is used to support the costs of maintaining the water supply network. Council manages the inflow of funds into the water supply fund through its water pricing policies.

Two types of water charges are applied to customers. The first is a water usage charge. The second is a water access charge. For the town of Warren, where residents have access to a dual water supply, there is a two-tier water tariff, one for potable water and one for non-potable water.

Based on the size of our communities, our water services are not sustainable. We are highly reliant on grant funding.

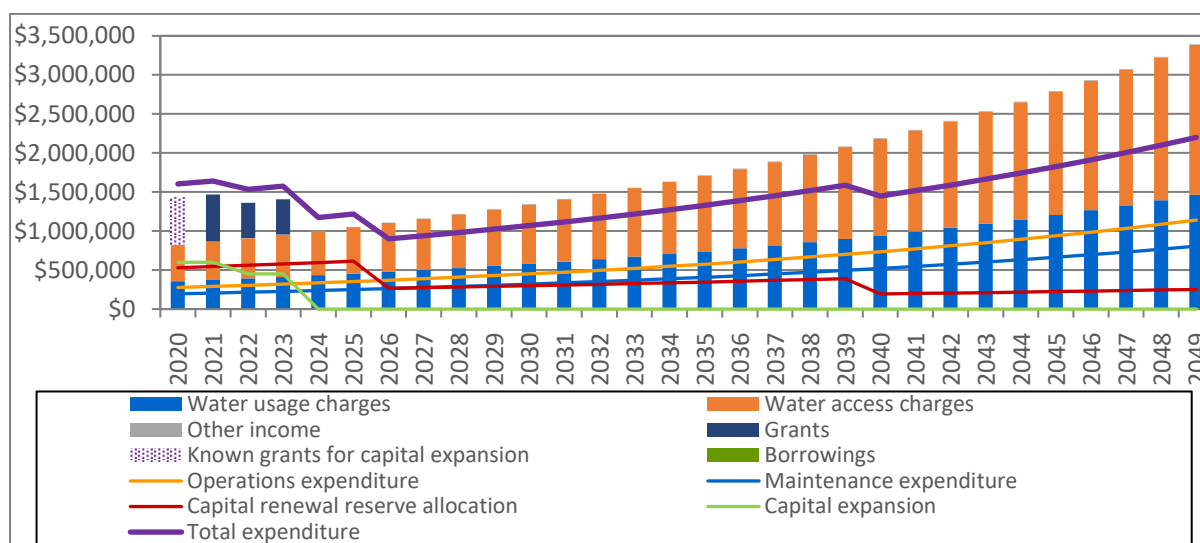
Council applies for grant funding when major projects are to be undertaken. This might be when significant renewal is required or when new infrastructure is to be installed.

Council will be allocating funds to an asset renewal reserve each year to help in reducing its reliance on grant funding for renewal projects. However, grants will be needed for significant renewal work and to support Council's planned capital expansion projects. These expansion projects include the new water treatment plants in Warren, Nevertire and Collie and the new water tanks, and mains to these tanks, at Warren airport.

Council also has the option of borrowing to support investments in new water infrastructure.

The projected expenditure and funding picture for the water supply network over the next thirty years is shown in figure ES3 below.

Figure ES3: Thirty-year financial plan for the water supply network, 2020 to 2049



This graph highlights the gap in the required funding for the water supply business in the short- to medium-term.

Between 2020 and 2025, it is anticipated that there will be a shortfall, i.e. total income will be less than our operations, maintenance and capital expenses. This is shown in figure ES3 as the gap between the purple total expenditure line and the top of the income bars. This shortfall will be carefully monitored over this period. From 2026, it is anticipated that there will be a surplus. This surplus will increase over time as income increases with a slightly higher indexation rate of 5.0% p.a. compared with the asset renewal reserve allocation which is indexed at 3.0% p.a.. Operations and maintenance expenses are indexed at 5.0% p.a..

Council has developed a series of performance benchmarks to help in assessing how well it is meeting the community’s expectations in relation to the condition of its assets.

Critical risks have been identified for the water supply network. These include the risk that the electricity supply for our bores is cut and that our reservoirs become contaminated. Risk treatment plans have been developed to reduce the likelihood of these risks and to limit their impact.

Several initiatives have been identified to improve Council’s asset management capabilities in relation to its water supply network. These include:

- Implementing an integrated asset management system and associated processes to support Council’s engineering and finance functions; this will also provide Council with much needed predictive capabilities to assist with decisions on where it should be allocating asset funding or if it should be seeking additional funding
- Regularly capturing accurate and complete asset condition data
- Tracking Council’s performance against relevant community expectation benchmarks
- Reporting on water breaks and water quality to Council every six months
- Implementing a productivity improvement program.

1 Introduction and strategic objectives

1.1 Introduction

Warren Shire is located in Central West NSW and covers an area of 10,860 square kilometres. Within the Shire is the town of Warren and the villages of Nevertire and Collie. According to the 2016 census, the total population for the Shire is 2,732 with 1,530 people living in Warren. In 2019 it is estimated that 92 people live in Nevertire and 46 people live in Collie.

The town of Warren is situated on the banks of the Macquarie River and is located 120 km from the regional centre of Dubbo and 515 km from Sydney. Nevertire is 20 km to the south west of Warren. Collie is located 51 km to the east of Warren.

Warren Shire Council owns and maintains \$247.0m (estimated gross replacement cost as at 30 June 2019) of community assets including roads, bridges, public buildings, the water supply network, the sewerage network and recreational assets. The water supply network comprises \$17.3m of this asset base. The water supply network is located in Warren, Nevertire and Collie.

The efficient management of our assets is vital to ensure that Council provides safe and reliable services for the community. To achieve this, Council has developed several integrated tools. These tools form the Integrated Planning and Reporting (IP&R) framework which includes Council's:

- Community strategic plan (CSP)
- Resourcing strategy
 - Long-term financial planning (LTFP)
 - Asset management planning
 - Asset management policy
 - Asset management strategy
 - Asset management plans (of which this is one).

Together, these tools guide Council and hold it to account with respect to delivering on its asset management strategic objectives.

Council has developed asset management plans for each class of asset under its control. This asset management plan for our water supply network identifies our asset service standards and contains the long-term projected costs for the operations, maintenance, renewal and expansion of our assets.

1.2 Strategic objective for the water supply network

The strategic objective of Council in operating, maintaining and improving its water supply network is as follows.

Table 1.1: Strategic objective for the water supply network

| No. | Strategic objective for the water supply network | Link with the CSP |
|-----|---|-------------------|
| 1 | Provide Warren and the villages of Nevertire and Collie with an adequate and safe water supply that is appropriately priced for all consumers | Strategy 4.3.2 |

1.3 Definitions

To ensure consistency between this document and the other documents in Council's IP&R framework, the following definitions are used.

Accumulated depreciation – The total depreciation of an asset's estimated replacement cost. Depreciation of an asset will continue to be accumulated until it is replaced. At this point, the original asset will be written off and the depreciation of the new asset will commence from zero.

Asset – A physical facility, which has value, and enables services to be provided to the community. The economic life of an asset is greater than twelve months.

Asset management – The combination of management, financial, economic and engineering practices applied to a physical asset with the objective of providing the required levels of service in the most cost-effective manner.

Estimated gross replacement cost – The estimated cost of replacing an asset calculated by multiplying estimated unit rates for each component of an asset by the size of the asset. Estimated gross replacement costs are calculated every five years when Council's assets are revalued.

Expansion – Activities associated with upgrading or improving an asset or creating a new asset.

Level of service – The ability of an asset to provide services to the community. A minimum level of service is set by Council for each asset. Community levels of service are based around the minimum required condition rating of an asset. Technical levels of service refer to the frequency in which maintenance and capital works are undertaken on an asset by Council.

Lifecycle – The phases in the life of an asset from acquisition, operations, maintenance, renewal and disposal.

Maintenance – Planned or unplanned activities required to ensure that the asset can continue to deliver the services required of it by the community.

Net carrying value – Estimated gross replacement cost minus accumulated depreciation. This is the equivalent of the written down value of an asset.

Operations – Regular, planned activities to keep the asset in service.

Renewal – Activities which involve restoring, refurbishing or replacing an asset to bring it back to its original capacity and performance capability. Renewal costs are treated as capital expenditure.

Renewal backlog – The cost to renew those assets within the Shire that do not achieve the required minimum level of service.

Useful life – The period over which an asset is expected to be available for use by Council (in the context of its service to Council, not to its actual physical life). The useful life of each asset is used by Council to determine the depreciation of the asset.

2 Services provided and classification

2.1 Water supply network: categories and value

The water supply network in the Warren Shire is comprised of both bore water and river water. The components of the water supply network are summarised in the following table.

Table 2.1: Council's water supply network (and value) as at 30 June 2019

| Water supply asset category | Net carrying value \$ | Estimated gross replacement cost \$ |
|--|--------------------------|--|
| Bore water (Warren, Nevertire and Collie) | | |
| Bores | 522,694 | 1,060,192 |
| Mains | 2,682,652 | 5,793,114 |
| Pumping stations | 891,243 | 1,061,626 |
| Reservoirs | 1,827,327 | 2,786,488 |
| Total bore water | 5,923,916 | 10,701,420 |
| River water (Warren) | | |
| Bores | - | - |
| Mains | 494,166 | 3,679,653 |
| Pumping stations | 297,299 | 484,633 |
| Reservoirs | 1,804,048 | 2,388,858 |
| Total river water | 2,595,513 | 6,553,144 |
| Total water supply network | 8,519,429 | 17,254,564 |
| Total all Council assets | 179,662,545 | 247,025,077 |
| Percent of all Council assets | 4.7% | 7.0% |

2.2 Overview of the water supply network

Warren

Bore water was first supplied to the town of Warren in the 1890s with the construction of reticulation in the first decade of the new century. Reservoirs were constructed in 1939 (0.9 ML for bore water at Stafford Street) and 1966 (2.1 ML for river water at Oxley Park).

Since 1970, the town of Warren has had a dual water supply. Bore water is used for potable uses and water is also drawn from the Macquarie River for non-potable use. Augmentation of the Warren system was carried out between 1998 and 2000 at Ellengerah Road with the construction of a new bore and a supporting 2.5 ML steel reservoir for potable water and a new 2.5 ML steel reservoir for river water.

The details and age profile of Warren's current water supply network infrastructure are provided in the following table.

Table 2.2: Warren’s water supply network infrastructure as at 30 June 2019

| Asset type | Location | Item | Size | Year built |
|----------------------------------|----------------------------|---|---------|--|
| Bore water (potable) | | | | |
| Bores | Bore Flat, Stafford Street | Bore 1, licence number 80BL003351 | - | 1898: Bore 1966: Infrastructure |
| | | Bore 1a, licence number 80WA703156 | - | 2016: Bore 2018: Infrastructure |
| | | <i>Bore 2, licence number 80BL130072 Decommissioned</i> | - | <i>1939: Bore 1966: Infrastructure</i> |
| | | <i>Bore 3, licence number 80BL134725 Decommissioned</i> | - | <i>1953: Bore 1953: Infrastructure</i> |
| | Ellengerah Road | Bore 6, licence number 80BL150680 | - | 1993: Bore 1998: Infrastructure |
| | | Bore 6a, licence number 80WA724066 | - | 2016: Bore 2018: Infrastructure |
| Mains | Throughout | | 37.8 km | 1967 |
| Reservoirs | Stafford Street | Concrete | 0.9 ML | 1939 |
| | Ellengerah Road | Steel reservoir | 2.5 ML | 2000 |
| River water (non-potable) | | | | |
| Mains | Throughout | | 18.4 km | 1940 |
| | | | 7.1 km | 1967 |
| | | | 0.1 km | 2016 |
| Pumping stations | Oxley Park | | - | 1966 |
| | Ellengerah Road | | - | 2000 |
| Reservoirs | Oxley Park | Steel reservoir | 2.1 ML | 1966 |
| | Ellengerah Road | Steel reservoir | 2.5 ML | 2000 |

New bores have been installed at both Bore Flat, Stafford Street (bore 1a) and Ellengerah Road (bore 6a) in 2018. The old bores (bores 1 and 6) will be refurbished and will remain available as a backup to the new bores. Bores 2 and 3 have been decommissioned.

Investigations will be undertaken into the possible replacement of the Stafford Street reservoir which dates back to 1939 and is in a very poor condition.

Council plans to install a water treatment plant at Ellengerah Road. This will ensure that the quality of the water sourced from the bores in Warren meets the Australian Drinking Water Guidelines. Water from each of the bores will be treated at the water treatment plant prior to being pumped into the reservoirs. The new water treatment plant will significantly improve the quality of the potable water in Warren which, in turn, will lead to improved health outcomes for the residents.

Nevertire

Nevertire has a potable bore water supply. The details and age profile of Nevertire’s current water supply network infrastructure are provided in the following table.

Table 2.3: Nevertire’s water supply network infrastructure as at 30 June 2019

| Asset type | Location | Item | Size | Year built |
|-------------------|------------------|-----------------------------------|--------|------------------------------------|
| Bore water | | | | |
| Bores | Belerenga Street | Bore 1, licence number 80BL236681 | - | 1966: Bore 1968: Infrastructure |
| | Belerenga Street | Bore 2, licence number 80WA703159 | - | 2016: Bore 2018: Infrastructure |
| Mains | Clyde Street | Trunk main | 0.7 km | 1983 |
| | Throughout | Water mains | 4.2 km | 1983 |
| Reservoirs | Belerenga Street | Reservoir | 0.6 ML | 1983 |

A new bore (bore 2) has been installed at Belerenga Street. The old bore (bore 1) will be refurbished and will remain available as a backup to the new bore.

As with Warren, Council also plans to install a water treatment plant in Nevertire. This will lead to a significant improvement in the quality of the water sourced from the Nevertire bores and will ensure that the quality of the water meets the Australian Drinking Water Guidelines. It will also lead to improved health outcomes for the residents. After treatment, the water will be pumped into the Belerenga Street reservoir.

Collie

Whilst the Collie water supply is drawn from bores, this water is not potable. The details and age profile of Collie’s current water supply network infrastructure are provided in the following table.

Table 2.4: Collie’s water supply network infrastructure as at 30 June 2019

| Asset type | Location | Item | Size | Year built |
|-------------------|----------------|---|-----------|--|
| Bore water | | | | |
| Bores | Oxley Highway | <i>Old bore, licence number 80BL236528 Decommissioned</i> | - | <i>1966: Bore 1968: Infrastructure</i> |
| | | New bore, licence number 80CA724011 | - | 2016: Bore 2018: Infrastructure |
| Mains | West of Collie | <i>50mm trunk main from old bore Decommissioned</i> | 7.8 km | 1983 |
| | | 100mm trunk main from new bore | 8 km | 2018 |
| | Throughout | Water mains | 1.9 km | 1983 |
| Reservoirs | Oxley Highway | Overhead tank 1 | 30,000 L | 1996 |
| | Oxley Highway | Overhead tank 2 | 15,000 L | 1996 |
| | Oxley Highway | New reservoir 1 (non-potable) | 200,000 L | 2019 |
| | Oxley Highway | New reservoir 2 (potable) | 100,000 L | 2019 |

A new bore has been installed on the Oxley Highway, 8km west of Collie. This replaces the old leased bore which has been shut down. The trunk main from the old bore has also been decommissioned.

Council plans to install a water treatment plant in Collie. This will provide Collie with potable water for the first time. The water treatment plant in Collie will ensure that the quality of the water sourced from the Collie bore meets the Australian Drinking Water Guidelines which, in turn, will lead to improved health outcomes for the residents.

To support this water treatment plant, two new reservoirs are currently being installed at Collie. The first new reservoir will be a 0.2 ML reservoir. This will hold non-potable water that has been pumped from the new bore. Following treatment, the potable water will be stored in the second new 0.1 ML reservoir.

The two small overhead tanks at Collie will be decommissioned.

Quality of the potable water

The potable water supply for Warren is sourced from high quality bores. Whilst this water supply is unfiltered, it is chlorinated at each bore with chlorine gas. Fluoride does not need to be added as it occurs naturally. A water treatment plant is required in Warren to reduce the salinity of the potable water drawn from the bores there.

In Nevertire, the potable water is also disinfected with chlorine gas. A water treatment plant is also required in Nevertire to reduce the salinity of the water supply.

Collie does not currently have a potable water supply. A water treatment plant is needed to provide Collie with potable water for the first time. Collie's non-potable water is currently disinfected with sodium hypochlorite and can be used for washing, showering and on gardens.

The new water treatment plants in our communities will significantly improve the quality of our water supply and ensure that water quality meets the Australian Drinking Water Guidelines.

2.3 Managing future demand for the Shire's water supply network

2.3.1 Drivers of demand for the water supply network

A flat or declining demographic trend

The main driver affecting the demand for our water supply network would be any change in the population of Warren and the two villages of Nevertire and Collie. As is the case with the majority of rural inland local government areas, the population of the Warren Shire has been declining steadily for several years as a result of outward migration from the Shire (especially amongst young adults). Over the long-term, this flat to declining population is likely to result in little change in the demand on our water supply network.

2.3.2 Factors affecting the supply of the water supply network

Funding uncertainties

Warren Shire Council is highly reliant on grant funding and its water charges revenues are limited.

Based on the size of our communities, our water services are not sustainable. We need to seek ongoing government funding, where available, to maintain and enhance our water supply network.

Council's asset renewal backlog

Assets that are below the minimum condition rating do not meet Council's minimum levels of service. Such assets will require renewal. These assets form part of Council's renewal backlog and Council should be ensuring that these assets are brought up to the agreed levels of service.

Council's asset renewal backlog will need to be funded.

Staff and resource shortages

As with financial constraints on the provision of the water supply network, difficulties in recruiting and retaining staff has been a challenge for Council in recent years. Council, as a western rural Council, often faces challenges in filling technical and managerial positions. When technical or managerial positions are vacant it can affect Council's ability to provide some of the services expected by the community.

3 Levels of service

The strategic objective for our water supply network is to provide an adequate and safe water supply to Warren, Nevertire and Collie that is appropriately priced for all customers.

Council has defined a set of measurable levels of service that are used to assess its performance in meeting this objective. Levels of service are grouped into:

- **Community levels of service** – These relate to what the community wants from our water supply network in terms of water access, water quality, availability of supply, supply interruptions, price and customer complaints management
- **Technical levels of service** – These refer to how the services will be delivered to the community.

Table 3.1 outlines what the community desires from our water supply network and how Council will deliver against this. Key performance benchmarks are also provided. These benchmarks will enable us to determine whether we are delivering on what the community wants.

Table 3.1: Community expectations, water supply network

| The community wants (Community level of service) | How Council delivers this (Technical level of service) | Key performance benchmark |
|--|--|---|
| Water access <i>Potable bore water</i> All residential, commercial and industrial areas are provided with potable water where economically viable | Council connects new services within 15 days of request | Achieved in 90% of new requests |
| <i>Non-potable river water</i> All residential, commercial and industrial areas are provided with non-potable water where economically viable | Council connects new services within 30 days of request | Achieved in 90% of new requests |
| Water quality <i>Potable bore water</i> Water quality meets the Australian Drinking Water Guidelines, as approved and endorsed by NSW Health | Water treatment plants are installed in Warren, Nevertire and Collie Water is regularly sampled: <ul style="list-style-type: none"> • Microbiological results remain within acceptable levels • Water chemistry is within acceptable levels | Water treatment plants are installed Frequency and results are maintained within the Australian Drinking Water Guidelines 100% of the time |

| The community wants (Community level of service) | How Council delivers this (Technical level of service) | Key performance benchmark |
|---|--|---|
| <p>Availability of supply <i>Potable and non-potable</i> Supply is in accordance with Council design standards</p> <p>Water is available for firefighting</p> | <p>The minimum rate measured by litres per second is maintained</p> <p>Council improves the mains and pumps in Collie so that Collie can come up to standard and satisfy this requirement</p> <p>Council ensures that all residential, commercial and industrial properties comply with the Building Code of Australia and Fire and Rescue NSW building fire safety guidelines</p> | <p>0.15 litres per second is maintained 90% of the time</p> <p>Water availability meets Fire and Rescue NSW requirements in Warren, Nevertire and Collie</p> <p>Achieved in 95% of new properties Achieve in 90% of existing properties</p> |
| <p>Supply interruptions <i>Potable and non-potable</i> Customers are provided with adequate notice of planned supply interruptions</p> <p><i>Potable bore water</i> Unplanned supply interruptions are minimised</p> <p><i>Non-potable river water</i> Unplanned supply interruptions are minimised</p> | <p>48 hours of notice is provided to residential and commercial customers</p> <p>7 days notice is provided to industrial customers</p> <p>Maximum duration is 8 hours Frequency is less than 80 times per year</p> <p>Maximum duration is 72 hours Frequency is less than 80 times per year</p> | <p>Achieved 95% of the time</p> <p>Achieved 95% of the time</p> <p>Achieved 95% of the time</p> |
| <p>Price <i>Potable and non-potable</i> Water access and usage charges remain affordable for all residents and businesses who have access to Council's water supply network</p> | <p>Undertake an annual review of the impact of water prices (particularly water usage prices) on Council's total water revenues</p> <p>Maintain water usage charges at between 40% and 50% of residential water revenue</p> | <p>< 10 price complaints per month</p> <p>Achieved 95% of the time when measured quarterly</p> |

| The community wants (Community level of service) | How Council delivers this (Technical level of service) | Key performance benchmark |
|---|---|------------------------------|
| Customer complaints <i>Potable and non-potable</i> Customer complaints are minimised and are handled promptly and satisfactorily | Fewer than 20 non-written complaints are received per month Fewer than 2 written complaints are received per month | Achieved 95% of the time |
| | | |

4 Condition of our assets

The condition of Council’s assets is currently assessed every five years. This asset condition information is then used to plan the timing of our maintenance and capital renewal activities.

The current condition of Council’s water supply network is provided in this section of this plan.

Assets are rated from condition 1 to condition 5, as shown in table 4.1 below.

Table 4.1: Condition ratings for assessing the condition of our assets

| Condition rating | Condition | Description |
|------------------|-----------|---------------------------------------|
| 1 | Excellent | No work required (normal maintenance) |
| 2 | Good | Only minor maintenance work required |
| 3 | Average | Maintenance work required |
| 4 | Poor | Renewal required |
| 5 | Very poor | Urgent renewal / upgrading required |
| | | |

The intent of Council is not to undertake renewal on an asset until it reaches its intervention level. The intervention level is the condition level below which renewal is required based on the community’s level of service expectations.

Typically, water supply network assets in condition 4 will provide a poor level of service and will need to be renewed in the short- to medium- term. Assets in condition 5 may require urgent and immediate renewal or replacement. Funding may be needed to support the required level of renewals each year. Council will be allocating funds to an asset renewal reserve each year to help in managing these funding needs. This is discussed further in section 7 of this plan.

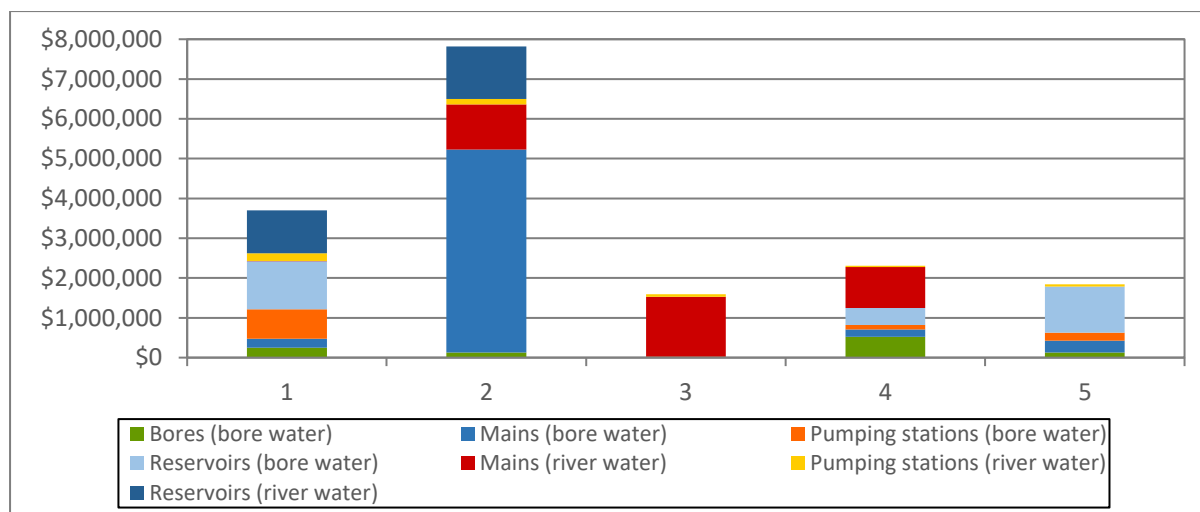
Independent valuers assessed the condition of our water supply network in 2017. The condition of bores, pumping stations and reservoirs were assessed through visible inspections. The condition of mains, which are underground and not visible, were assessed by calculating the proportion of each main’s expected useful life that has been consumed.

The condition of the mains was further assessed by reviewing whether there have been recent failures. If there have been few or no instances of failure, we consider that the main is still in a satisfactory condition and does not need renewal.

The current condition ratings of the assets in Council’s water supply network are summarised in the table and graph below.

Table 4.2: Condition ratings, water supply network (estimated gross replacement cost) as at 30 June 2019

| Water supply asset category | Condition rating \$ | | | | | Total \$ |
|--|---------------------|------------------|------------------|------------------|------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Bore water (Warren, Nevertire and Collie) | | | | | | |
| Bores | 251,035 | 132,364 | 22,925 | 521,503 | 132,364 | 1,060,192 |
| Mains | 226,155 | 5,092,032 | - | 184,539 | 290,388 | 5,793,114 |
| Pumping stations | 736,056 | - | - | 117,548 | 208,022 | 1,061,626 |
| Reservoirs | 1,208,498 | - | - | 425,956 | 1,152,034 | 2,786,488 |
| Total bore water | 2,421,744 | 5,224,396 | 22,925 | 1,249,547 | 1,782,808 | 10,701,420 |
| River water (Warren) | | | | | | |
| Bores | - | - | - | - | - | - |
| Mains | 8,571 | 1,138,098 | 1,504,600 | 1,028,383 | - | 3,679,653 |
| Pumping stations | 195,538 | 134,620 | 64,979 | 29,331 | 60,165 | 484,633 |
| Reservoirs | 1,070,489 | 1,318,370 | - | - | - | 2,388,858 |
| Total river water | 1,274,598 | 2,591,088 | 1,569,579 | 1,057,714 | 60,165 | 6,553,144 |
| Total water supply network | 3,696,342 | 7,815,484 | 1,592,504 | 2,307,261 | 1,842,974 | 17,254,564 |

Figure 4.1: Condition ratings, water supply network (estimated gross replacement cost) as at 30 June 2019

The table and graph above show that our water supply network assets are mostly in an acceptable condition, i.e., they have a condition rating between 1 and 3. However, some assets are in condition 4 and 5. These are providing a poor level of service and will need to be renewed in the short- to medium-term. These assets include:

- The 0.9 ML bore water reservoir at Stafford Street in Warren which was constructed in 1939 and needs to be replaced
- The two overhead bore water tanks in Collie which will be replaced with larger reservoirs and a pump to pressurise the water mains
- Mains in Collie which need to be replaced
- The old bores in Warren and Nevertire which need to be refurbished
- The 0.6 ML bore water reservoir in Nevertire which is in condition 4
- Sections of the river water mains in Warren that are in condition 4
- The river pump in Oxley Park, Warren, which needs to be replaced.

5 Operations

5.1 Lifecycle costs

Council allocates the costs associated with the provision of its assets into four lifecycle categories:

Table 5.1: Lifecycle cost allocation for the provision of asset services

| Activity | Description |
|-------------|--|
| Operations | Regular, planned activities to keep the asset in service |
| Maintenance | Planned or unplanned activities to ensure that the asset reaches its useful life |
| Renewal | The like-for-like replacement of an asset or asset component |
| Expansion | The upgrade or improvement of an asset The creation of a new asset |
| | |

Operations and maintenance costs are current-year expenditure. Renewal and expansion costs are treated as capital expenditure.

5.2 Operational activities

Operational activities are those regular activities that are required to continuously provide the service expected of the asset. For our water supply network, these activities include the following.

Table 5.2: Operational activities, water supply network

| Activity | Frequency |
|---|--|
| Undertaking hydrant and dead-end flushing | Some weekly, some monthly or as required |
| Taking daily residual chlorine readings | Daily |
| Inspecting infrastructure | Varies – as per set schedules |
| Responding to customer complaints | When received |
| | |

Projected operational expenditure for the next thirty years is provided in table 10.1.

6 Maintenance

Routine maintenance is the regular ongoing work that is necessary to keep assets operating to ensure they reach their useful life. It includes work on an asset where a portion may fail and needs immediate repair to make it operational again.

Council's maintenance activities for our water supply network include the following.

Table 6.1: Maintenance activities, water supply network

| Activity | Frequency |
|--|--|
| Undertaking bore maintenance | Every five years |
| Flushing mains | Monthly or as required |
| Maintaining pumping stations | Varies by component |
| Inspecting and cleaning water storage reservoirs | Inspections weekly Cleaning every two years |
| Detecting water leakage | As required |
| | |

In addition to planned maintenance, which is defined and scheduled over the medium-term, Council must also repair unforeseen damage caused by storms or accidents. This type of maintenance is referred to as either unplanned or reactive maintenance.

Council's unplanned maintenance work is often carried out because of issues identified through customer requests.

Projected maintenance expenditure for the next thirty years is provided in table 10.2.

7 Capital renewal / rehabilitation

Capital renewal activities involve restoring, refurbishing or replacing an asset to bring it back to its original capacity and performance capability.

Renewal costs are treated as capital expenditure.

The annual required renewal costs reflect the amount needed to be spent on assets that have deteriorated to a point at which renewal is required based on the community's level of service expectations.

Typically, water supply network assets in condition 4 will provide a poor level of service and will need to be renewed in the short-to medium-term and assets in condition 5 may require urgent and immediate renewal or replacement.

Assessing the condition of our assets is not easy and is based on broad assumptions and the quality of the currently available data. Work will continue to improve the quality of our asset registers and systems to increase the accuracy of our condition data.

The process of assessing the condition of our assets starts by estimating the expected remaining useful life of each asset. This is done using long-term averages and the age of the asset. Useful lives are based on industry standards and are then adjusted, where relevant, to align with local conditions (e.g. ground movements). The range of expected useful lives for our water supply asset components is shown below.

Table 7.1: Expected useful life of water supply asset components (years)

| Water supply asset category | Expected useful life (years) of asset components |
|--|--|
| Bore water (Warren, Nevertire and Collie) | |
| Bores | 20-50 |
| Mains | 80 |
| Reservoirs (includes overhead tanks) | 30-80 |
| River water (Warren only) | |
| Mains | 80 |
| Pumping stations | 20-60 |
| Reservoirs | 30-80 |
| | |

We supplement remaining useful life data with an assessment of each asset's actual condition. For bores, pumping stations and reservoirs, we do this through visible inspections. For mains, which are underground and not visible, we review whether there has been a history of failure. If there have been few or no instances of failure, we consider that the main is still in a satisfactory condition and does not need renewal.

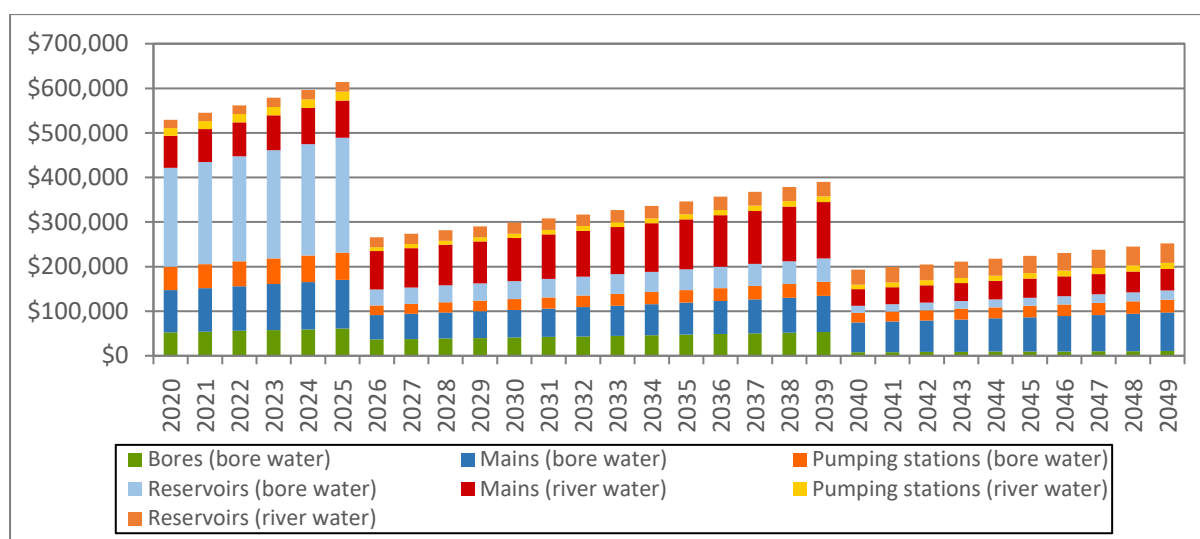
To manage the funding needs for renewing or replacing assets that are in condition 4 or 5 each year, Council will be allocating funds to an asset renewal reserve each year. This will ensure that we are saving money from the day we purchase an asset to allow us to replace the asset at the end of its life. The allocation will be made against each asset on a sliding scale basis. Assets that are in condition 1 will have a small asset renewal allocation and assets that are in condition 5 will have the highest asset renewal allocation as these assets need urgent renewal or replacement. The sliding scale for the allocation of funds to the asset renewal reserve is shown below.

Table 7.2: Allocation of funds to the asset renewal reserve each year, water supply network

| Useful life | Condition rating \$ | | | | |
|-------------|---------------------|--------|--------|--------|---------|
| | 1 | 2 | 3 | 4 | 5 |
| 80 | 0.625% | 0.694% | 0.833% | 5.000% | 16.667% |
| 60 | 0.833% | 0.926% | 1.111% | 5.000% | 16.667% |
| 50 | 1.000% | 1.111% | 1.333% | 5.000% | 16.667% |
| 40 | 1.250% | 1.389% | 1.667% | 5.000% | 16.667% |
| 30 | 1.667% | 1.852% | 2.222% | 5.000% | 16.667% |
| 20 | 2.500% | 2.778% | 3.333% | 5.000% | 16.667% |
| | | | | | |

Using this analysis, Council has identified an asset renewal allocation for each year over the next thirty years. This is summarised in the graph below. Detailed numbers are provided in table 10.3. The asset renewal reserve allocations are indexed by 3.0% p.a. for inflation.

Figure 7.1: Estimated annual required asset renewal reserve allocation for the water supply network, 2020 to 2049



Some of the specific capital renewal projects that will be undertaken include the following.

Table 7.3: Specific future capital renewal projects, water supply network

| No. | Asset | Comment | Estimated cost* \$ |
|-----|--|--|----------------------------|
| 1 | 0.9 ML reservoir at Stafford Street, Warren | Installed in 1939 and in very poor condition Location of replacement reservoir to be determined | 1,000,000 |
| 2 | Two overhead tanks in Collie | Two larger replacement reservoirs are being installed. One will be a 0.2 ML reservoir for non-potable water. One will be a 0.1 ML reservoir for potable water. | 30,000 |
| 3 | Mains in Collie | Need to be upgraded to 100mm PVC | 180,000 |
| 4 | Old bores at Stafford Street (bore 1) and Ellengerah Road (bore 6), Warren | To be refurbished and will remain available as a backup to the new bores | 30,000 each (two bores) |
| 5 | Old bore (bore 1) at Belerenga Street, Nevertire | To be refurbished and will remain available as a backup to the new bores | 30,000 |
| 6 | 0.6 ML reservoir in Nevertire | Is currently in poor condition (condition 4) and needs to be refurbished | 700,000 |
| 7 | Sections of the river water mains in Warren | Are currently in poor condition and need to be replaced | 1,000,000 |
| 8 | River pump pipework and supports in Oxley Park, Warren | Needs to be replaced | 150,000 |
| | Total | | 3,150,000 |

* Estimates need to be confirmed

8 Capital expansion – upgrades and new assets

Capital expansion can refer to either the upgrade of existing assets or the acquisition of new assets.

Upgrades are improvements of existing assets to provide a higher level of service.

New assets are assets that have been built to support growth, new social or environmental needs or to create additional service level capacity.

Council is not anticipating any significant changes in the populations of Warren, Nevertire or Collie. Therefore, there will be little change in the demand for our water supply assets. However, Council is planning to install new much needed water supply assets.

The estimated gross and net costs (i.e. costs net of grant funding) of these projects are summarised below.

Table 8.1: Future capital expansion projects, water supply network

| No. | Asset | Rationale | Estimated gross cost* \$ | Estimated grant funding \$ | Council contribution \$ |
|--------------|--|--|-----------------------------|-------------------------------|----------------------------|
| 1 | Water treatment plant – Warren | To ensure that water quality meets the Australian Drinking Water Guidelines | 900,000 | 900,000 ⁽¹⁾ | - |
| 2 | Water treatment plant – Nevertire | To ensure that water quality meets the Australian Drinking Water Guidelines | 300,000 | 300,000 ⁽¹⁾ | - |
| 3 | Water treatment plant - Collie | To provide potable water to Collie for the first time To ensure that water quality meets the Australian Drinking Water Guidelines | 300,000 | 300,000 ⁽¹⁾ | - |
| 4 | Water tanks, and mains to these tanks, at Warren airport | To provide water for the industrial companies at the airport and for firefighting | 600,000 | 600,000 ⁽²⁾ | - |
| Total | | | 2,100,000 | 2,100,000 | - |

* Estimates need to be confirmed

- (1) Grant funding will be used for these projects. Applications for this funding have not yet been made.
- (2) A \$600,000 grant from the Drought Communities Program will fund the installation of the new water tanks, and mains to these tanks, at Warren airport.

These water supply capital expansion projects will be undertaken from the 2020 financial year to the 2023 financial year.

The timing of this planned capital expansion expenditure is provided in table 10.4.

9 Disposal plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation.

Some water supply assets have recently been decommissioned including the old bore at Collie and the trunk main from this bore.

Other water supply assets that will be decommissioned are the two small overhead tanks at Collie. These are being replaced by two larger reservoirs.

Investigations will also be undertaken into the possible replacement of the Stafford Street reservoir which dates back to 1939 and is in a very poor condition.

10 Financial plan

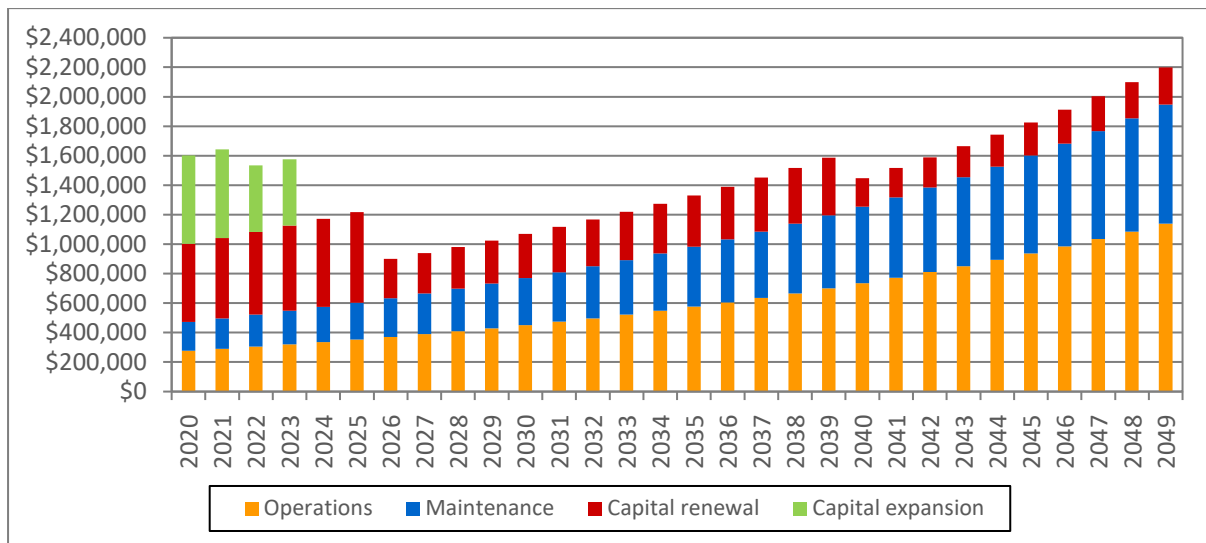
The financial plan for the water supply network considers the ability of the water supply business to remain financially viable and sustainable in the long-term.

The financial plan projects the lifecycle expenditure for the water supply network over the next thirty years and considers a funding plan to support these costs.

10.1 Water supply network asset lifecycle expenditure

The projected lifecycle expenditure on operations, maintenance, renewal and expansion activities for the water supply network over the next thirty years is shown in the following graph.

Figure 10.1: Thirty-year projected lifecycle expenditure on the water supply network, 2020 to 2049



This graph shows where our funds will be allocated to our water supply network over the next thirty years.

Our annual operations and maintenance costs are not expected to fluctuate significantly over the next thirty years as our water supply network is not expected to grow due to our relatively stable populations in Warren, Nevertire and Collie. However, these costs have been indexed by 5.0% p.a. for inflation.

Our water supply assets have long estimated useful lives. Most of the water supply network will not need to be renewed over the next thirty years. However, the projected lifecycle expenditure includes funds to be allocated to an asset renewal reserve each year to ensure that assets can be replaced when they reach the end of their life. This asset renewal reserve allocation has been indexed by 3.0% p.a. for inflation.

The capital expansion projects that are currently planned over the next thirty years include the new water treatment plants in each community and new water tanks, and mains to these tanks, at Warren airport to support industrial business needs and firefighting.

The detailed projected lifecycle costs for our water supply network over the next thirty years are shown in the following tables.

Table 10.1: Operations costs for the water supply network, 2020 to 2049 (\$000)

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|--------------|--------------|
| Operations (1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bores | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mains | 24 | 25 | 26 | 27 | 29 | 30 | 32 | 33 | 35 | 37 | 39 | 41 | 43 | 45 | 47 | 49 | 52 | 54 | 57 | 60 | 63 | 66 | 69 | 73 | 76 | 80 | 84 | 89 | 93 | 98 |
| Pumping stations | 156 | 164 | 172 | 181 | 190 | 199 | 209 | 220 | 231 | 242 | 254 | 267 | 280 | 294 | 309 | 325 | 341 | 358 | 376 | 394 | 414 | 435 | 457 | 479 | 503 | 529 | 555 | 583 | 612 | 643 |
| Reservoirs | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 8 | 8 | 8 | 9 | 9 | 10 | 10 | 11 | 11 | 12 | 12 | 13 | 13 | 14 | 15 | 16 | 16 | 17 |
| Treatment | 57 | 59 | 62 | 65 | 69 | 72 | 76 | 80 | 83 | 88 | 92 | 97 | 101 | 107 | 112 | 117 | 123 | 130 | 136 | 143 | 150 | 157 | 165 | 174 | 182 | 191 | 201 | 211 | 222 | 233 |
| Other | 36 | 38 | 40 | 42 | 44 | 47 | 49 | 51 | 54 | 57 | 59 | 62 | 65 | 69 | 72 | 76 | 80 | 84 | 88 | 92 | 97 | 102 | 107 | 112 | 118 | 123 | 130 | 136 | 143 | 150 |
| Total operations | 277 | 291 | 305 | 321 | 337 | 353 | 371 | 390 | 409 | 430 | 451 | 474 | 497 | 522 | 548 | 576 | 605 | 635 | 667 | 700 | 735 | 772 | 810 | 851 | 893 | 938 | 985 | 1,034 | 1,086 | 1,140 |

(1) Operations costs are indexed by 5.0% p.a. for inflation

Table 10.2: Maintenance costs for the water supply network, 2020 to 2049 (\$000)

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 |
|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Maintenance (1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bores | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Mains | 145 | 152 | 160 | 168 | 176 | 185 | 194 | 204 | 214 | 225 | 236 | 248 | 260 | 274 | 287 | 302 | 317 | 332 | 349 | 367 | 385 | 404 | 424 | 446 | 468 | 491 | 516 | 542 | 569 | 597 |
| Pumping stations | 32 | 34 | 35 | 37 | 39 | 41 | 43 | 45 | 47 | 50 | 52 | 55 | 58 | 60 | 64 | 67 | 70 | 74 | 77 | 81 | 85 | 89 | 94 | 99 | 103 | 109 | 114 | 120 | 126 | 132 |
| Reservoirs | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| Treatment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Other | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 28 | 29 | 30 | 32 | 34 | 35 | 37 | 39 | 41 | 43 | 45 | 47 | 50 | 52 | 55 | 57 | 60 | 63 | 66 | 70 | 73 |
| Total maintenance | 196 | 206 | 216 | 227 | 238 | 250 | 263 | 276 | 290 | 304 | 319 | 335 | 352 | 370 | 388 | 408 | 428 | 449 | 472 | 495 | 520 | 546 | 574 | 602 | 632 | 664 | 697 | 732 | 769 | 807 |

(1) Maintenance costs are indexed by 5.0% p.a. for inflation

Table 10.3: List of capital renewal reserve allocations for the water supply network, 2020 to 2049 (\$000)

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Capital renewal (1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bore water (Warren, Nevertire and Collie) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bores | 53 | 54 | 56 | 58 | 59 | 61 | 36 | 38 | 39 | 40 | 41 | 42 | 44 | 45 | 46 | 48 | 49 | 51 | 52 | 54 | 8 | 8 | 9 | 9 | 9 | 9 | 10 | 10 | 10 | 11 |
| Mains | 94 | 97 | 100 | 103 | 106 | 109 | 55 | 57 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | 76 | 78 | 81 | 66 | 68 | 70 | 73 | 75 | 77 | 79 | 82 | 84 | 87 |
| Pumping stations | 53 | 54 | 56 | 58 | 59 | 61 | 22 | 22 | 23 | 24 | 24 | 25 | 26 | 27 | 27 | 28 | 29 | 30 | 31 | 32 | 22 | 23 | 23 | 24 | 25 | 25 | 26 | 27 | 28 | 29 |
| Reservoirs | 222 | 229 | 236 | 243 | 250 | 257 | 36 | 37 | 38 | 39 | 40 | 42 | 43 | 44 | 45 | 47 | 48 | 50 | 51 | 53 | 16 | 16 | 17 | 17 | 18 | 18 | 19 | 19 | 20 | 21 |
| Total bore water | 422 | 434 | 447 | 461 | 475 | 489 | 149 | 153 | 158 | 163 | 167 | 173 | 178 | 183 | 189 | 194 | 200 | 206 | 212 | 219 | 112 | 116 | 119 | 123 | 126 | 130 | 134 | 138 | 142 | 146 |
| River water (Warren) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mains | 72 | 74 | 76 | 79 | 81 | 83 | 86 | 88 | 91 | 94 | 97 | 100 | 103 | 106 | 109 | 112 | 115 | 119 | 122 | 126 | 37 | 38 | 39 | 40 | 42 | 43 | 44 | 46 | 47 | 48 |
| Pumping stations | 17 | 18 | 18 | 19 | 20 | 20 | 9 | 9 | 9 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 12 | 12 | 12 | 13 | 11 | 11 | 11 | 12 | 12 | 12 | 13 | 13 | 13 | 14 |
| Reservoirs | 19 | 19 | 20 | 20 | 21 | 21 | 22 | 23 | 23 | 24 | 25 | 26 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 33 | 34 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 44 |
| Total river water | 108 | 111 | 114 | 118 | 121 | 125 | 117 | 120 | 124 | 128 | 131 | 135 | 139 | 144 | 148 | 152 | 157 | 162 | 166 | 171 | 81 | 83 | 86 | 89 | 91 | 94 | 97 | 100 | 103 | 106 |
| Total capital renewal | 530 | 545 | 561 | 579 | 596 | 614 | 266 | 273 | 282 | 291 | 298 | 308 | 317 | 327 | 337 | 346 | 357 | 368 | 378 | 390 | 193 | 199 | 205 | 212 | 217 | 224 | 231 | 238 | 245 | 252 |

(1) Capital renewal reserve allocations are indexed by 3.0% p.a. for inflation

Table 10.4: List of capital expansion projects for the water supply network, 2020 to 2049 (\$000)

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 |
|---|------------|------------|------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Capital expansion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water treatment plant - Warren | - | - | 450 | 450 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Water treatment plant - Nevertire | - | 300 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Water treatment plant - Collie | - | 300 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Water tanks and mains at Warren airport | 600 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total capital expansion | 600 | 600 | 450 | 450 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

10.2 Funding plan for the water supply network

10.2.1 Managing the water supply fund

Funding to support the water supply network is primarily sourced from charging the users of the network. Grant funding is also sought when major projects need to be undertaken. A third source of funding is from borrowings.

Together, this funding flows into the water supply fund. Expenditure for the network is drawn from this water supply fund.

Council's aim is to operate the water supply network on a full cost recovery basis with no significant cross-subsidies from non-water Council revenues. In other words, it is run as an independent business.

10.2.2 User charges

The residents of Warren, Nevertire and Collie pay for their water services. These payments are held in a water supply fund which is used to support the costs of maintaining the water supply network. Council manages the inflow of funds into the water supply fund through its water pricing policies.

Two types of water charges are applied to customers. The first is a water usage charge. The second is a water access charge. For the town of Warren, where residents have access to a dual water supply, the water charges differ for potable and non-potable water.

Other fees such as connection fees are also applied where appropriate.

Pricing principles

Council uses the following principles for the pricing of water for its residential, commercial and industrial customers.

- There will be full cost recovery within the water supply business and no significant cross-subsidies from non-water Council revenues
- Water services are priced at a level that will support the long-term financial viability and sustainability of providing water services to our community
- Prices will maintain intergenerational equity
- If possible, the water supply business will remain capable of funding any new and replacement assets needed to provide the current level of service to its customers and the broader community
- Over the long-term, customer charges will be kept as low and as stable as possible
- Water tariffs will be in two parts: a water usage charge and a water access charge
- At least 50% of residential water revenue will be generated from water usage charges
- Water usage charges will be based on a charge per kL; there will be no free or pre-paid water allowances
- Water access charges for non-residential customers will be based on the customer's demands on the system
- Pricing will be independent of land value
- To encourage water conservation, high water consuming residential customers will be subject to a stepped price increase (expressed as an excess water usage charge) of at least 50% for incremental usage above a specified threshold. This threshold should not exceed 450 kL/year per customer in Warren and Nevertire or 400 kL/year per customer in Collie
- Water charges will be indexed at 5.0% per annum.

10.2.3 Grants

Based on the size of our communities, our water services are not sustainable. We are highly reliant on grant funding.

Council applies for grant funding when major projects are to be undertaken. This might be when significant renewal is required or when new infrastructure is to be installed.

Council will be allocating funds to an asset renewal reserve each year to help in reducing its reliance on grant funding for renewal projects. However, grants will be needed for significant renewal work and to support Council's planned capital expansion projects. These expansion projects include the new water treatment plants in Warren, Nevertire and Collie and the new water tanks, and mains to these tanks, at Warren airport.

10.2.4 Borrowings

Council also has the option of borrowing to support investments in new water infrastructure. This option requires careful monitoring of Council's debt service ratio.

10.3 Summary of expenditure and funding sources

Table 10.5 is the financial plan for the water supply network for the next thirty years. It summarises the projected asset lifecycle expenditure and projected funding.

Table 10.5: Thirty-year financial plan for the water supply network, 2020 to 2049 (\$'000)

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Income | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water usage charges (1) | 356 | 374 | 393 | 412 | 433 | 454 | 477 | 501 | 526 | 552 | 580 | 609 | 639 | 671 | 705 | 740 | 777 | 816 | 857 | 900 | 945 | 992 | 1,042 | 1,094 | 1,148 | 1,206 | 1,266 | 1,329 | 1,396 | 1,466 |
| Water access charges (1) | 466 | 489 | 514 | 539 | 566 | 594 | 624 | 655 | 688 | 723 | 759 | 797 | 836 | 878 | 922 | 968 | 1,017 | 1,068 | 1,121 | 1,177 | 1,236 | 1,298 | 1,363 | 1,431 | 1,502 | 1,577 | 1,656 | 1,739 | 1,826 | 1,917 |
| Other income | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 9 | 9 | 9 | 10 | 10 |
| Grants | - | 600 | 450 | 450 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Known grants for capital expansion | 600 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Borrowings | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total income | 1,426 | 1,467 | 1,361 | 1,406 | 1,004 | 1,054 | 1,106 | 1,162 | 1,220 | 1,280 | 1,344 | 1,411 | 1,482 | 1,556 | 1,634 | 1,715 | 1,801 | 1,891 | 1,985 | 2,084 | 2,188 | 2,297 | 2,412 | 2,533 | 2,659 | 2,792 | 2,931 | 3,078 | 3,231 | 3,393 |
| Expenditure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operations (2) | 277 | 291 | 305 | 321 | 337 | 353 | 371 | 390 | 409 | 430 | 451 | 474 | 497 | 522 | 548 | 576 | 605 | 635 | 667 | 700 | 735 | 772 | 810 | 851 | 893 | 938 | 985 | 1,034 | 1,086 | 1,140 |
| Maintenance (3) | 196 | 206 | 216 | 227 | 238 | 250 | 263 | 276 | 290 | 304 | 319 | 335 | 352 | 370 | 388 | 408 | 428 | 449 | 472 | 495 | 520 | 546 | 574 | 602 | 632 | 664 | 697 | 732 | 769 | 807 |
| Capital renewal (4) | 530 | 545 | 562 | 579 | 596 | 614 | 266 | 273 | 282 | 290 | 299 | 308 | 317 | 327 | 336 | 346 | 357 | 368 | 379 | 390 | 193 | 199 | 205 | 211 | 218 | 224 | 231 | 238 | 245 | 252 |
| Capital expansion (5) | 600 | 600 | 450 | 450 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total expenditure | 1,603 | 1,642 | 1,533 | 1,576 | 1,171 | 1,218 | 899 | 939 | 981 | 1,024 | 1,069 | 1,117 | 1,167 | 1,219 | 1,273 | 1,330 | 1,389 | 1,452 | 1,517 | 1,585 | 1,448 | 1,517 | 1,589 | 1,664 | 1,743 | 1,826 | 1,913 | 2,004 | 2,099 | 2,199 |
| Surplus / (shortfall) | (177) | (175) | (172) | (170) | (167) | (164) | 207 | 223 | 239 | 256 | 275 | 294 | 315 | 337 | 361 | 385 | 412 | 439 | 468 | 499 | 740 | 780 | 823 | 869 | 916 | 966 | 1,018 | 1,074 | 1,132 | 1,194 |

(1) Water usage charges and water access charges are indexed at 5.0% p.a.

(2) Details of operations costs are provided in table 10.1 above

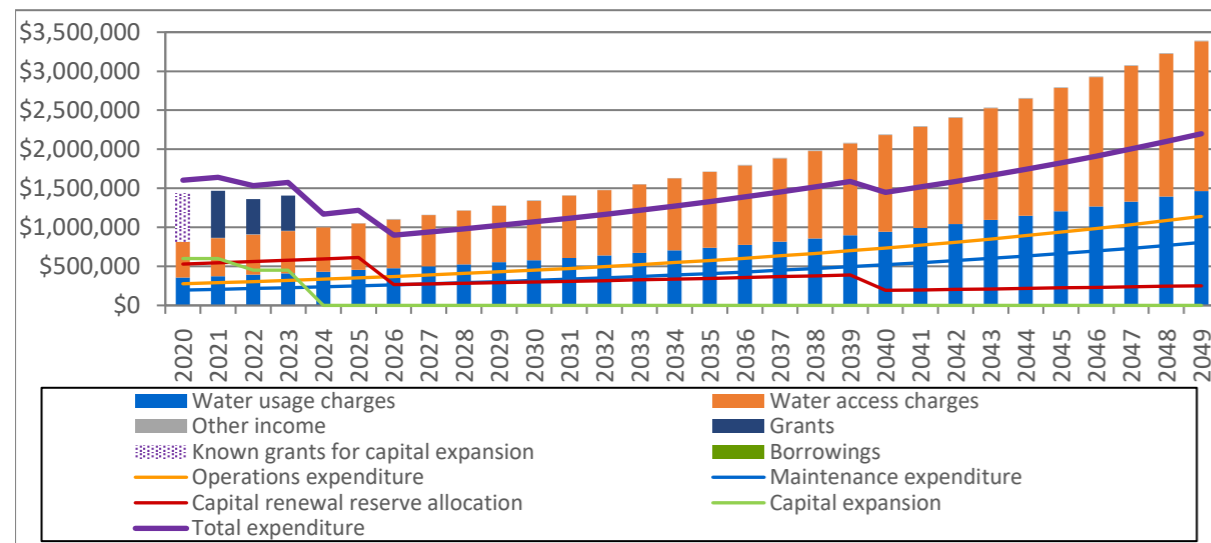
(3) Details of maintenance costs are provided in table 10.2 above

(4) Details of specific capital renewal reserve allocations are provided in table 10.3 above

(5) Details of specific capital expansion projects are provided in table 10.4 above

Figure 10.2 summaries the projected expenditure and funding picture for the water supply network over the next thirty years.

Figure 10.2: Thirty-year financial plan for the water supply network, 2020 to 2049



The table and graph above highlight the gap in the required funding for the water supply business in the short- to medium-term.

Between 2020 and 2025, it is anticipated that there will be a shortfall, i.e. total income will be less than our operations, maintenance and capital expenses. This is shown in the last line of table 10.5 and in figure 10.2 as the gap between the purple total expenditure line and the top of the income bars. This shortfall will be carefully monitored over this period. From 2026, it is anticipated that there will be a surplus. This surplus will increase over time as income increases with a slightly higher indexation rate of 5.0% p.a. compared with the asset renewal reserve allocation which is indexed at 3.0% p.a.. Operations and maintenance expenses are indexed at 5.0% p.a..

The known grant in this table and graph is funding from the Drought Communities Program. This grant will fund the installation of new water tanks, and mains to these tanks, at Warren airport in the 2020 financial year.

Grant funding will also be required for the other capital expansion projects planned for later years, being the new water treatment plants in Nevertire and Collie in the 2021 financial year and the new water treatment plant in Warren in 2022 and 2023 financial years (refer to table 10.4 for the list and timing of capital expansion projects). Applications for this grant funding have not yet been made.

11 Key performance benchmarks

Council monitors and assesses its performance with respect to maintaining and renewing its assets using key performance benchmarks. These benchmarks are used to measure how well Council is meeting the community's expectations in relation to the condition of its assets.

Council recognises the importance of working with the local community when managing the Shire's assets on behalf of the community. Council works with the community in two important ways. Firstly, it creates community service expectations. These summarise what the community wants. Secondly, it measures its progress in meeting these community service expectations against key performance benchmarks.

By using community-focussed performance benchmarks, Council can ensure that everything it does in maintaining and improving its water supply network is directly relevant to the community.

The key performance benchmarks that have been established for the water supply network are outlined in table 3.1.

Council will be incorporating these benchmarks into its Customer Relationship Management (CRM) system so that performance against these benchmarks can be tracked, measured and improved.

12 Risk management plan

12.1 Critical risks

Council is committed to the identification and elimination or reduction of risks associated with hazards that arise throughout Council's operations as far as reasonably practicable. Our risk assessment process:

- Identifies credible risks
- Analyses the likelihood of the risk event occurring
- Assesses the consequences should the event occur
- Develops a risk rating ('likelihood' times 'consequences')
- Evaluates the risk
- Details a risk treatment plan for non-acceptable risks.

The critical risks identified for our water supply network are summarised in the following table. The table includes the risk treatment plans that have been developed to reduce the likelihood of these risks and to limit their impact.

Table 12.1: Critical risks for our water supply network

| No. | Description | Likelihood / frequency | Consequence | Risk rating | Risk treatment plan |
|-----|--|--|---|-------------|---|
| 1 | Electricity supply for bores is cut so that water cannot be drawn and stored | Warren: Likely / monthly Collie and Nevertire: Likely / weekly to monthly | <ul style="list-style-type: none"> • Communities' water supply runs out | High | <ul style="list-style-type: none"> • Install backup generator at each bore |
| 2 | Potable water reservoirs are contaminated | Possible / varies by location and circumstances | <ul style="list-style-type: none"> • Potable water supply network becomes unusable | High | <ul style="list-style-type: none"> • Conduct regular testing of water in reservoirs • Regularly test chlorination systems and chlorine residual • Follow the requirements of Department of Industry Water Circular LWU18 (Effective disinfection and security of distribution system) • Develop contingency plans |
| | | | | | |

12.2 Critical assets

Critical assets are specific assets which have a high consequence of failure. For example, failure would cause a financial loss within the community or a marked reduction of service. Generally, critical assets do not necessarily have a high likelihood of failure.

By identifying critical assets and critical failure modes, Council can appropriately target and refine inspection regimes, maintenance plans and capital expenditure plans.

Operations and maintenance activities may also be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency and higher maintenance intervention levels.

Council has determined that our critical water supply network assets include the following:

Table 12.2: Critical assets for our water supply network

| No. | Critical asset | Why critical |
|-----|--|--|
| 1 | River water | Used for fire-fighting during emergencies |
| 2 | Bore pumps | Needed to draw the potable water required by the community |
| 3 | Electricity supply | Needed to draw water from bores |
| 4 | Chlorination (disinfection) infrastructure | Needed to reduce the risk of contamination |
| 5 | Reservoirs | Needed to store the water supplies for the communities |
| | | |

13 Asset management improvement program

Council has identified several initiatives to improve its asset management capabilities in relation to its water supply network. These are outlined below.

Table 13.1: Asset management improvement program, water supply network

| Area | Task | Who | When |
|--|--|---|---------------|
| 1. Systems and processes | <p>Implement an integrated asset management system and associated processes. This will enable Council to:</p> <ul style="list-style-type: none"> • Integrate its engineering and finance functions • Store and access all asset management data from a single source • Manage, upload and retrieve asset condition ratings more regularly and in a consistent format • Track patterns of asset deterioration • Produce timely and accurate reports including: <ul style="list-style-type: none"> • The annual financial reports • Detailed asset costing and valuation reports • Asset component reports • Financial and sustainability benchmark reports • Reports supporting the LTFP • Simplify all asset management decision making • Enhance Council's predictive capabilities (using up-to-date condition data and unit rates) to assist with decisions on where it should be allocating its asset funding or if it should be seeking additional funding • Support the engineering services division by producing and tracking work orders and then transferring the costs of this work to the general ledger in real time | Divisional Manager Finance and Administration Services / Divisional Manager Engineering Services | December 2021 |
| 2. Accuracy and completeness of asset condition data | <p>Capture accurate and complete asset condition data regularly. This will allow Council to:</p> <ul style="list-style-type: none"> • Improve its understanding of asset deterioration patterns over time • Allocate capital renewal funding according to the actual condition of Council's assets | Divisional Manager Engineering Services | May 2021 |
| 3. Community expectation benchmarks | <p>Track Council's performance against its community expectation benchmarks. This will ensure that it will:</p> <ul style="list-style-type: none"> • Maintain its assets at the level that is required by the community | Divisional Manager Engineering Services | May 2021 |
| 4. Council updates | <p>Report regularly (every six months) to Council, to notify them of:</p> <ul style="list-style-type: none"> • Water breaks • Water quality | Divisional Manager Engineering Services | December 2021 |

| Area | Task | Who | When |
|------------------------------|--|---|---------------|
| 5. Productivity improvements | Implement a productivity improvement program to: <ul style="list-style-type: none">• Reduce Council’s unit rate costs for asset renewal• Increase the time between rehabilitation work• Ensure that Council is only renewing assets that need renewing | Divisional Manager Engineering Services | December 2021 |
| | | | |