

Singleton Council





Water Supply Services

Asset Management Plan



Version 4

June 2015

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1. EXECUTIVE SUMMARY

Context

The Singleton Local Government Area (LGA) has a resident population of 22,700 and covers an area of 4,900 square kilometres. (ABS, Census 2011) The Singleton Council provides local government services to the region's urban area and a number of rural estates, including Broke, Jerry's Plains, Bulga, Camberwell and Branxton.

Singleton town is located on the banks of the Hunter River in New South Wales some 200 kilometres north-north-west of Sydney, and 80 kilometres northwest of Newcastle.

First settled in 1861, Singleton is home to a diverse mix of commerce and industry, including agriculture, vineyards and retail. Light and heavy industry, power generation and particularly coal mining are the dominant economic drivers.

Water Service Summary

The Singleton Council provides a safe, effective and efficient potable water supply system that serves approximately 18,031 people (6,678 households) through the trunk connection of 6,349 domestic and 795 commercial/industrial properties. About 441 ML/year bulk potable water is also supplied to large customers such as the Singleton Abattoir, Army Camp, potable water traders and three coal mining complexes.

The Singleton LGA's raw water is drawn from Glennies Creek Dam, conveyed to the 30ML/day Obanvale Water Treatment Plant where it is treated to drinking water standards before distribution to consumers. Council holds a high security raw water supply licence for 5,000ML per year which allows for use of the allocated water on a priority basis, including in the event of drought.

The Water Supply Service

The Water Supply network comprises:

- 1 x Prechlorination plant
- 1 x Powdered activated carbon dosing plant
- 1 x Direct infiltration water treatment plant 30ML/day treatment capacity
- 11 x water service reservoirs – 27ML storage capacity combined
- 9 x pump stations
- 112km transfer and trunk supply mains
- 162km trunk reticulation mains
- Additional chlorination dosing points

These infrastructure assets have a replacement value of \$130,000,000.

The Asset Plan Methodology

One of the important aspects of the asset management plan is the forecast of existing asset renewal requirements. For the Singleton Water Supply Asset Management Plan three scenarios have been considered when developing the forecast.

Scenario 1 uses the Council's asset register valuation data to calculate the renewal costs. In this scenario the acquisition year of an asset is added to the useful life of the asset to estimate the year when renewal is due. Scenario 1 when compared to scenario 3 provides an estimate of confidence in the accuracy and currency in the register used for asset valuation purposes.

Scenario 1 indicates that the funds to meet the forecast renewal requirements are not aligned with funding in the LTFP. However this is due to the fact that Water Assets "Useful Life", on which calculations are based in Scenario 1, may not reflect the actual renewal/replacement timeframe for these assets. For example, Council has some water mains which are still in an excellent condition even though their estimated useful life (based in industry standards) has expired. Council will not renew any infrastructure that is in excellent condition. Renewal will be based on asset performance and any "expired" asset lifetime will be extended until such time as the condition of the asset requires replacement/renewal.

Scenario 2 uses capital renewal expenditure projections assessed by technical staff to sustain current service levels. This assessment uses a combination of detailed technical analysis and an estimate of the average network renewals required. The renewal requirements identified in scenario 2 are presently well within the current funding capacity of council.

Scenario 3 is the reality of the situation when the capital renewal expenditures that can be achieved are within available funds in Council's Long Term Financial Plan. Scenario 3 is a reflection of the actual funding available. The difference between Scenario 2 and Scenario 3 represents "what we can't do". Again, the funding available for Singleton's water supply network is sufficient to achieve acceptable service levels within the framework of Council's 30-year Capital Renewal, Replacement and New Works Program 2013 to 2040.

What does it Cost?

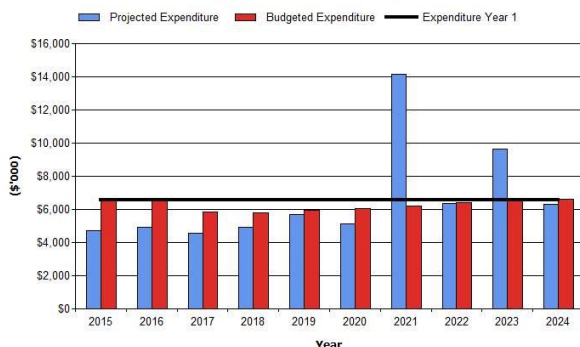
The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is \$66.638M or \$6.66M on average per year.

Estimated available funding for this period is \$62.577M or \$6.26M on average per year which is 94% of the cost to provide the service. This is a funding shortfall of \$406,000 on average per year. This is based on the Scenario 2 methodology (Estimate to sustain current service levels).

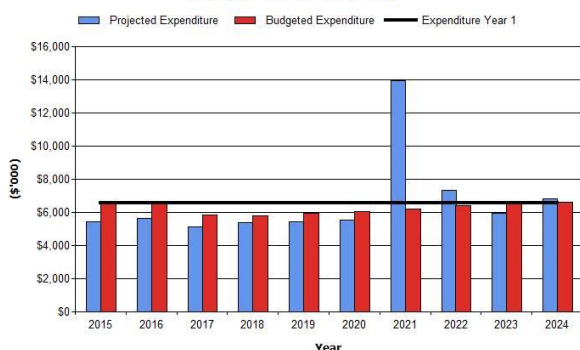
This gap can be sourced from the Water Supply Reserve Fund without fees and charges increases above CPI. The projected shortfall may also reduce significantly as more accurate “Useful Life” assessments become available with the programmed condition review. Long-term data indicates that the spike in additional renewal cost in 2021 is associated primarily with the projected renewal of mains assessed to be in very good condition.

Projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan are shown in the graphs following for Scenario 1, 2 and 3.

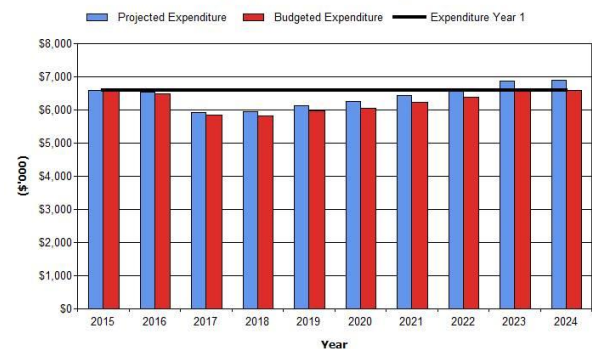
Singleton - Projected and Budget Expenditure for (Water Supply 2015_S1_V1)



Singleton - Projected and Budget Expenditure for (Water Supply 2015_S2_V1)



Singleton - Projected and Budget Expenditure for (Water Supply 2015_S3_V1)



These figure show the results of scenario modelling 2 (technical estimates) and 3 (ideal situation) are reasonably aligned. Again the differences are associated with the remaining life of main trunk and reticulation pipe infrastructure and the programmed infrastructure condition review will provide clarity and facilitate capital works plan re-alignment.

What we will do

Council plans to operate and maintain the water supply system to achieve the following objectives:

1. To ensure the water supply system is maintained at a safe and functional standard as set out in this asset management plan and supporting strategies.
2. To provide safe, effective and resource efficient reticulated water supplies to as many householders as possible in the local government area.
3. To ensure that Council's business activities operate at no cost to Council and generate sufficient revenue to provide the appropriate level of services, taking into account community service obligations and legislative requirements.

The specific aim is to provide water supply services for the following:-

- Operation, maintenance, renewal and upgrade of Singleton Water Supply Services to meet the service levels set in “Singleton Council Water Supply and Sewerage Services: Strategic Business Plan – July 2014” or as amended in that document from time to time.
- Renewals planned within the 10 year planning period will occur as detailed in Council's annual Infrastructure Capex Budget.
- Additional refinement of the condition and design lives of various sub-categories will be undertaken, and if required, adjustments to the long term price path for the Water Fund will be implemented to ensure financial sustainability is maintained.

Singleton's Water Fund has a long term price path established for the levying of water charges, which provides for long term financial sustainability. This price path allows specifically for the renewal of all infrastructure based upon the design lives of all asset classes.

What we cannot do

Council does not have sufficient funds to connect all rural and outlying homes to the water supply network. However, as new development expands outside the current town footprint nearby rural homes may be able to connect cost effectively to town water supplies.

- Continue to improve and broaden condition assessment activities and records,
- Establish a resourcing path to service the already increased budgets for asset renewals,
- Prioritise renewal and upgrade works based on risks,
- Continue to improve asset information and knowledge,
- Develop a service deficiency and critical infrastructure register for inclusion in the future updates of this Asset Management Plan.

Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. We have identified major risks as:-

- Changes in weather patterns and their relationship to long-term yield of water sources for Singleton require better understanding and must be quantified,
- Staffing resources required to undertake renewal programs may require adjustment. Reallocation of tasks or additional staffing maybe required,
- The changing regulatory framework may transfer additional responsibilities to Council, which in turn may place financial restrictions on asset management programs.
- Rising cost of infrastructure,
- Rate and quantum of land use changes and its effect on infrastructure and community expectations.

We will endeavour to manage these risks within available funding by:-

- Reallocating resources to areas of highest need in the short term,
- Continue and expand where possible, current business activities of the Water Fund
- Consider the need for adjustments to the level of water charges and fees for the long term,
- Reassess capital works programs (non-renewals),

Confidence Levels

This AM Plan is based on high level of confidence information.

The Next Steps

The actions resulting from this asset management plan are:-

Questions you may have

determine the appropriate level of service provided to the community at the lowest possible cost.

What is this plan about?

This asset management plan covers all infrastructure assets necessary to operate the Singleton Water Supply Scheme. These assets include a 30 mega litre per day capacity direct filtration Water Treatment Plant, remote chlorination sites, service reservoirs, pump stations and approximately 284 kilometres of transfer and trunk supply mains, as well as trunk reticulation mains, throughout the Singleton local government area. Also included is the extensive telemetry network which allows for real time, continuous monitoring of the water supply network.

This AMP was developed to ensure that local residents and business are provided with a continuing safe and efficient, high quality water supply service.

What is an Asset Management Plan?

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

An asset management plan details information about infrastructure assets including actions required to provide an agreed levels of service in the most cost effective manner. The plan defines the services to be provided, how the services are provided, and what funds are required to provide the services.

What options do we have?

Unlike the General Fund of Council, Council is able to adjust water fees and charges to ensure that water supply services are financially sustainable in the short, medium and long-term. This aim is achieved using a number of planning tools, including long term financial modelling and the development of a sound Business Plan for the Water Fund.

Currently water charges levied by Council have been assessed as adequate to meet the full cost of asset operation, maintenance and necessary renewals based upon asset design lives.

What can we do?

We will continue to develop options, costs and priorities for future services, consult with the community to plan future services, and match the community's service needs with its ability and willingness to pay for any additional services.

We invite you to provide feedback on the issues raised in this asset management plan so that we can consider your suggestions on how we may change, increase or reduce water services currently provided and

2. INTRODUCTION

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding needed to provide the required levels of service over a 20 year planning period.

The asset management plan follows the format for AM Plans recommended in Section 4.2.6 of the International Infrastructure Management Manual¹.

The asset management plan is to be read in conjunction with the organisation's Asset Management Policy, Asset Management Strategy and the following associated planning documents:

- Singleton Council's Asset Management Strategy – August 2014
- Resourcing Strategy – It is an internal document and does not need to be endorsed by Council. The document contains:
 - Singleton Council's Workforce plan,
 - Singleton Council's Asset Management Strategy,
 - Singleton Council's Long Term Financial Plan,
- Singleton Community Strategic Plan "Our Place: A Blueprint for 2023" – June 2013
- Singleton Council – Integrated Water Cycle Management Plan – Evaluation Study – July 2010
- Singleton Council Water Conservation Strategy and Demand Management Modelling – March 2010
- Best-Practice Management of Water Supply and Sewerage Guidelines
- Singleton Council – Water Supply and Sewerage Strategic Business Plan – July 2014
- Singleton Council – 10 Year Asset Renewal Summary for Water Supply and Sewerage Services – October 2014
- Singleton Council - Water Technical Report for Development Servicing Plan – May 2005
- 2013-14 NSW TBL Benchmarking Report – NSW Office of Water

Table 2.1: Assets covered by this Plan

| System Type | Asset Class | Asset Type | Current Replacement Cost |
|--------------|------------------------|---------------------------|--------------------------|
| Water | Water Mains | Reticulation | \$62,211,419 |
| | | Trunk | \$27,036,050 |
| | Water Pumping Stations | Distribution | \$2,042,989 |
| | Water Reservoirs | Concrete | \$3,494,515 |
| | | Standpipe | \$1,630,000 |
| | | Steel | \$2,846,878 |
| | | Valve | \$150,077 |
| | Water Treatment Works | Chlorine room | \$184,687 |
| | | Conventional | \$30,000,000 |
| | | PAC Plant | \$133,402 |
| | | Permanganate room | \$55,458 |
| | | Water chlorinators | \$399,000 |
| | | Water fluoridation plants | \$225,000 |
| | Ancillary | Monitoring | \$276,900 |
| Total | | | \$130,686,375 |

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide Water Supply services to the Singleton community in accordance with the guidelines and regulations set down by State and Federal authorities.

¹ IPWEA, 2011, Sec 4.2.6, *Example of an Asset Management Plan Structure*, pp 4 | 24 – 27.

Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.1.1.

Table 2.1.1: Key Stakeholders in the AM Plan

| Key Stakeholder | Role in Asset Management Plan |
|---------------------------------|---|
| Elected Members | Endorsement of the asset management policy, strategy and plans. Set high level policy direction through the development of asset management principles in the Community Strategic Plan. |
| Senior Management | Endorse the development of asset management plans and provide the resources required to complete this task. Set high level priorities for asset management development in Council and raise the awareness of this function among Council staff and contractors. Support the implementation of actions resulting from this plan and prepared to make changes to a better way of managing assets and delivering services. Support for an asset management driven budget and LTFP. |
| Corporate Services | Consolidating the asset register and ensuring the asset valuations are accurate. Development of supporting policies such as capitalisation and depreciation. Preparation of asset sustainability and financial reports incorporating asset depreciation in compliance with current Australian accounting standards. AM and GIS support and administration. |
| Water and Waste Water Staff | Provide local knowledge and detail on all water supply assets. They verify the size, location and condition of assets. They can describe the maintenance standards deployed and Council's ability to meet technical and customer levels of service. |
| Asset Management Consultants | Provide support for the development of asset management plans and the implementation of effective asset management principles within Council. Also independently endorse asset revaluation methodology. |
| External Parties and Regulators | Community residents, & businesses; Tourist and Visitors (as occasional users); Neighbouring Councils; Water supply service users; Developers & Utility companies and; Federal and State Government authorities & agencies such as the Office of Water, NSW Health, EPA. |

Our organisation's organisational structure and Asset Management Implementation Structure for service delivery from infrastructure assets is detailed in Figures 2.1.2 and 2.1.3 on the following page.

Figure 2.1.2 Singleton Council Organisational Structure

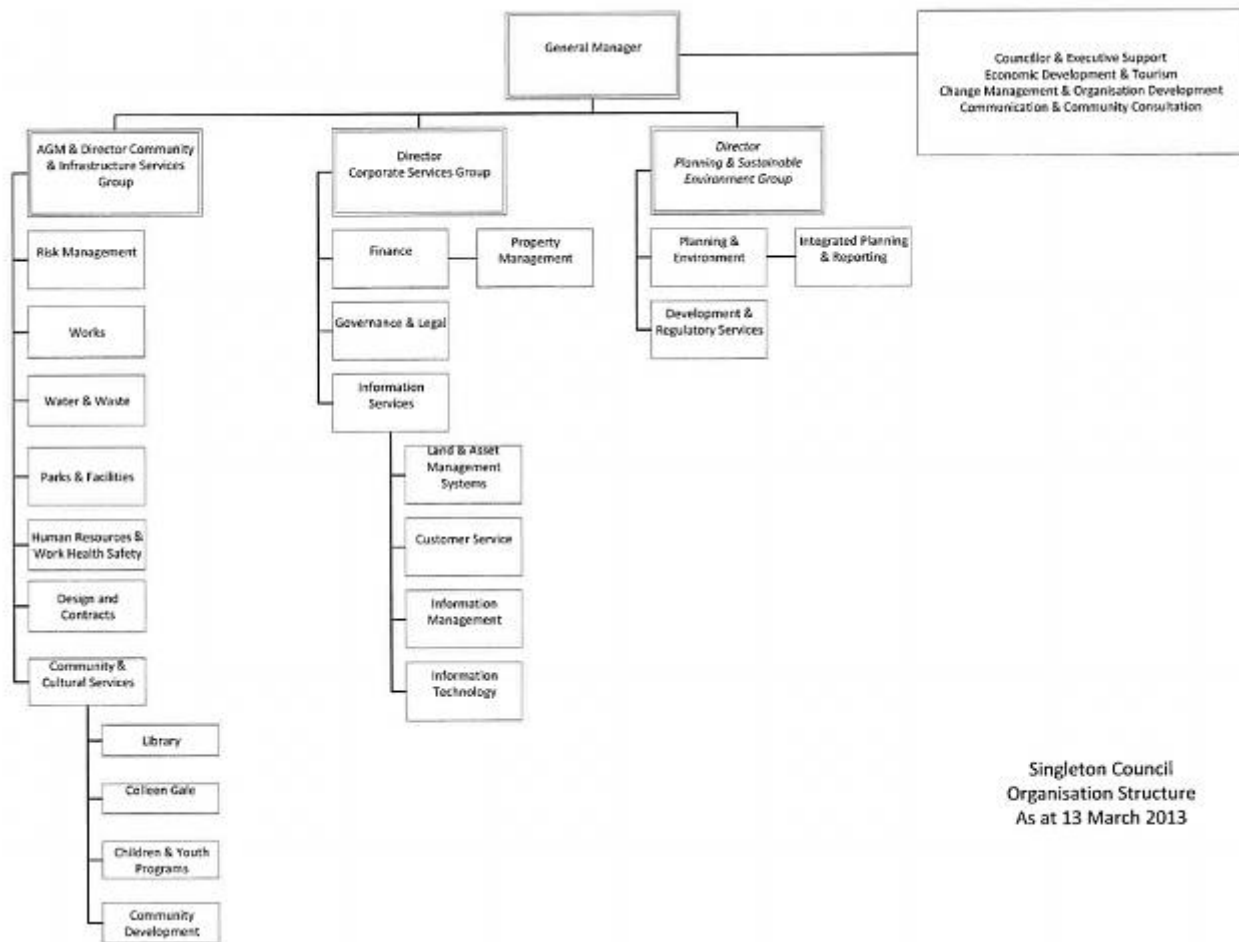
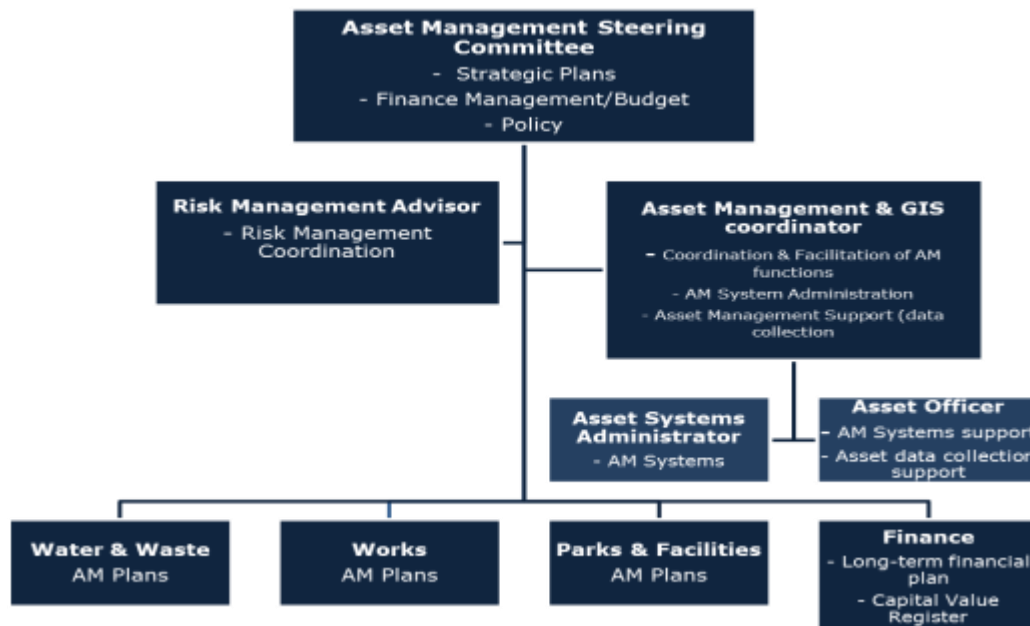


Figure 2.1.3 Asset Management Implementation Structure



2.2 Goals and Objectives of Asset Management

The organisation exists to provide services to its community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by 'purchase', by contract, construction by our staff and by donation of assets constructed by developers and others to meet increased levels of service.

Our goal in managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.²

2.3 Plan Framework

Key elements of the plan are

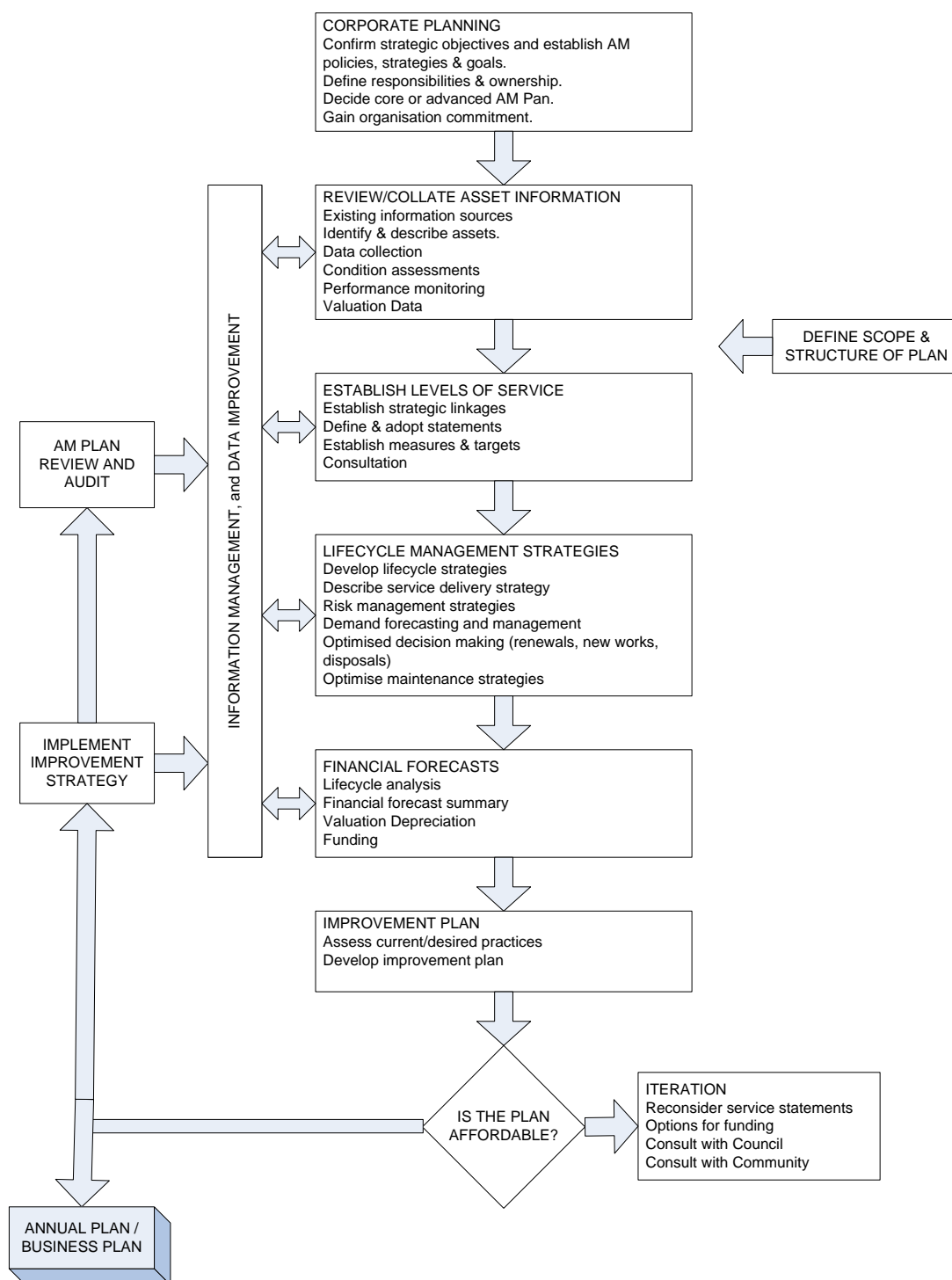
- Levels of service – specifies the services and levels of service to be provided by the organisation,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Life cycle management – how Council will manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices,
- Monitoring – how the plan will be monitored to ensure it is meeting the organisation's objectives,
- Asset management improvement plan.

A road map for preparing an asset management plan is shown on the following page.

² Based on IPWEA, 2011, IIMM, Sec 1.2 p 1|7.

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11.



2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual³. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

Future revisions of this asset management plan will move towards 'advanced' asset management using a 'bottom up' approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels in a financially sustainable manner.

2.5 Community Consultation

This 'core' asset management plan is prepared to facilitate community consultation initially through feedback on public display of draft asset management plans prior to adoption by the Council. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist the Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability and willingness to pay for the service.

³ IPWEA, 2011, IIMM.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Customer research and expectations consists of regular monitoring of Council's Customer Request Management System (CMR) which tracks requests, complaints and their resolution/completion times linked to KPIs. Council also commissioned a community survey to gauge customer satisfaction with council services between 27th April and 2nd May 2011. The results of this survey, including as it relates to the Council's Water and Sewerage programs is shown in Figure 3.3 below.

Figure 3.1.1 Quadrant Analysis – Importance vs. Satisfaction

Figure 3-1 Quadrant Analysis - Importance vs. Satisfaction

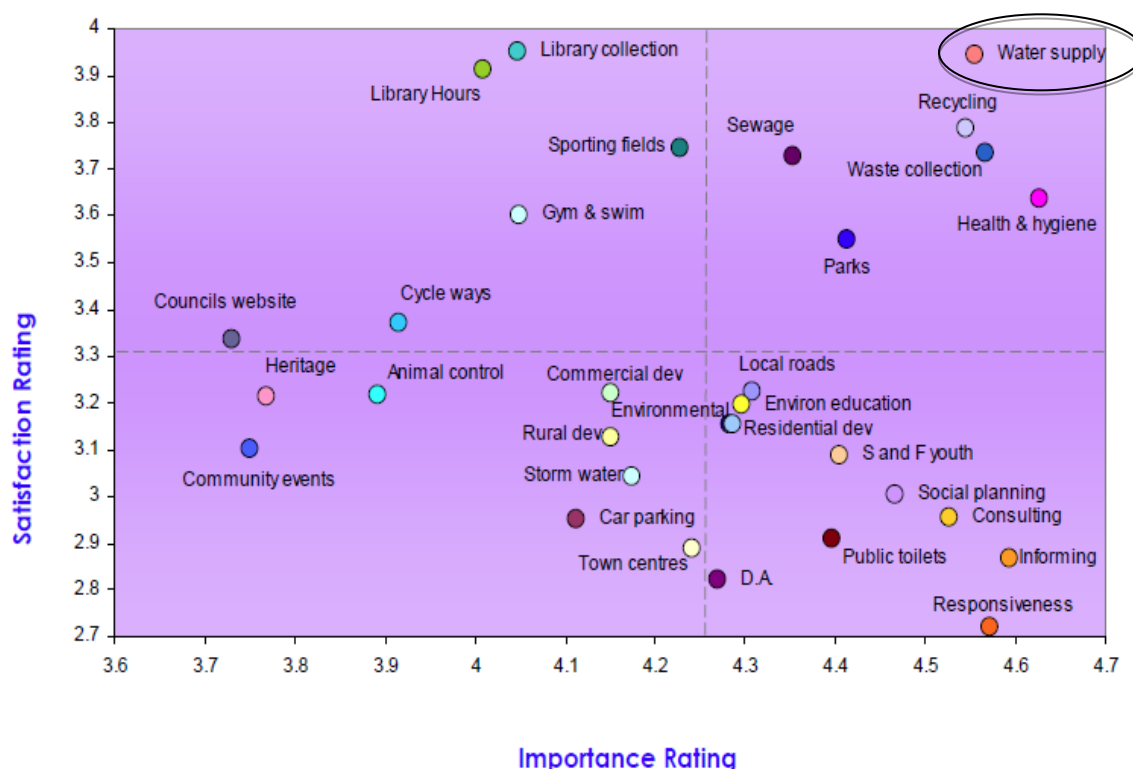


Figure 3.1.1 above shows the quadrant analysis of customer satisfaction across all areas of Council. It reflects that customers place high importance on their Water Supply Service and that they have a high level of satisfaction with their current service levels.

Table 3.1.2 below shows the level of importance the community places on a service while Table 3.1.3 indicates their level of satisfaction with the services.

Table 3.1.2 Community Importance Rating

| Service/Facility (rank order) | Importance Rating (%) | | | | Mean Score (out of 5) |
|--|--------------------------|--------------|---------------|---------------|--------------------------|
| | No Response | Low (1-2) | Medium (3) | High (4-5) | |
| Water Supply | 3.9 | 4.6 | 4.8 | 86.7 | 4.56 |
| Sewerage & Waste Water Services | 4.0 | 5.4 | 9.8 | 80.8 | 4.35 |
| Environmental education (e.g. waste, recycling, water & energy programs) | 1.1 | 3.8 | 14.0 | 81.1 | 4.30 |

Table 3.1.3 Community Satisfaction Rating

| Service/Facility (rank order) | Satisfaction Rating (%) | | | | Mean Score (out of 5) |
|--|----------------------------|--------------|---------------|---------------|--------------------------|
| | No Response | Low (1-2) | Medium (3) | High (4-5) | |
| Sewerage & Waste Water Services | 11.3 | 7.8 | 26.5 | 54.4 | 3.73 |
| Water Supply | 8.0 | 8.0 | 18.5 | 65.5 | 3.94 |
| Environmental monitoring & protection (e.g. water/river quality monitoring, septic tank compliance) | 11.4 | 21.2 | 36.5 | 30.9 | 3.15 |
| Environmental education (e.g. waste, recycling, water & energy programs) | 4.3 | 18.1 | 45.4 | 32.2 | 3.2 |

Ref. Community Survey Report 2011 – IRIS – IPRF

Key results⁴:-

- Mean satisfaction score ranged from 3.04 to 3.94 out of 5.
- Water Supply received a high satisfaction rating from 65.5% of residents giving this service the highest rating for any service delivered by Council

The **2013-14 TBL Water Supply Performance Report – NSW Office of Water**, April 2013 made the following statements on Singleton Council's performance:

"PERFORMANCE - Singleton Shire Council achieved 100% implementation of the NSW best practice management requirements. The 2014-15 typical residential bill was \$511 which was less than the statewide median of \$582 (Indicator 14). The economic real rate of return was similar to the statewide median (indicator 43). The operating cost (OMA) per property was \$492 which was above the statewide median of \$400 (Indicator 49). Water quality complaints were similar to the statewide median of 3 (Indicator 25). Compliance was achieved for microbiological water quality (100% of the population, 1 of 1 zones compliant), chemical water quality and physical water quality. There were no failures of the chlorination system or the treatment system. Singleton Shire Council reported no water supply public health incidents. Current replacement cost of system assets was \$104M (\$14,600 per assessment). Cash and investments were \$30M, debt was nil and revenue was \$5.8M (excluding capital works grants)."

⁴ Community Survey Report 2011 – IRIS -IPRF

This report clearly identifies that customers of Singleton Water Supply are currently receiving the optimum required level of service at a cost which is less than the state-wide median.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of Singleton Council's vision, mission, goals and objectives.

Council's vision is:

"Singleton, A progressive community of excellence and sustainability"

Council's mission is:

"To provide quality services to the community in an efficient and friendly manner encouraging responsible development"

Relevant organisational goals and objectives and how these are addressed in this asset management plan are:

Table 3.2.1: Organisational Goals and how these are addressed in this Plan

| Goal | Objective | How Goal and Objectives are addressed in AM Plan |
|--|--|---|
| Develop a framework | To ensure that a framework is in place for how and why asset management will be done. | To set up an Asset Management Plan for all areas of Singleton Council's asset based infrastructure and a financial plan so that it can be implemented. Planning long term sustainable infrastructure is important to enable the appropriate resources to be identified and provided. |
| Managing Public Infrastructure | To ensure that Singleton Council has information and an understanding of the consequences of owning public infrastructure. | Implement an action plan to improve asset management capacity and information to raise knowledge and understanding of the consequences of owning public infrastructure. The Water Supply Asset Management Plan is a formalised and structured way for Council to communicate and set strategies for the provision of water supply infrastructure for the community. |
| Ability for information to flow freely | Systems, processes and people give information on effective and efficient options for providing services. | Create an action plan to increase Singleton Council's asset management systems' capacity to provide information on effective and efficient options for delivering infrastructure services. Council has limited resources. The Asset Management Planning provides a way in which the community can be engaged in setting the priorities and subsequent allocation of resources. Infrastructure is provided to support services. Getting the correct infrastructure appropriate to the needs of the community is a primary goal of Asset Management Planning. |
| Control exposure to loss and risk | To have actions in place to control exposure to the potential to have risk and loss with assets. | Expanding on strategies to control exposure to risk and loss. Risk associated with Council infrastructure is identified within the Asset Management Plan. Risk assessment is one of the tools by which Council assesses the long term sustainability of council's |

| Goal | Objective | How Goal and Objectives are addressed in AM Plan |
|-----------------------|--|---|
| | | infrastructure assets. |
| Sustainability | Ensure that the sustainability on a whole of life basis is considered. | Implement strategies to consider the sustainability on a life cycle basis for an asset. The Asset Management Plan in conjunction with Long Term Financial Plan and the Community Plan are the tools by which Council assesses the long term financial sustainability of council's infrastructure assets. |
| Service Levels | Having clearly defined service levels in place. | Ensuring that the service levels are set in place and interconnected with the Asset Management Plan. Asset management principles are used to assess the water supply infrastructure assets managed by Council and the implementation of works programs are linked to achieving the corporate objectives and service level targets. |
| Clearly defined roles | Roles and accountabilities for asset management are clearly defined. | Roles and accountabilities are defined within the Asset Management Plan. Compliance with regulations is a principle theme of the asset planning process, and is considered in the context of compliance with approvals, guidelines, standards, Quality, Function and Safety (Risk). |

In addition, it is intended to expand on the strategies defined in Singleton Council's publication *"Our Place, A Blueprint"* and the July 2010 Report *"Integrated Water Cycle Management Plan Evaluation Study"*. Table 3.2.2 shows the areas of focus and key objectives as per the IWCM Plan.

Additionally, the Water Supply Services risk management plan and Drinking Water Management System will be implemented in conjunction with this AM Plan to ensure Council meet its duty of care and ensures public safety in the development and delivery of all aspects of Water Supply services and associated infrastructure.

Table 3.2.1 shows the areas of focus and key objectives as per the IWCM Plan.

Table 3.2.2 Water Supply Business Objectives

| Focus Areas | Objectives |
|------------------|---|
| Customer Service | <ul style="list-style-type: none"> Meet Levels of Service to which customers have agreed and can afford Establish affordable service areas and solutions. Increase public awareness of water wastage. Establish 10 year pricing policy Keep the community informed and be responsive to its needs Community consulted and considered on all major expenditure decisions |
| Environment | <ul style="list-style-type: none"> Manage the system to prevent adverse environmental impacts Promote and assist establishment of industry and developers in Singleton LGA |
| Asset Management | <ul style="list-style-type: none"> Ensure reliable, secure and cost effective service using latest technology |

| Focus Areas | Objectives |
|-----------------|--|
| | <ul style="list-style-type: none"> • Ensure the system provides levels of service agreed • Provide a Capital Works Program which supplies system needs |
| Human Resources | <ul style="list-style-type: none"> • Maintain a capable, motivated and skilled workforce |
| Business | <ul style="list-style-type: none"> • Evaluate options to achieve capital and maintenance programs with affordable rates and relatively low levels of reserves • Set up the water fund as an independent business |

3.3 Legislative Requirements

We have to meet many legislative requirements including Australian and State legislation and State regulations. These include:

Table 3.3: Legislative Requirements

| Legislation | Requirement |
|--|--|
| <i>Local Government Act, 1993 and Local Government (General) Regulation 2005</i> | Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery. |
| NSW Best-Practice Management of Water Supply and Sewerage Framework | Compliance is a pre-requisite for dividends paid from the surplus of the Water Supply business & required for financial assistance towards capital infrastructure costs under the NSW Government's Country Towns Water & Sewerage Program. |
| Protection of Environment Operations (POEO) Act | Under the POEO Act, it is an offence for the operator of any facility to cause air pollution, including odour. |
| Competition Policy including <i>Competition Policy Reform Act, 1995</i> . | Singleton Council is subject to prohibition on anti-competitive behaviour according to the Trade Practices Act. Provision of Water Supply Services is subject to compliance with the National Water Commission (formerly the National Competition Council) |
| <i>Water Management Act 2000</i> | Regulates the sustainable extraction of water from rivers (water sharing plans and environmental flows) and allows Council to levy developer charges |
| <i>Australian Drinking Water Guidelines 2011</i> | Provides guidance and sets standards on what constitutes good quality drinking water. |
| <i>Environmental Planning and Assessment Act 1979</i> | Requires Council to prepare Local Environmental Plans (LEPs) and Development Control Plans (DCPs) and carry out environmental assessment of all activities and environmental impact statements for designated activities. |
| <i>Public Health Act 1991</i> | Has provisions relating to the safety of drinking water. |
| <i>Work Health and Safety Act 2011</i> | This Act aims to secure and promote the health, safety and welfare of people at work and to protect people at a place of work against risks to health or safety arising out of the activities at work. |

3.4 Levels of Service for Water Supply

Singleton Council has adopted the Customer Service Level and Performance Indicators outlined in Table 3.4.1.

These indicators for water must be aligned and in compliance with the Office of Water, NSW Government's requirements for reporting. As the Local Water Utility, Council is obligated to meet certain levels of service or performance criteria as determined by the NSW Government. Council's annual reporting to the Office of Water is audited for compliance and then publically reported on the Department's website as the "NSW Water Utilities Performance Monitoring Report".

Table 3.4.1 Singleton Council Levels of Service for Water

| Description | Unit | Target Level of Service |
|---|--------------------------------------|--|
| Availability of Supply | | |
| Domestic Peak day | Litres/tenement/day | Less than 3,000 litres/day |
| Domestic Annual | Kilolitres/tenement/year | Average 250 or less. |
| Peak to Average consumption ratio | - | 4 |
| Compliance with Building Code of Australia and NSW Fire Brigade requirements | % area served | 100% target for full town water supply areas. |
| Minimum pressure when conveying maximum daily water demands L/s/tenement | Metres head | 12 |
| Maximum static pressure | Metres head | 90 |
| In accordance with Council's Drought Management Plan | % normal use | In accordance with targets set in Drought Management Plan |
| Average duration restrictions | months per 10 year period | Less than 12 months. |
| Average frequency of restrictions | Number of times/10 year period | Once. |
| Supply Interruptions to Consumers | | |
| Planned notice given to domestic customers | days | ≥1 |
| Planned notice given to commercial customers | days | ≥2 |
| Planned notice given to industrial customers | days | ≥2 |
| Maximum duration of interruption | hours | <6 |
| Number of interruptions | number per customer per year | No more than 2 excluding system development (eg. connecting new subdivisions etc). |
| Total number of interruptions | number per year per 1000 connections | 10 |
| Maximum time to have staff onsite to investigate problem or rectify a supply failure. | | |
| During working hours | minutes | 30 |
| Out of working hours | minutes | 90 minutes where practical |
| Oral inquiry | | 30 minutes to 1 day |
| Written inquiry | | 10 days |
| Time to provide a new water connection to domestic water customer in a serviced area. | working days | 5 |
| Microbiological Quality | | |
| Coliforms | number per 100 ML | 0 |

| Description | Unit | Target Level of Service |
|--|--|-------------------------|
| Faecal Coliforms | number per 100 ML | 0 |
| Current long term microbiological compliance (thermo tolerant coliforms) | % complying | 100 |
| Chemical – meeting 2004 NHMRC guidelines. | | |
| Taste and Odour | Complaints per 1000 customers per year | 5 |
| Dirty Water | Complaints per 1000 customers per year | 5 |
| Iron | mg/L | <0.03 |
| Manganese | mg/L | <0.01 |

Office of Water reporting –

The NSW Office of Water provides the following services:

- provides and maintains a web based database for NSW non metropolitan water utilities to annually report their current water supply and sewerage data
- reviews and analyses water supply and sewerage data for the 105 non-metropolitan water utilities
- monitors and annually reports the overall performance of the 105 non-metropolitan water utilities as a public 'report card' in the annual NSW Water Supply and Sewerage Performance Monitoring Report. The report is provided to non-metropolitan water utilities and enables NSW to comply with the National Water Initiative and achieve the goal of the Country Towns Water Supply and Sewerage Program
- is an active participant in the development of key performance indicators for reporting under the National Performance Framework and in the publication of results in the annual National Performance Report for Urban Water Utilities
- prepares the comprehensive NSW Water Supply and Sewerage Benchmarking Report which presents the full suite of performance indicators and benchmarking data for all local water utilities. This enables each local water utility to benchmark its performance against that of similar utilities to facilitate performance improvement
- provides an annual two-page triple bottom line performance report for each utility's water supply business and for its sewerage business. These reports enable each utility to prepare an annual Action Plan to Council to identify and address any emerging issues or areas of underperformance.

Further information on levels of service are detailed in the Appendix.

4. FUTURE DEMAND

4.1 Water Demand Management

Essentially, demand management is the implementation of initiatives and measures to control and/or reduce water consumption.

Typically, a Demand Management Plan will include a range of management measures, including:

- cost-reflective pricing;
- universal customer metering in order to implement pricing measures;
- operational measures, such as reticulation leakage detection and repair programs and pressure reduction;
- a communication strategy, including a community education campaign;
- customer advisory services;
- incentives for installation of water efficient equipment and landscapes and retrofitting of water efficient equipment;
- reduction of water use by the water utility itself;
- regulation of the efficiency of water using appliances, especially in new buildings and for garden watering;
- use of reclaimed water to reduce the need for fresh water supplies;
- water use restrictions, either on a temporary or permanent basis.

4.2 Existing Water Conservation Initiatives

Singleton Council has a number of water conservation initiatives currently in place, including:

- Progressive development and implementation of an appropriate pricing policy aimed at achieving 75% of revenue via usage charges.
- Participation in water use efficiency programs including rebates on the installation of dual flush toilets and rainwater tanks.
- Active participation in the “Savewater” program.
- Implementation of a water loss program.
- Supply of water conservation material to ratepayers via brochures, newsletters, rate notices, a dedicated website and purpose specific advertising.
- Implementation of water restrictions, as required.

4.3 Water Consumption Profile

Total water consumption in Singleton in 2013/14 was 2,591ML. Water use per household was 1,010 litres per day or 374 litres per person.

The population of Singleton LGA was 23,469 people. Population increases between 2001 and 2014 averaged 1.75% but slowed to an estimated 1.1 % in tandem with the local economy, particular mining.

Average water losses are 13% of the total water treated at the water treatment plant. Unaccounted for water (UFW) includes unbilled authorised consumption, unauthorised consumption, apparent losses and real losses.

Peak day usage in 2013/14 was 2.3 times average day usage, which is comparable to that of similar regional centres.

4.4 Demand Drivers

Established in 1821 by European settlers on the banks of the Hunter River, Singleton grew as a centre for the surrounding agricultural area. Significant change occurred in the mid 1970's with the development of large coal mines which lead to a rapid rise in population.

Key demand drivers for water include change in population, demographics, seasonal factors, consumer preferences and expectations, economic factors, agricultural practices, mining growth rate, environmental awareness, water supply related regulation, climate change and prevailing weather patterns (i.e. drought/rain)etc.

The Singleton Water Conservation Strategy developed in 2010 to assist water demand management addresses:

- General concepts of water conservation and demand management
- Modelling of a range of demand management scenarios specific to the current water consumption patterns in Singleton (using the Department of Water and Energy's (now the NSW Office of Water) *Demand Side Management Decision Support System Software* (Version S1.1), 2006) to model the demands and to derive a ranking of the options tested
- The links to issues identified in Council's *Integrated Water Cycle Management Plan*
- Current water conservation initiatives and their impacts as implemented by Council

4.5 Demand Projections

Key Demand Factor 1: Water consumption

Since 1996, water consumption in Singleton has reduced substantially. The average historic water consumption for the period 1996 – 2008 was 2,958 ML/year.

Water consumption dropped markedly, despite population increases to an average of 2,513 ML/year during the high rainfall period between 2009 and 2011. An increase of 11% was recorded for 2012 which saw the return to drier conditions.

Table 4.5.1 Average Annual Water Consumption (ML/year)

| Annual Average Water Consumption (ML/year) | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Year | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | | |
| Historical (actual) | 2,719 | 3,136 | 2,779 | 2,313 | 2,587 | 2,399 | 2,554 | 2,814 | 3,010 | | |
| Year | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2025 | 2030 | 2035 | 2040 |
| Baseline Forecast | 3,077 | 3,102 | 3,127 | 3,152 | 3,177 | 3,202 | 3,228 | 3,359 | 3,496 | 3,638 | 3,786 |

Table 4.5.2 Average Annual Water Consumption (ML/year) actual vs model

| Year | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Historical | 2,719 | 3,136 | 2,779 | 2,313 | 2,587 | 2,399 | 2,554 | 2,814 | 3,010 |
| Baseline Forecast 2010 Modelling | | | | | | 2,981 | 3,005 | 3,029 | 3,053 |

Table 4.5.2 shows that actual water consumption was 20%, 15% and 8% lower than predicted in the 2010 Water demand modelling for 2010, 2011 and 2012 respectively. This indicates that prevailing weather conditions and successful water demand management measures are key drivers for sustainable water demand management

Key Demand Factor 2: Population numbers and demographics

Population increases of between 1.5 and 2.0% annually were recorded for Singleton LGA until the mining downturn in 2010/11. Despite the decrease of residents from 23,458 people in 2008 to 22,694 recorded in the 2011 census, population growth is estimated to grow by 1.1% annually as the mining industry recovers as the ABS Population estimates, revised in August 2013, show. (Table 4.5.3)

Table 4.5.3 Estimate Resident Population, Singleton Local Government Area

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012r |
|------------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| Population | 21 066 | 21 356 | 21 671 | 21 886 | 22 54 | 22 535 | 22 663 | 22 860 | 23 063 | 23 335 | 23 523 | 23 785 |

Using the 2011 census population figures and the resulting average annual percentage increase of 1.1%, the population forecasts given in Table 4.5.4 have been derived.

Table 4.5.4 Population Projections

| Location | 2006 Census | 2008 Estimate | 2011 Census | 2015 Estimate | 2020 Estimate | 2025 Estimate | 2030 Estimate | 2035 Estimate | 2040 Estimate |
|-------------------|----------------|------------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Singleton LGA | 21,936 | 23,458 | 22,694 | 23,615 | 24,820 | 26,086 | 27,417 | 28,815 | 30,285 |
| Singleton Town | 13,664 | 14,160 | 13,914 | 14,479 | 15,218 | 15,994 | 16,810 | 17,667 | 18,568 |

4.6 Demand Forecast

At the 2011 Census, Singleton had 9,044 occupied private dwellings and an average occupancy rate of 2.7 persons per dwelling. Using the 2011 occupancy rate as a guide it would be expected that almost all future growth will be in the urban and rural residential areas.

Table 4.6.1 shows the age demographics of Singleton LGA based on 2011 Census figures. The comparisons between the 2001 and 2011 data shows a slight increase in the age of residents, however 67.5% remain in the workforce age brackets (15 to 64 years of age).

Table 4.6.1 Age Demographics for the Singleton Local Government Area

| | Age Bracket in % of total population | | | | | | | |
|---------------------------------|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 0 – 14 | 15 – 24 | 25 – 34 | 35 – 44 | 45 – 54 | 55 – 64 | 65 – 74 | 75 + |
| 2001 Census (% of Total) | 24.76 | 13.74 | 14.33 | 16.31 | 14.10 | 7.65 | 5.15 | 3.96 |
| 2006 Census (% of Total) | 24.44 | 13.27 | 14.32 | 14.33 | 14.20 | 9.98 | 5.07 | 4.39 |
| 2011 Census (% of Total) | 22.2 | 14.5 | 12.8 | 14.9 | 14.4 | 10.9 | 5.8 | 4.5 |
| Percent Change 01 – 11 | - 2.56% | + 0.76% | - 1.53% | - 1.41% | + 0.30% | + 3.25% | + 0.65% | + 0.54% |

This is reflected in Singleton employment rates which are higher for full time work and lower for unemployment than those for Australia and New South Wales and driven by mining in the area. (Table 4.6.2)

Table 4.6.2 Employment People who reported being in the labour force, aged 15 years and over -

| Employment | Singleton % | New South Wales % | Australia % |
|-------------------------|-------------|-------------------|-------------|
| Worked full-time | 65 | 60.2 | 59.7 |
| Worked part-time | 25.4 | 28.2 | 28.7 |
| Away from work | 6.3 | 5.7 | 5.9 |
| Unemployed | 3.3 | 5.9 | 5.6 |

4.7 Demand Impact on Assets

It is expected that there will be a significant increase in demand for water supply facilities and services, including for connection of existing dwellings to the town water supply.

The impact of demand drivers that may affect future service delivery and utilisation of assets are shown in Table 4.7.1

Table 4.7.1 Demand Factors, Projections and Impacts on Services

| Demand factor | Present position (2011 Census) | Projection | Impact on services |
|--|---|--|--|
| Population growth | 22,697 | Growth of 1.1% per annum | Additional Demand |
| Demographic changes | Younger than NSW average | A shift to an older average | Usage changes |
| Legislation Changes | <ul style="list-style-type: none"> Possible Government drive to amalgamate local council water utilities | Disruption to current council services and procedures | Increased cost to customers and/or reduced services |
| Increased customer expectations | <ul style="list-style-type: none"> A total of 2,598 dwellings (28%) are currently not connected to the potable supply | <ul style="list-style-type: none"> Increased demand from existing residents for connection to Water Supply New development, including in rural residential estates expect connection to potable water supply | Increased cost of water connections and delivery infrastructure. |
| Prevailing weather patterns | <ul style="list-style-type: none"> Water demand has reduced over time but is always highest during dry conditions. The absence or presence of rainfall will impact significantly on water consumption, both for personal and garden use. Commercial customers' water demand is also under dry conditions. | <p>2008 to early 2012 have seen some of the wettest conditions in decades. Drier weather ensued in late 2012 and 2013 leading to increases in water consumption.</p> <p>Water demand modelling is to be adjusted to account for dry and wet weather scenarios.</p> | Fluctuating demand. Significant increases can be expected if drought conditions re-emerge. |

Projections are based on the 2011 Census, Customer surveys/requests, Development data and outcomes of the 2010 Water Demand Model contained in the Singleton Water Conservation Strategy and Demand Management Modelling, 2010 DLM Environmental Consultants Pty Ltd.

Demand modelling indicates that the annual increases in new and existing dwellings connected to the potable water supply will be between 3 and 4% annually.

Impact on services should remain low due to developer contributions for new developments and expansion of the supply network as a result of these new developments. As the water supply network expands opportunities arise for first time connection of nearby existing dwellings.

4.8 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on reducing demand for water service, appropriate pricing structures for developer contributions, educating customers of the value of water and need to conserve a vital resource. Examples of non-asset solutions include also transferring some of the Council's current water service provision for gardens to newly installed (under BASIX) rainwater tanks as part of new dwelling construction.

Opportunities identified to date for demand management are shown in Table 4.8.1

Table 4.8.1 Demand Management Initiatives

| Demand Driver | Impact on Services | Demand Management Plan |
|---|-------------------------------------|---|
| New Developments | Reduced Water Demand | Provision of rainwater tanks for new dwellings |
| All Dwellings | Reduced Water Demand | Encourage (Subsidise) installation of water efficient devices in dwellings |
| Population growth & demographic changes | Reduced Water Demand | <ul style="list-style-type: none"> Education and awareness programs Progressive development and implementation of an appropriate pricing policy aimed at achieving 75% of revenue via usage charges. Participation in water use efficiency programs including rebates on the installation of dual flush toilets and rainwater tanks. |
| Weather conditions | Potential increases in Water Demand | <ul style="list-style-type: none"> Implementation of a water loss program. Implementation of water restrictions, as required. |
| Water loss | Increase in water usage | <ul style="list-style-type: none"> Leak detection and water loss correction program implementation Theft prevention program |

Council's water demand reduction goals set by the Water Conservation Strategy 2010 have been achieved in 2011 and 2012. Per capita water demand was significantly lower than that projected by per capita water demand modelling conducted in 2010 using four different growth and usage scenarios.

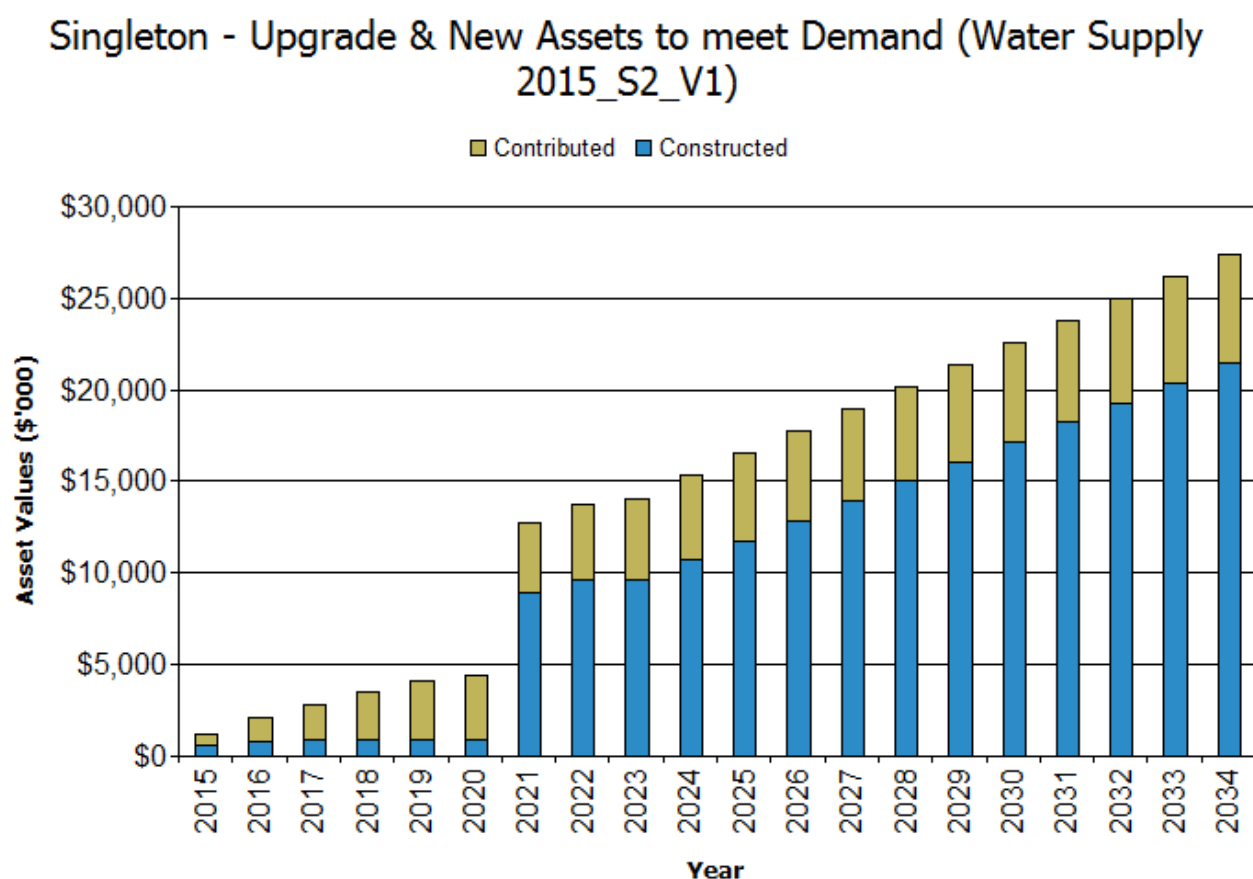
However, there are significant incidents of water theft which require further attention and targeted theft reduction programs.

4.9 Asset Programs to Meet Demand

The new assets required to meet growth will either be acquired free of cost from land developments (most cases) or funded by Section 64 contribution plans and constructed by the Council or its nominated contractor. New assets constructed/acquired by the organisation are discussed in Section 5.5. The cumulative value of new contributed and constructed asset values are summarised in Section 6 Financial Summary (Projected Financial Results – Water Supply).

Acquiring these new assets will commit the organisation to fund ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and fully allowed for in the planning document, Singleton Council – Financial Plan for Water Supply and Sewerage Services. In particular, there is full financial provision for maintenance and renewal costs of these new assets. (Figure 4.9.1)

Figure 1 Upgrade and New Assets to meet Demand (Scenario 2)



Council's current Obanvale 30ML/day Filtration Water Treatment Plant (WTP) has significant redundant capacity to serve the population for at least another 20 years if maintained appropriately. The spike in 2021 is due to a proposed upgrade to the WTP for water quality improvements (GAC Plant).

The plant has the capacity to treat 10,950 ML/year and is currently treating just 26.7 % of that or 2,950ML/year. Water main replacement and new water mains, pump stations and supporting infrastructure require the bulk of budgeted funding during the next 30 years. Developer contributions are a significant funding source for additional water supply infrastructure in new developments. The future costs of ongoing operations, maintenance and later renewal of new infrastructure will be borne by Council and is factored into development of future budgets discussed in Section 5.

4.10 Summary Assessment – Security of Supply

Water entitlements

Singleton has a total Town Water Entitlement of 5,032 ML/year for Singleton and 32 ML/year for Jerry's Plains. This raw water is supplied to Council's 30ML/day filtration Water Treatment Plant from Glennies Creek Dam, a 283 gigalitre storage on Glennies Creek, a tributary stream of the Hunter River. This supply alone is sufficient to supply the current and projected future residents of Singleton beyond 2039 (Water Conservation Strategy and Demand Management Modelling, DLM Environmental Consultants Pty Ltd 2010). Even in the unlikely event of cuts to allocations from Glennies Creek Dam, as a result of any severe drought, Council has sufficient available supply beyond 2039 for the projected growth rates outlined in this Plan. Currently unused groundwater entitlements of 4,050 ML/year and an additional three existing (currently unused) wells with a combined capacity of 1.3ML/day are available for ready deployment to supplement supply, if necessary.

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the organisation plans to manage and operate the assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

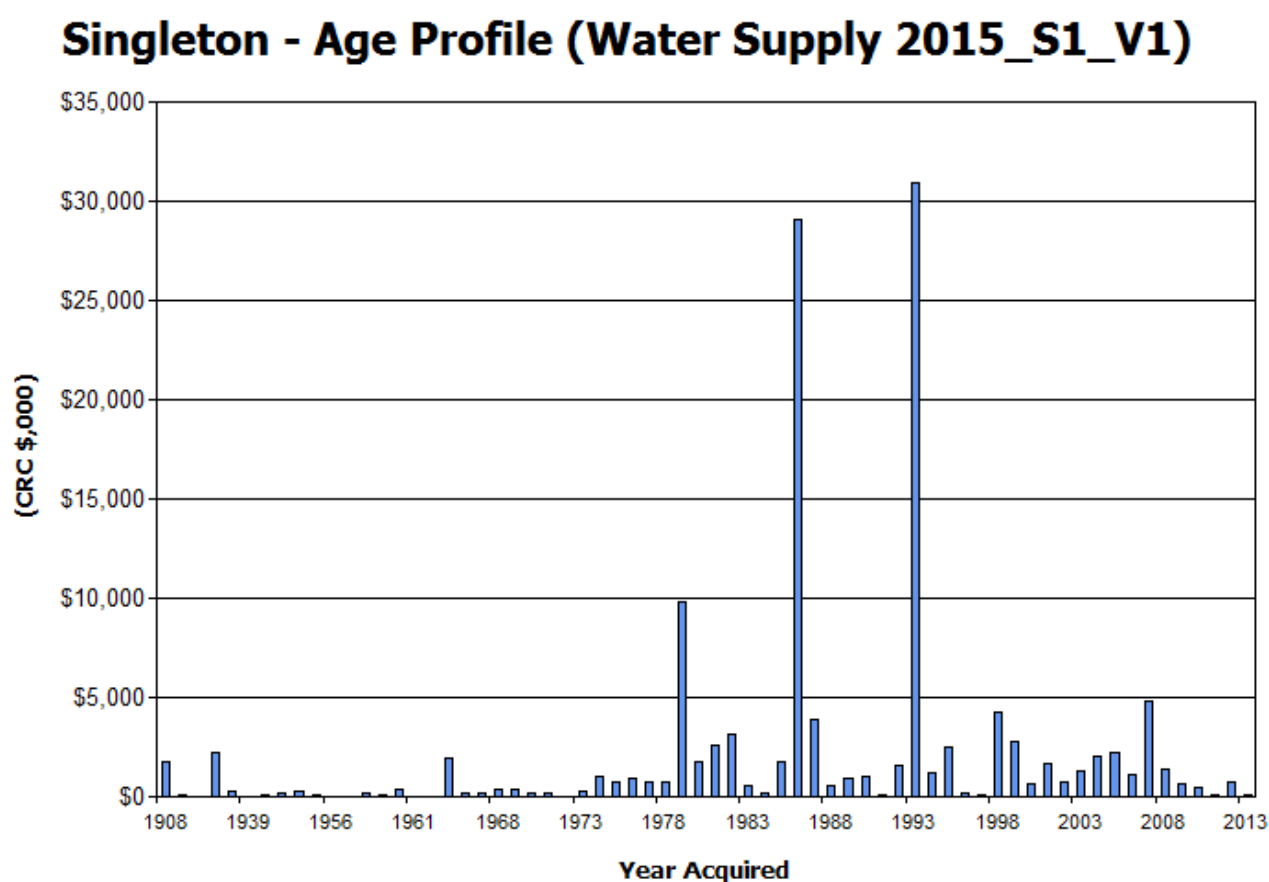
5.1 Background Data

5.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

The age profile of the assets include in this AM Plan is shown in Figure 2.

Figure 2: Asset Age Profile



Plans showing the Water assets are stored electronically in Council's comprehensive MapInfo GIS system.

5.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.1: Known Service Performance Deficiencies

| Location | Service Deficiency |
|----------------------------|---|
| Singleton Council Water | Employee staffing ratios below the figure of Top 20% performing Water Suppliers. Analysis indicates that Council's internal resources are below the state average, and are not adequate |

| Location | Service Deficiency |
|------------------------|---|
| Supply | to provide the level of service required. Council must increase in-house staffing and equipment resources. |
| Renewals expenditure | No water asset renewals were undertaken in the 2013-14 financial year. Council must focus on renewing aging water supply infrastructure before failure occurs. |
| Singleton Water Assets | Ageing Cast Iron Mains dating to 1908, one service reservoir approaching its design life |
| Non-potable water | Council currently supplies non-potable water to the villages of Bridgeman, Mount Olive, Obanvale, St Clair and Wattle Ponds. Council is considering plans to implement minimum treatments to these non-potable water supplies so that they are accordance with the NSW Department of Health standards. Presently Council may not be meeting the needs of these communities. |

The above service deficiencies were identified from the *Singleton Council Water Supply and Sewerage Service Strategic Business Plan* July 2014, routine maintenance inspections and NSW Office of Water TBL Water Supply Performance Report.

5.1.3 Asset condition

Condition is monitored through failure statistics, selected dig up and inspect (rare) and annual inspections of above ground facilities.

The condition profile of water supply assets is shown in Table 5.1.3.

Table 5.1.2: Asset Condition Profile

| Asset Class | Asset Type | Condition Grade | Current Replacement Cost Total |
|------------------------|---------------------------|-----------------|--------------------------------|
| Water Mains | Reticulation | 1 | \$56,684,337 |
| | | 4 | \$5,459,125 |
| | | 5 | \$67,957 |
| | Trunk | 1 | \$27,036,050 |
| Water Pumping Stations | Distribution | 1 | \$1,085,012 |
| | | 2 | \$214,875 |
| | | 3 | \$717,212 |
| | | 4 | \$25,890 |
| Water Reservoirs | Concrete | 1 | \$2,230,000 |
| | | 2 | \$1,220,000 |
| | | 5 | \$44,515 |
| | Standpipe | 1 | \$1,630,000 |
| | Steel | 1 | \$6,878 |
| | | 2 | \$2,840,000 |
| | Valve | 1 | \$150,077 |
| Water Treatment Works | Chlorine room | 1 | \$184,687 |
| | Conventional | 1 | \$30,000,000 |
| | PAC Plant | 1 | \$133,402 |
| | Permanganate room | 1 | \$55,458 |
| | Water chlorinators | 1 | \$399,000 |
| | Water fluoridation plants | 1 | \$225,000 |
| Ancillary | Monitoring | 1 | \$276,900 |
| Total | | | \$130,686,375 |

Condition is measured using a 1 – 5 grading system⁵ as detailed in Table 5.1.4.

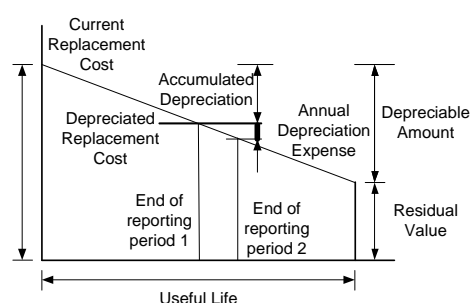
Table 5.1.3: Simple Condition Grading Model

| Condition Grading | Description of Condition |
|-------------------|---|
| 1 | Very Good: only planned maintenance required |
| 2 | Good: minor maintenance required plus planned maintenance |
| 3 | Fair: significant maintenance required |
| 4 | Poor: significant renewal/rehabilitation required |
| 5 | Very Poor: physically unsound and/or beyond rehabilitation |

5.1.4 Asset valuations

The value of assets recorded in the asset register as at 30 June 2014 covered by this asset management plan is shown below. Assets were last revalued at June 2015. Assets are valued in accordance with “Fair Valuation” principles and the *NSW Reference Rates Manual Valuation of water supply, sewerage and stormwater assets* (2014).

| | |
|---|---------------|
| Current Replacement Cost | \$130,000,000 |
| Depreciable Amount | \$121,700,000 |
| Depreciated Replacement Cost ⁶ | \$83,000,000 |
| Annual Depreciation Expense | \$1,800,000 |



Useful lives are as recommended for use in the water industry by the NSW Office of Water.

Key assumptions made in preparing the valuations were:

- Construction dates historically recorded are accurate
- Useful lives are appropriate given the excellent condition of many Singleton assets
- Condition grades attributed to assets are correct

Major changes from previous valuations are due to an objective application of the NSW reference rates by a third party, following the collation of all the best available asset register data.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Table 5.1.4 Asset Consumption and Expenditure Ratios

| Asset Consumption and Expenditure Ratios | Scenario 1 | Scenario 2 | Scenario 3 |
|---|------------|------------|------------|
| Rate of Annual Asset Consumption(Depreciation/Depreciable Amount) | 1.5% | 1.5% | 1.5% |
| Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount) | 1.2% | 1.2% | 1.2% |
| Rate of Annual Asset Upgrade (Capital upgrade exp./Depreciable Amount) | 0.5% | 0.5% | 0.8% |
| Rate of Annual Asset Upgrade (Capital upgrade exp./Depreciable Amount) including contributed assets | 1% | 1% | 1.3% |

⁵ IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

⁶ Also reported as Written Down Current Replacement Cost (WDCRC).

| Asset Consumption and Expenditure Ratios | Scenario 1 | Scenario 2 | Scenario 3 |
|---|------------|------------|------------|
| Asset renewals as a percentage of consumption | 80.1% | 80.1% | 80.1% |
| Percentage increase in asset stock | 1% | 1% | 1.3% |

In 2015 the organisation plans to renew assets at 80.1% of the rate they are being consumed and will be increasing its asset stock by 1% during the year.

5.1.5 Historical Data

Historical data is available through the BIZEASSET and NAMS asset register, including entries for new assets constructed in the current financial year, and the approved annual capital works budgets.

5.2 Enterprise Risk Management Plan

An assessment of risks⁷ associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation.

Singleton Council has determined that a whole of organisation approach to risk management (i.e. Enterprise Risk Management Program) is required to effectively and efficiently manage the potential risks faced by Council due to the nature of our operations. This approach will also encourage a better appreciation of the opportunities identified via this process that will assist in the achievement of objectives and sustainability for the future of Council.

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks. The risk matrix adopted by Council is as follows:

Table 5.2.1 Water Supply - Risk Assessment

| | | Consequence | | | | |
|------------|----------------|---------------|--------|----------|---------|--------------|
| | | Insignificant | Minor | Moderate | Major | Catastrophic |
| Likelihood | Almost Certain | Medium | High | High | Extreme | Extreme |
| | Likely | Medium | Medium | High | High | Extreme |
| | Possible | Low | Medium | High | High | High |
| | Unlikely | Low | Low | Medium | Medium | High |
| | Rare | Low | Low | Medium | Medium | High |

Corrective action for the different Level of Risk ratings has been agreed as follows:

| Risk Level | Action Required |
|----------------|--|
| Extreme | <ul style="list-style-type: none"> This risk level is Unacceptable Report immediately to Executive Leadership Team; regular internal reporting required Develop specific Treatment Plan for immediate implementation to address the Extreme risks Allocate actions and budget for implementation within one month |
| High | <ul style="list-style-type: none"> Develop and implement a specific Treatment Plan for high risks |

⁷ Singleton Council Enterprise Risk Management Plan 2013 (Doc No.13/3798)

| Risk Level | Action Required |
|------------|--|
| | <ul style="list-style-type: none"> Allocate actions and budget to minimise risk; monitor implementation Report to Executive Leadership Team within one month; regular internal reporting required |
| Medium | <ul style="list-style-type: none"> Develop and implement a specific Treatment Plan for medium risks Allocate actions and budget to minimise risk where existing controls deemed inadequate; monitor implementation Report to Executive Leadership Team within the quarter; Management to consider additional controls; report within the quarter |
| Low | <ul style="list-style-type: none"> Accept and Monitor low-priority risks Manage via routine procedures where possible; Monitor via normal internal reporting mechanisms |

Council staff must ensure that risks that are rated High or Extreme are referred to the appropriate management level to determine the appropriate treatments/controls required to manage control or mitigate the risk.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Enterprise Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational will be summarised in Table 5.2.2. These risks will be reported to management and Council. A summary from an updated October 2013 Enterprise Risk Assessment is provided in Appendix H

5.3 Infrastructure Risk Management Plan

The Infrastructure Risk Management Plan based on the NAMS system includes a specific risk assessment framework which is used in addition to the corporate Enterprise Risk Assessment Plan to ensure minor as well as strategic corporate risks are captured and their implication considered. However the process is similar and again includes an assessment of risks associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' – requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the infrastructure Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational are summarised in Table 5.2.2 These risks are reported to management and Council.

Table 5.2.2 Critical Risks and Treatment Plans

| Service or Asset at Risk | What can Happen | Risk Rating (VH, H) | Risk Treatment Plan | Residual Risk * | Treatment Costs \$ range** |
|--------------------------------------|------------------------------------|---------------------|--|-----------------|----------------------------|
| Water Supply pump stations | Breakdown (loss of supply) | H | Preventive maintenance schedule, performance monitoring (incl telemetry), renewal program, provision of standby installations or key spare components, lightning protection, upgraded switchboards | M | 10,000 - <500,000 |
| Water Treatment Plant & disinfection | Inadequate water treatment process | VH | Operational Performance monitoring, preventive maintenance schedule, provision of standby installations of key component spares, remote real time | M | 5,000 to >1,500,000 |

| Service or Asset at Risk | What can Happen | Risk Rating (VH, H) | Risk Treatment Plan | Residual Risk * | Treatment Costs \$ range** |
|--|---|---------------------|--|-----------------|----------------------------|
| process | undertaken | | monitoring, training program for operational staff. | | |
| Water Supply Reticulation | Significant water loss, contamination, lack of fire-fighting supply | H | Pipe renewal program, proactive maintenance of valves, implementation of metering on-going, pressure reduction program, water loss monitoring (via metered consumption), operational performance monitoring (chlorine residual disinfection checks), scouring program, enforced backflow prevention policy – (compliance program to be implemented from 2014), pipe capacity upgrades, proactive maintenance of hydrants, pipe repair/maintenance procedures, telemetry performance checks | M | 1,000 – >1,500,000 |
| Water Storage Reservoirs | Contamination of supply | VH | Regular inspection for contamination sources, maintenance of roof and barrier measures, cleaning program | M | 10,000 - >2,000,000 |
| Water Storage Dam (not Council responsibility cooperation with dam operator) | Contamination of supply, failure of structure, depletion | VH | Raw water monitoring program, (enhanced aeration in storage) routine monitoring for algal outbreaks, implement catchment management principles as per plan, drought management restrictions, trigger points in drought management as per plan, water conservation programs on-going. | M | |

Note * The residual risk is the risk remaining after the selected risk treatment plan is operational.

**Treatment costs vary depending on the nature/extend of issues and may escalate if liability for other parties arises from an asset failure (i.e. water main break stopping rail traffic etc.)

5.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services such as water treatment and routine and unplanned maintenance, e.g. water service repairs.

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

5.3.1 Operations and Maintenance Plan

Operations activities affect service levels including quality and function through such activities as water treatment activities, visit, check, and record at various operating locations in the system such as chlorination plants and pump stations.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating, e.g. main repairs but excluding rehabilitation or renewal. Maintenance may be classified into reactive, planned and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests by customers and management /supervisory directions.

Planned maintenance is repair work that is identified and managed. Planned maintenance activities include 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.

Specific maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacing air conditioning units, etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

Actual past maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure Trends

| Maintenance Expenditure | |
|-------------------------|-----------|
| Planned and Specific | Unplanned |
| 40% | 60% |

Planned maintenance work is currently 40% of total maintenance expenditure.

Maintenance expenditure levels are considered to be adequate to meet planned service levels, which may be less than or equal to current service levels. Where maintenance expenditure levels are such that will result in a lesser level of service, the service consequences and service risks have been identified and service consequences highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience and judgement.

5.3.2 Operations and Maintenance Strategies

Singleton Council Water Supply Services will operate and maintain assets to the Council adopted level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities include:-

- Scheduling operations activities to deliver the defined level of service in the most efficient manner,

- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes. Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost),
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council (Under Development)
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs,
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options,
- Maintain a current hierarchy of critical assets and required operations and maintenance activities,
- Regularly review the current Council adopted emergency management and response plan. Make changes as necessary to increase efficiency and effectiveness of the plan,
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

Asset hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for service planning and delivery.

The principles outlined in the International Infrastructure Management Manual (International Edition 2006) and the Australian Infrastructure Financial Management Guidelines (Version 1.0, 2009) have been used to ensure best practice standards. Council's service hierarchy is shown in Table 5.3.2.

Table 5.3.2: Asset Service Hierarchy

| Hierarchy Category | Asset Class | Infrastructure Asset |
|---------------------|--------------------------------|-----------------------------------|
| Water Supply | Water Main | Reticulation Pipe – Treated Water |
| | Water Main | Trunk Mains – Raw Water |
| | Water Main | Trunk Mains – Treated Water |
| | Water Treatment Plant | Individual assets |
| | Telemetry | Individual assets |
| Water Supply | Water Reservoirs & Stand Pipes | Individual assets |
| | Booster pump stations | Individual assets |
| | Lagoons | Individual assets |
| | Re-chlorination dosing plants | Individual assets |

Critical Assets

Critical assets are those assets which have a high consequence of failure but not necessarily a high likelihood of failure. By identifying critical assets and critical failure modes, organisations can target and refine investigative activities, maintenance plans and capital expenditure plans at the appropriate time.

Operations and maintenances activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities are detailed in Table 5.3.2.1.

Table 5.3.3: Critical Assets and Service Level Objectives

| Critical Assets | Critical Failure Mode | Operations & Maintenance Activities |
|-----------------------------------|--------------------------------------|---|
| Water Treatment Plant | Sustained Power Failure | Bypass plant, supply chlorinated water only |
| Water Treatment Plant | Telemetry and Control Failure | Utilise operating guidelines and call out schedules |
| Major Control Valve 1 | Failure to operate | Utilise operating guidelines and call out schedules |
| Water Treatment Plant | Flow Proportioning inlet valve fails | Utilise Operating Guidelines, keep to planned replacement schedule (20 years) |
| Raw Water Main to Treatment Plant | 600mm main burst | Utilise operating guidelines and call out schedules |

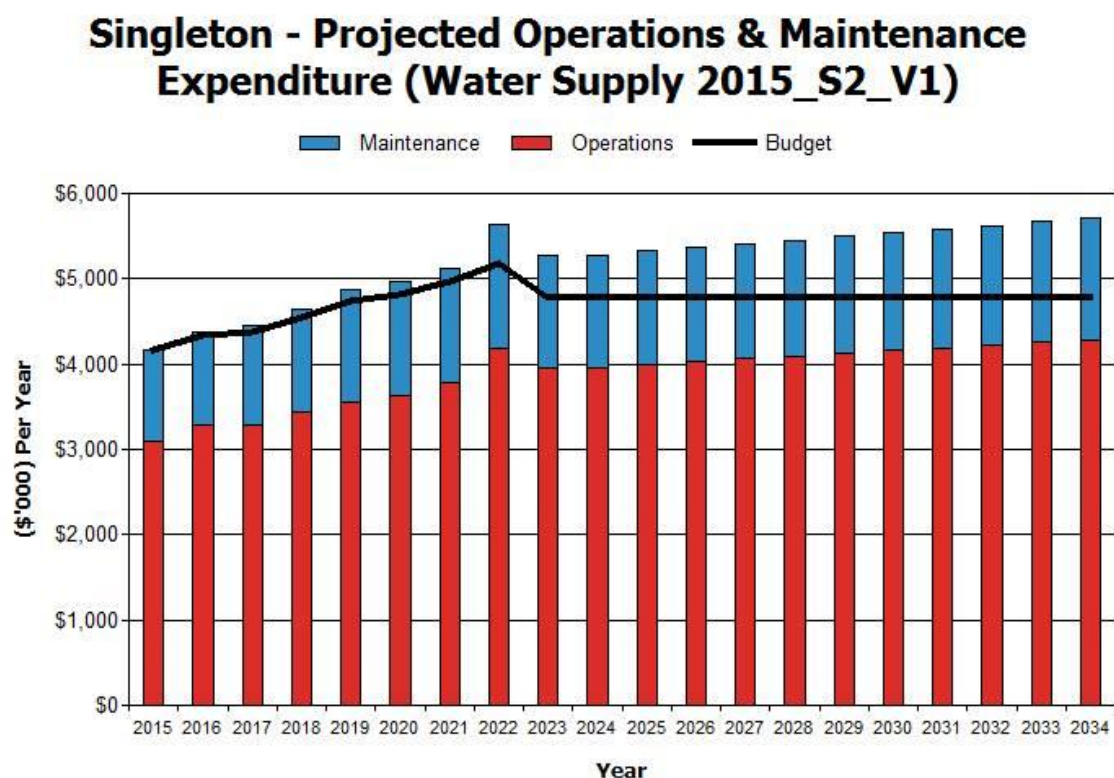
5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the projections developed and identified in the Long Term Financial Model for Water and financial and asset modelling. Operation and Maintenance expenditure also targets high cost infrastructure to ensure assets remain in very good condition and 'Useful life' is maintained and extended to the maximum possible. Full details are provided in the following referenced publications;

- Singleton Council – Financial Plan for Water and Sewerage Services – September 2014 including the amendment rolling the financial figures over to the 2014/15 and 2012/13 Financial Years
- Singleton Council – Water Supply and Sewerage Services – Strategic Business Plan – July 2014
- Singleton Council – 10 Year Asset Renewal Summary for Water Supply and Sewerage Services – October 2014

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2015 dollar values (i.e. real values).

Figure 4: Projected Operations and Maintenance Expenditure



Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the infrastructure risk management plan.

Maintenance is funded from the operating budget where available. This is further discussed in Section 6.2.

5.4 Renewal/Replacement Plan

Renewal and replacement expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original or lesser required service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new works expenditure.

5.4.1 Renewal plan

Assets requiring renewal are identified comparing 3 Scenarios.

- Scenario 1 uses the Asset Register valuation data to project the renewal costs for renewal years using the acquisition year and useful life, or
- Scenario 2 was prepared using the technical estimates of what renewal is required to sustain the current levels of service. This comprised the current 10 year renewals program plus individual projects to improve functionality and capacity issues.
- Scenario 3 balances capital renewal expenditure with the Long Term Financial Plan.

Scenario 1 indicates that the funds to meet the forecast renewal requirements are generally aligned with funding in the LTFP except for high cost infrastructure replacement at the Water Treatment Plant forecast in 2021. The majority of renewal expenditure is due to the expiry of 'useful life' for water mains which are still in very good condition. Indications are water mains may have a much longer "useful life" than that assigned by standard valuations. A condition assessment program will improve the accuracy of "useful life" estimates for this infrastructure.

Scenario 2 is prepared using the technical estimates of what renewal is required to sustain the current levels of service. Scenario 3 is a reflection of the actual funding available. The difference between Scenario 2 and Scenario 3 represents “what we can’t do”.

Scenario 2 and 3 model predictions are generally aligned and the minor gap between allocated renewal funding and predicted funding requirements is not sufficient to increase funding.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. They are as recommended for use in current Water Industry by NSW Office of Water publications.

Table 5.4.1: Useful Lives of Assets

| Asset (Sub)Category | Useful life |
|-------------------------------------|-------------|
| Mains | 80 |
| Reservoir Structural/Civil | 100 |
| Treatment Plant- Civil | 70 |
| Treatment Plant- Electrical | 25 |
| Treatment Plant - Mechanical | 30 |
| Treatment Plant -Telemetry | 15 |
| Pump Station - Civil | 80 |
| Pump Station - Electrical | 25 |
| Pump Station - Mechanical | 30 |
| Telemetry and process control works | 15 |

5.4.2 Renewal and Replacement Strategies

The organisation will plan capital renewal and replacement projects to meet level of service objectives and minimise infrastructure service risks by:

- Planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner,
- Undertaking project scoping for all capital renewal and replacement projects to identify:
 - the service delivery ‘deficiency’, present risk and optimum time for renewal/replacement,
 - the project objectives to rectify the deficiency,
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency,
 - and evaluate the options against evaluation criteria adopted by the organisation, and
 - select the best option to be included in capital renewal programs,
- Using ‘low cost’ renewal methods (cost of renewal is less than replacement) wherever possible,
- Maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council,
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs,
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required ,
- Review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:-

- Ensure the reliability of the existing infrastructure to deliver the service without unacceptable failures. (e.g. replace a water main with a history of breakages resulting in unacceptable service outages)

- To ensure the infrastructure is of sufficient quality to meet the service requirements).⁸ (e.g. replace a pump which has worn to the extent that it is not delivering acceptable capacity for the designed application)

It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have a high utilisation and subsequent impact on users would be greatest,
- The total value represents the greatest net value to the organisation,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Where replacement with modern equivalent assets would yield material savings.⁹

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5.4.2.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

| Criteria | Weighting |
|---|-------------|
| High Consequence of Failure | 10 |
| Design Life Reached | 30 |
| Unacceptable Failure statistics | 50 |
| Does not meet modern day design standards | 5 |
| Material | 5 |
| Total | 100% |

Renewal and replacement standards

Renewal work is carried out in accordance with the following Standards and Specifications.

- AS 3500
- Councils adopted standards for design and construction of Water Supply and Sewerage Works
- NSW Code of Practice for Plumbing and Drainage
- AUS-SPEC D11 & C401
- Electrical and Mechanical standards as appropriate
- Development Design Specifications D11 Water Reticulation

5.4.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5. Note that all amounts are shown in real values.

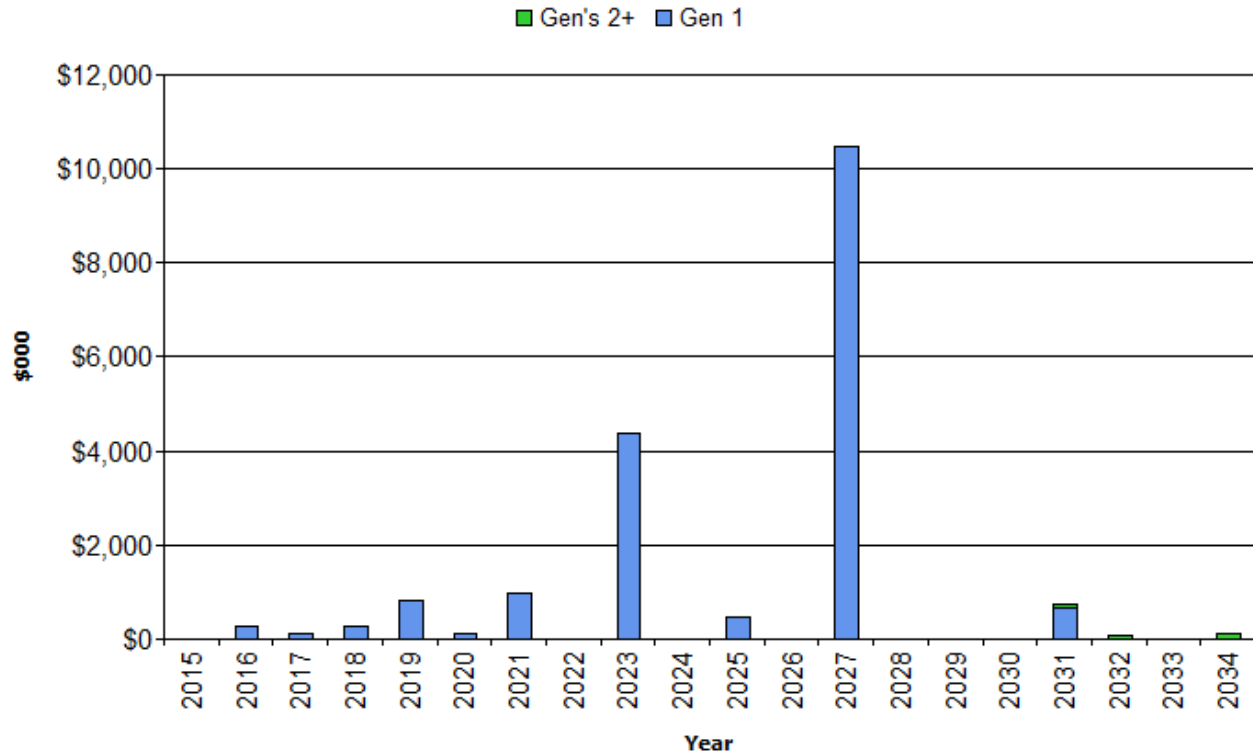
The projected capital renewal and replacement program is shown in Appendix B.

⁸ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

⁹ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

Fig 5:1 Projected Capital Renewal and Replacement Expenditure (Scenario 1)

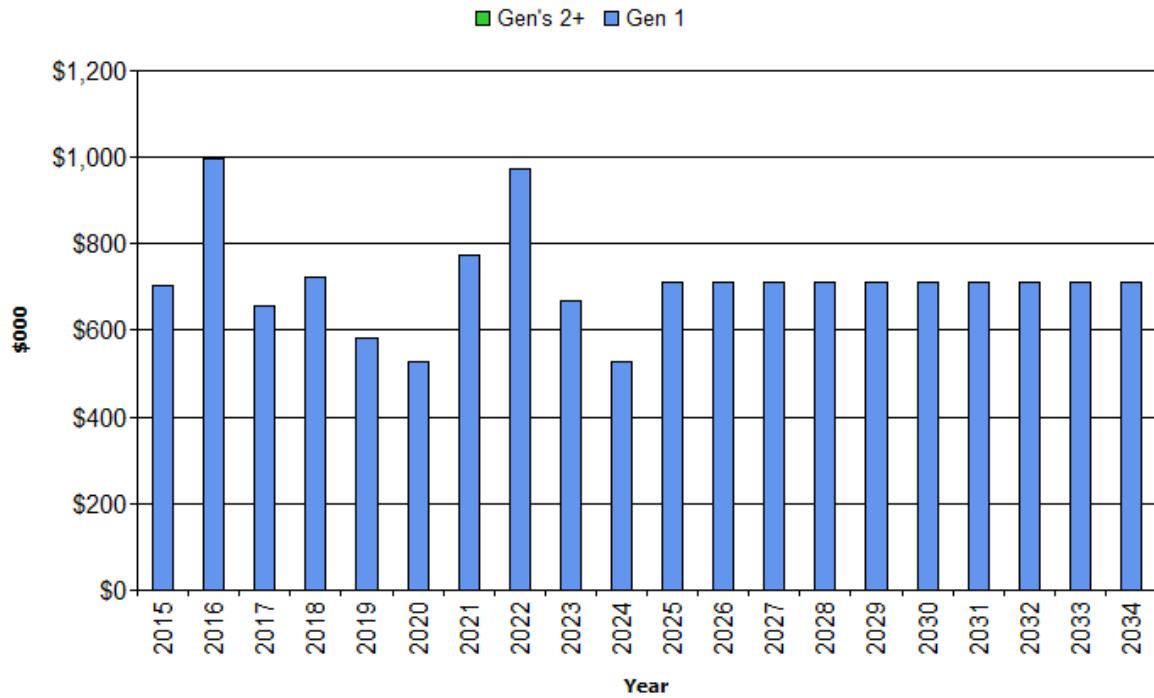
Singleton - Projected Capital Renewal Expenditure (Water Supply 2015_S1_V1)



Scenario 1 shows a significant spike in 2027 when a number of assets appear to reach end of useful life.

Fig 5:2 Projected Capital Renewal and Replacement Expenditure (Scenario 2)

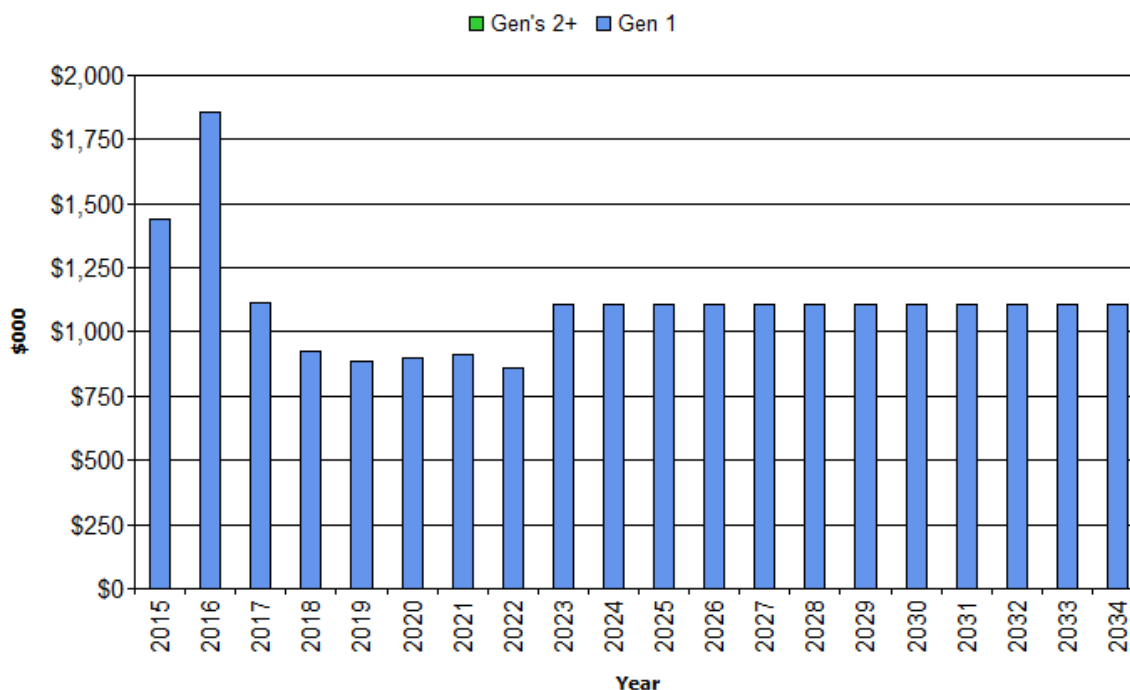
Singleton - Projected Capital Renewal Expenditure (Water Supply 2015_S2_V1)



Scenario 2 spreads the renewal burden out and is based on renewal needs known to staff.

Fig 5:3 Projected Capital Renewal and Replacement Expenditure (Scenario 3)

Singleton - Projected Capital Renewal Expenditure (Water Supply 2015_S3_V1)



Scenario 3 aligns with the funding provisions of Council's long term financial plan.

Deferred renewal and replacement, i.e. those assets identified for renewal and/or replacement and not scheduled in capital works programs are to be included in the risk analysis process in the risk management plan.

Renewals and replacement expenditure in the organisation's capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the organisation from land development. These assets from growth are considered in Section 4.4.

5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, servicing requirements for new developments, proposed improvements to level of service provided, proposals identified by strategic plans, Developer Control and Contribution plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes.

There are specific types of Capital works in the Water Supply, which are subject to somewhat different ranking criteria.

The generalised priority ranking criteria is detailed below.

Table 5.5.1: New Assets Priority Ranking Criteria

| Criteria | Weighting |
|---|-------------|
| Security of supply - identified deficiency to adopted levels of Service | 60 |
| Regulatory change and/or change in external standards | 30 |
| Community Expectations for improved service | 10 |
| Total | 100% |

5.5.2 Capital Investment Strategies

The organisation will plan capital upgrade and new projects to meet level of service objectives by:

- Planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner,
- Undertake project scoping for all capital upgrade/new projects to identify:
 - the service delivery 'deficiency', present risk and required timeline for delivery of the upgrade/new asset,
 - the project objectives to rectify the deficiency including value management for major projects,
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency,
 - management of risks associated with alternative options,
 - and evaluate the options against evaluation criteria adopted by Council, and
 - select the best option to be included in capital upgrade/new programs,
- Review current and required skills base and implement training and development to meet required construction and project management needs,
- Review management of capital project management activities to ensure Council is obtaining best value for resources used.

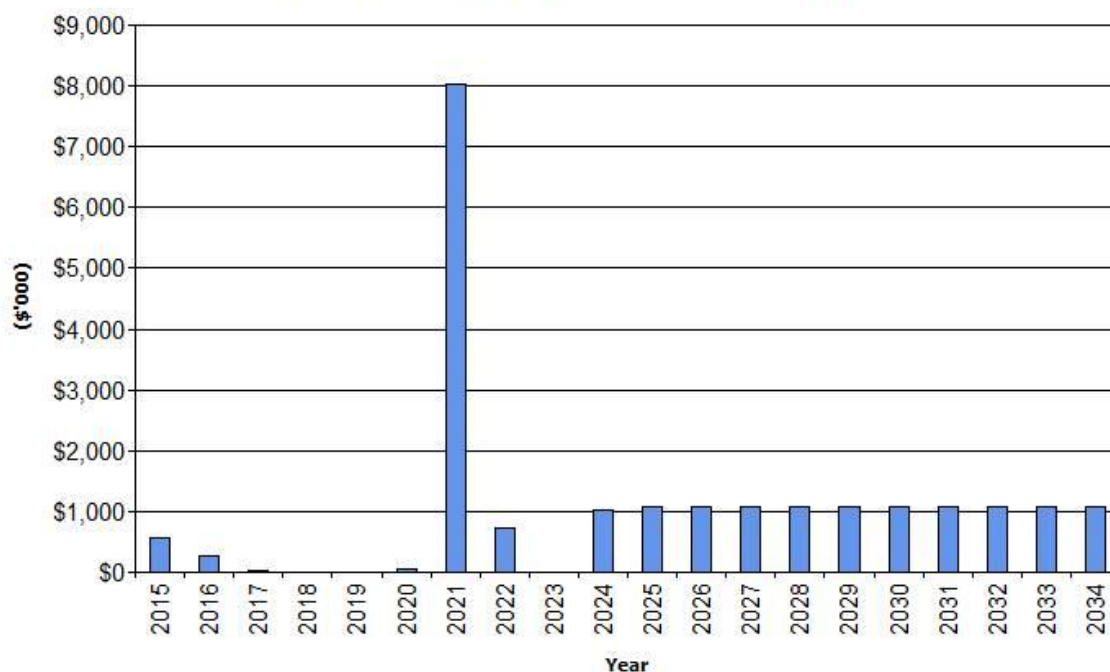
Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

5.5.3 Summary of future upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in Fig 6. The projected upgrade/new capital works program is shown in Appendix C. All amounts are shown in real values.

Fig 6.1 Projected Capital Upgrade/New Asset Expenditure (Scenario 2)

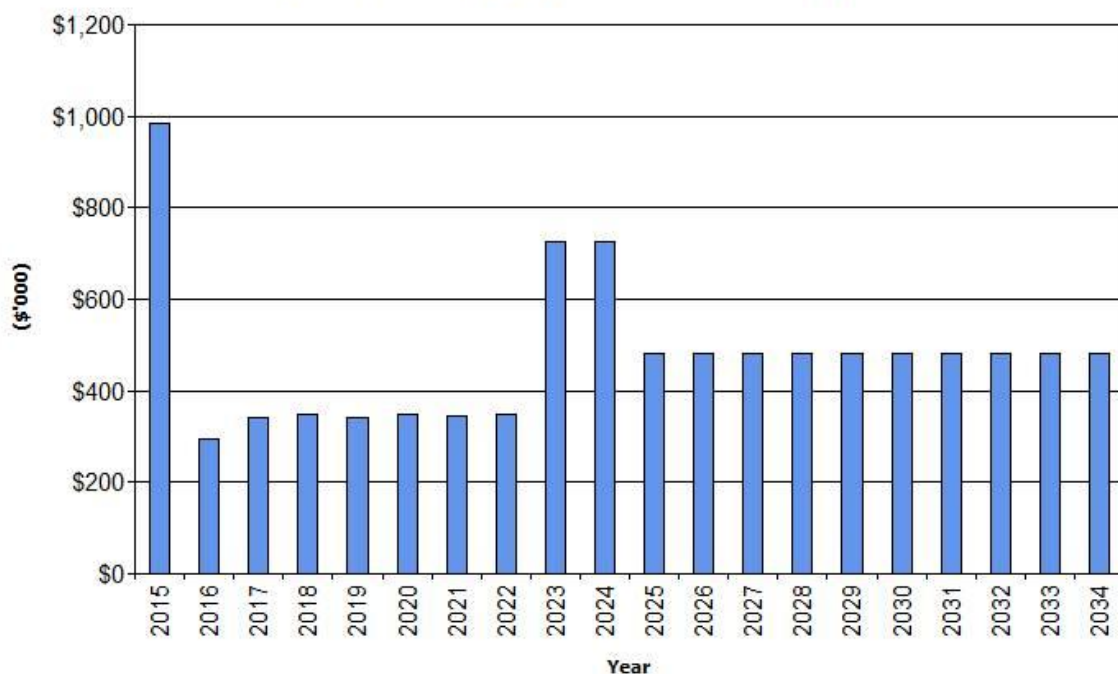
Singleton - Projected Capital Upgrade/New Expenditure (Water Supply 2015_S2_V1)



Graphs for Scenario 1 and Scenario 2 are the same. They both show a significant spike in 2021 when water quality works are proposed at the water treatment plant.

Fig 6.2 Projected Capital Upgrade/New Asset Expenditure (Scenario 3)

Singleton - Projected Capital Upgrade/New Expenditure (Water Supply 2015_S3_V1)



Scenario 3 aligns with the funding provisions of Council's long term financial plan.

Expenditure on new assets and services in the organisation's capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6, together with estimated annual savings from not having to fund operations and maintenance of the assets.

These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any revenue gained from asset disposals is accommodated in Council's long term financial plan.

Cashflow projections from asset disposals are not available and will be developed in future revisions of this asset management plan if required.

Table 5.6: Assets Identified for Disposal

| Asset | Reason for Disposal | Timing | Disposal Expenditure | Operations & Maintenance Annual Savings |
|-------|---------------------|--------|----------------------|---|
| None | | | | |

6. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

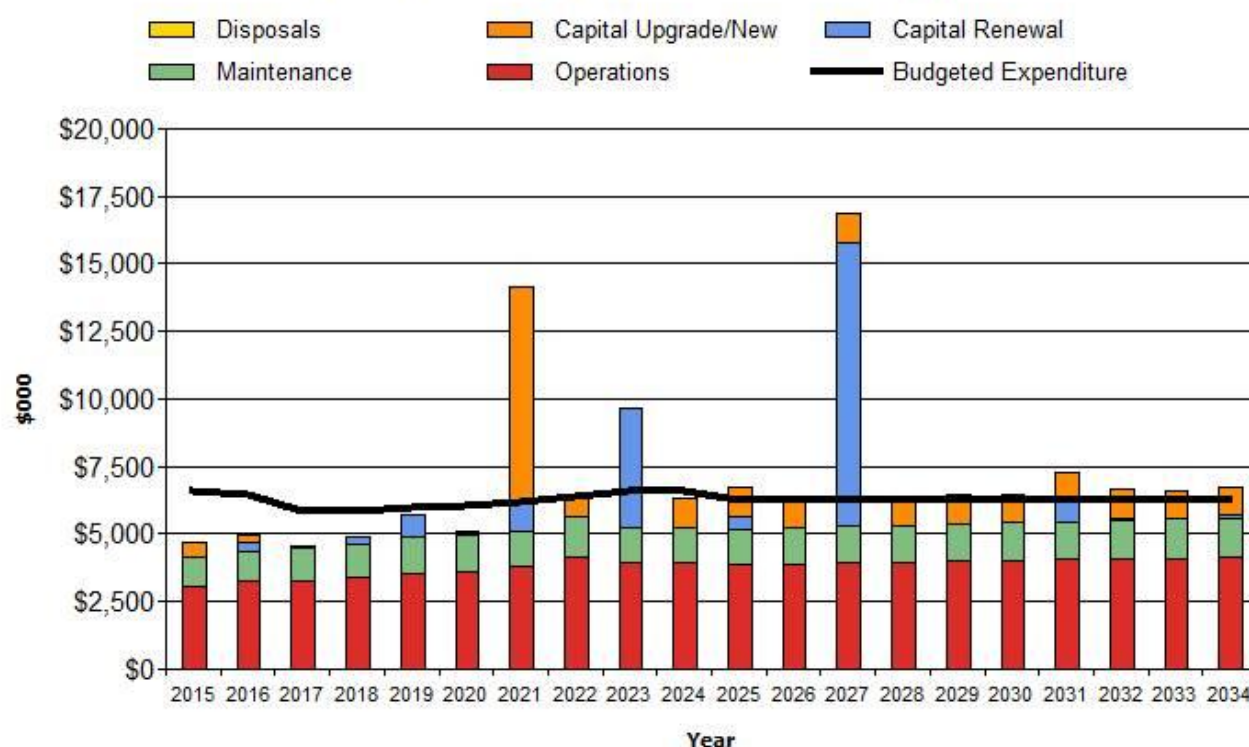
6.1 Financial Statements and Projections

The modelling has been used to establish the level of residential charges required to be levied, to ensure the long term financial sustainability of the Water Fund.

The financial projections are shown in Fig 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are shown in real values.

Fig 7:1 Projected Operating and Capital Expenditure (Scenario 1)

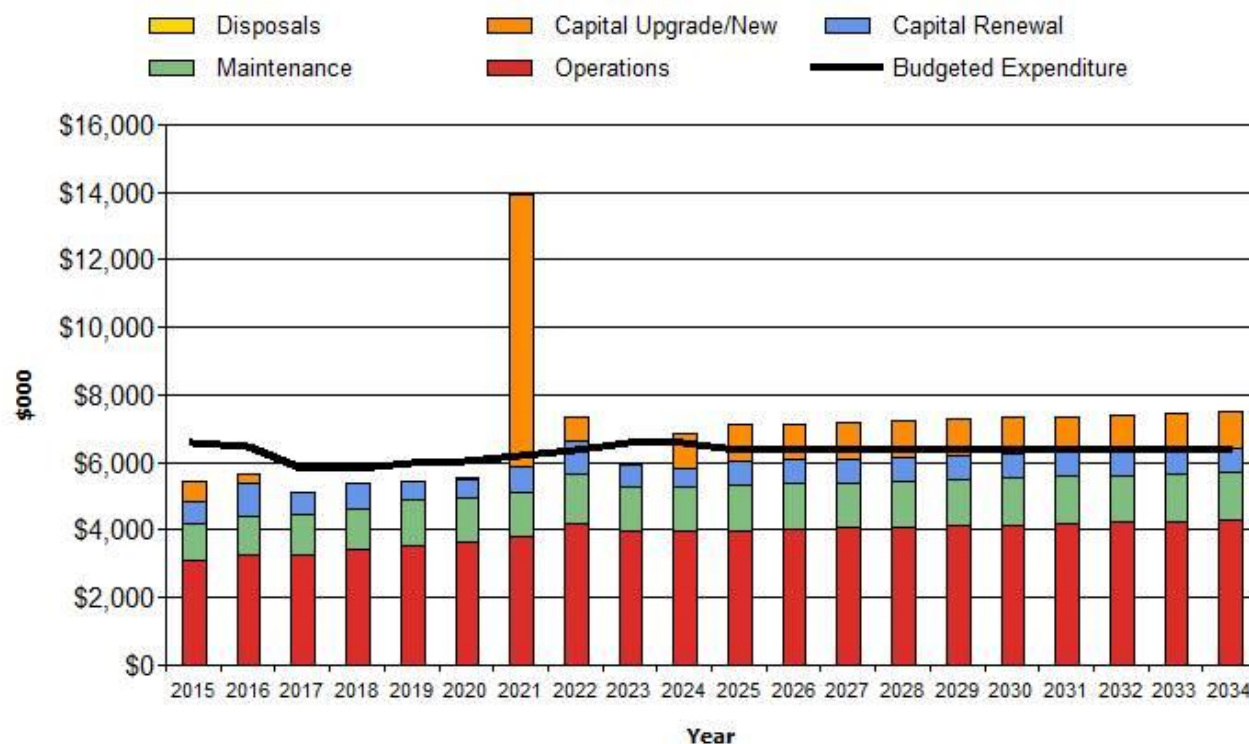
Singleton - Projected Operating and Capital Expenditure (Water Supply 2015_S1_V1)



As discussed in Section 5.4 the expenditure projection (forecast) in Scenario 1 (Using the asset/valuation register) indicates that the funds to meet the forecast renewal requirements are generally aligned with funding in the LTFP except for high cost infrastructure replacement forecast in 2027. This additional expenditure is due to the expiry of 'useful life' for water mains which are still in very good condition. Indications are that Singleton's water mains may have a much longer 'useful life' than that assigned by standard valuations. A condition assessment program will improve the accuracy of "useful life" estimates for this infrastructure.

Fig 7:2 Projected Operating and Capital Expenditure (Scenario 2)

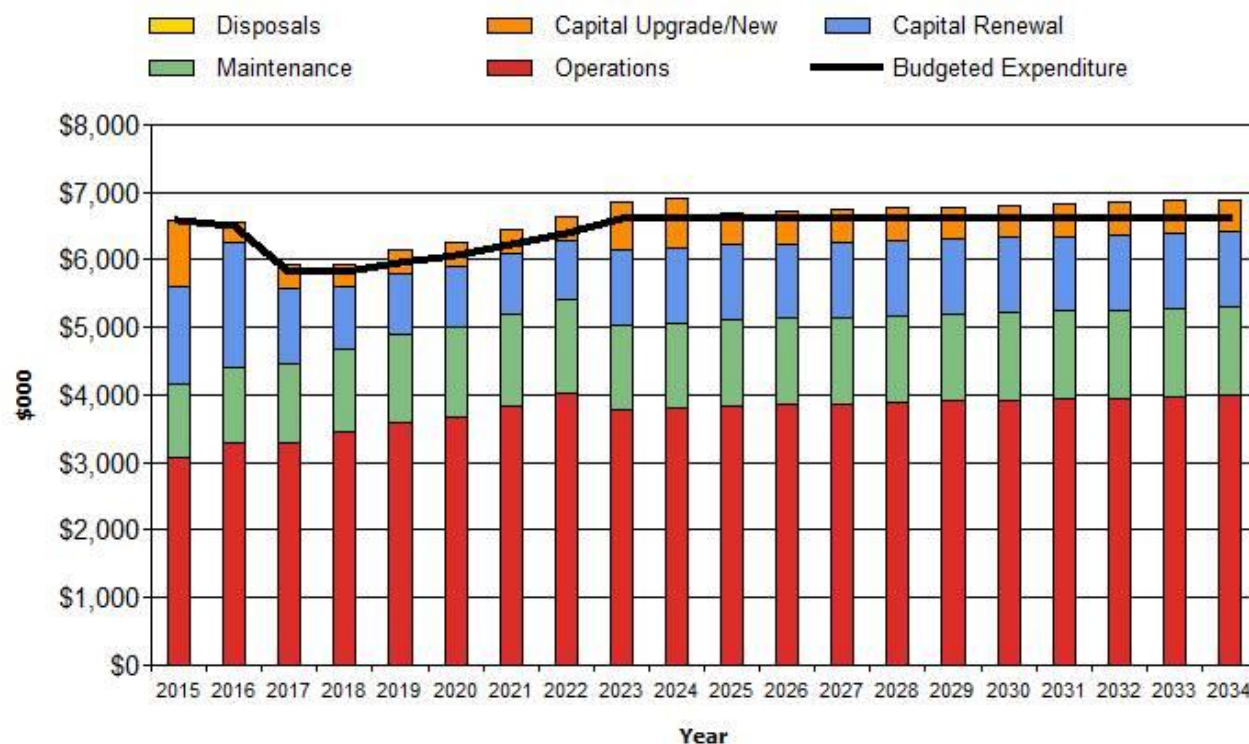
Singleton - Projected Operating and Capital Expenditure (Water Supply 2015_S2_V1)



The Scenario 2 renewal requirements are based on the technical judgement made by Singleton technical staff. This level of funding can be achieved and is aligned closely with results of Scenario 3 modelling – balanced situation as well as with medium and long-term budgets. In addition the water reserve fund holds sufficient capital to cover any additional capital works/renewals necessary and maintain current service levels.

Fig 7:3 Projected Operating and Capital Expenditure (Scenario 3)

Singleton - Projected Operating and Capital Expenditure (Water Supply 2015_S3_V1)



The first 10 years of Scenario 3 have been balanced with the funding available. The relatively small annual long-term shortfall is largely associated with new infrastructure required for additional development area and these additional funds can be obtained from reserves and via developer contributions. (Figure 6.4 – Projected cash levels and outstanding borrowing vs capital works program)

6.1.1 Sustainability of service delivery

There are four key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the asset renewal funding ratio, long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Asset Renewal Funding Ratio

| | |
|--|------|
| Asset Renewal Funding Ratio Scenario 1 | 176% |
| Asset Renewal Funding Ratio Scenario 2 | 157% |
| Asset Renewal Funding Ratio Scenario 3 | 100% |

The Asset Renewal Funding Ratio is the most important indicator and reveals that over the next 10 years, Council is forecasting that it will have all of the funds required for the optimal renewal and replacement of its assets.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals.

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap (-ve = gap, +ve = surplus).

The life cycle costs and life cycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term. If the life cycle expenditure is less than that life cycle cost, it is most likely that outlays will need to be increased or cuts in services made in the future.

Knowing the extent and timing of any required increase in outlays and the service consequences if funding is not available will assist organisations in providing services to their communities in a financially sustainable manner. This is the purpose of the asset management plans and long term financial plan.

Medium term – 10 year financial planning period

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

Table 6.1 Asset Ratios and Indicators

| Asset Ratio or Indicator | Scenario 1 (\$000's) | Scenario 2 (\$000's) | Scenario 3 (\$000's) |
|---|-------------------------|-------------------------|-------------------------|
| Asset Renewal Funding Ratio | | | |
| Asset Renewal Funding Ratio | 176% | 157 % | 100 % |
| Life Cycle Cost (long term)'(\$000) | | | |
| Life Cycle Cost (depreciation + ops. and maintenance. expenditures – 10 year average) | \$6,672 | \$6,679 | \$6,636 |
| Life Cycle Exp. (Capital renewal. + operations + maintenance expenditure 10 year average) | \$5,777 | \$5,777 | \$5,777 |
| Life Cycle Gap [life cycle expenditure - life cycle cost [-year = gap] | -\$895 | -\$902 | -\$859 |
| Life Cycle Sustainability Indicator [life cycle expenditure / LCC] | 87 % | 86 % | 87% |
| Medium Term (10 years) Sustainability | | | |
| 10 year Operations, Maintenance & Renewal Projected Expenditure | \$5,568 | \$5,592 | \$5,946 |

| Asset Ratio or Indicator | Scenario 1 (\$000's) | Scenario 2 (\$000's) | Scenario 3 (\$000's) |
|--|-------------------------|-------------------------|-------------------------|
| 10 year Operations, Maintenance & Renewal Planned (Budget) Expenditures | \$5,777 | \$5,777 | \$5,777 |
| 10 year Funding Shortfall (10 year projected. expenditures. - Planned (Budget) Expenditures) | \$209 | \$185 | -\$168 |
| 10 year Sustainability Indicator (10-year projected operations, maintenance expenditure and depreciation.) | 104 % | 103 % | 97 % |
| Short Term (5 years) Sustainability | | | |
| 5 year Operations, Maintenance & Renewal Projected Expenditure | \$4,799 | \$5,236 | \$5,767 |
| 5 year Operations, Maintenance & Renewal Planned (Budget) Expenditure | \$5,678 | \$5,678 | \$5,678 |
| 5 year Funding Shortfall (5 year projected expenditures. - planned (budget) expenditures) | \$879 | \$443 | -\$89 |
| 5 year Sustainability Indicator (5 year planned expenditures. / projected expenditures) | 118 % | 108 % | 98 % |

Asset management financial indicators

Figure 7A shows the asset management financial indicators over the 10 year planning period and for the long term life cycle for each of the three scenarios.

Figure 7.1A Asset Management Financial Indicators – Scenario 1

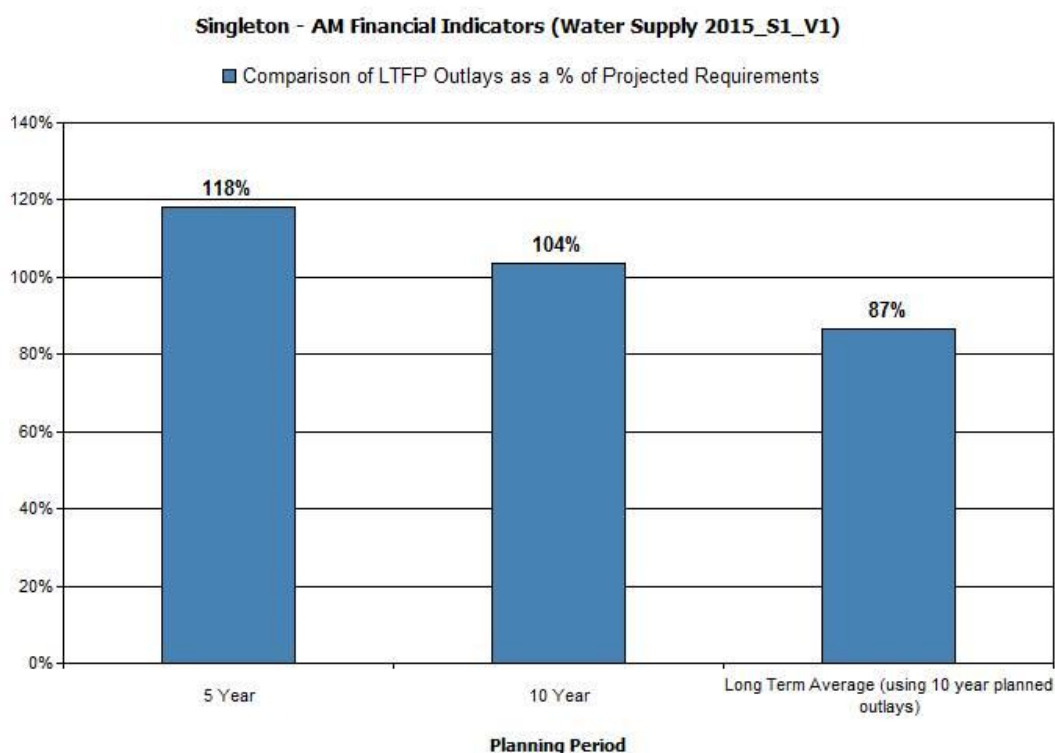


Figure 7.2A Asset Management Financial Indicators – Scenario 2

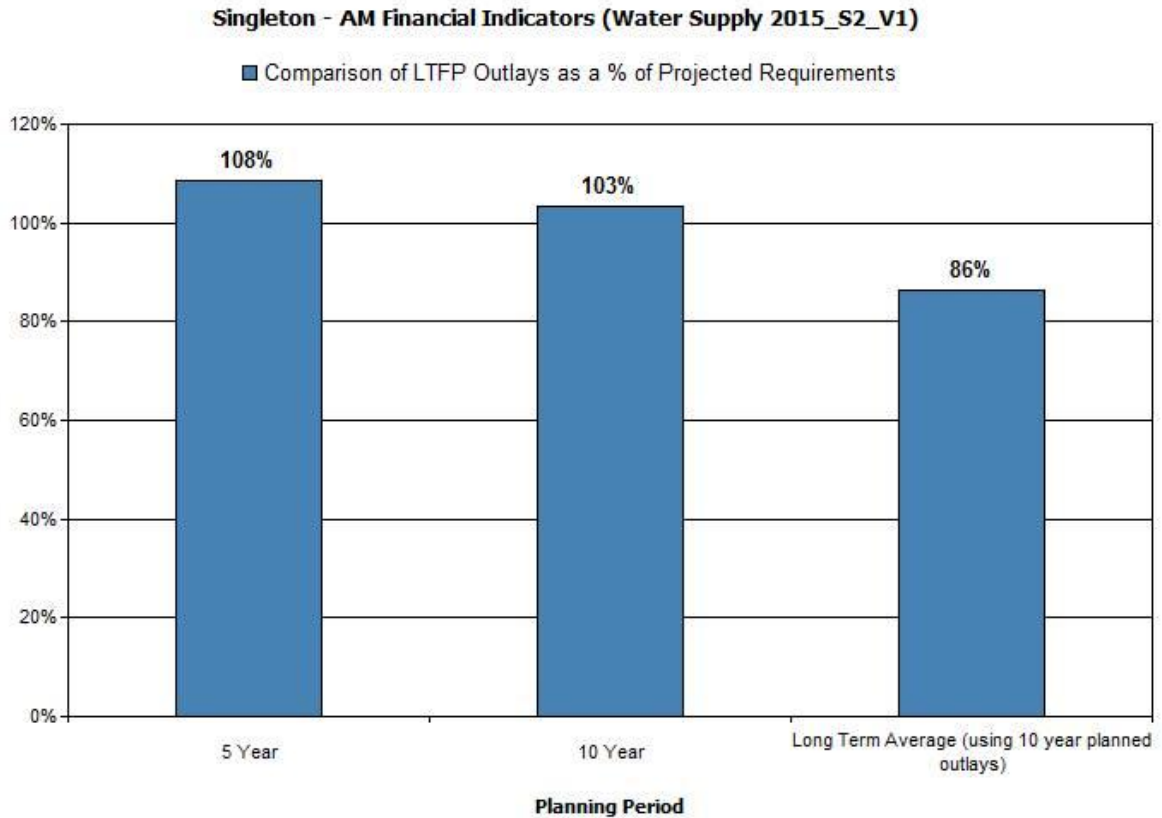
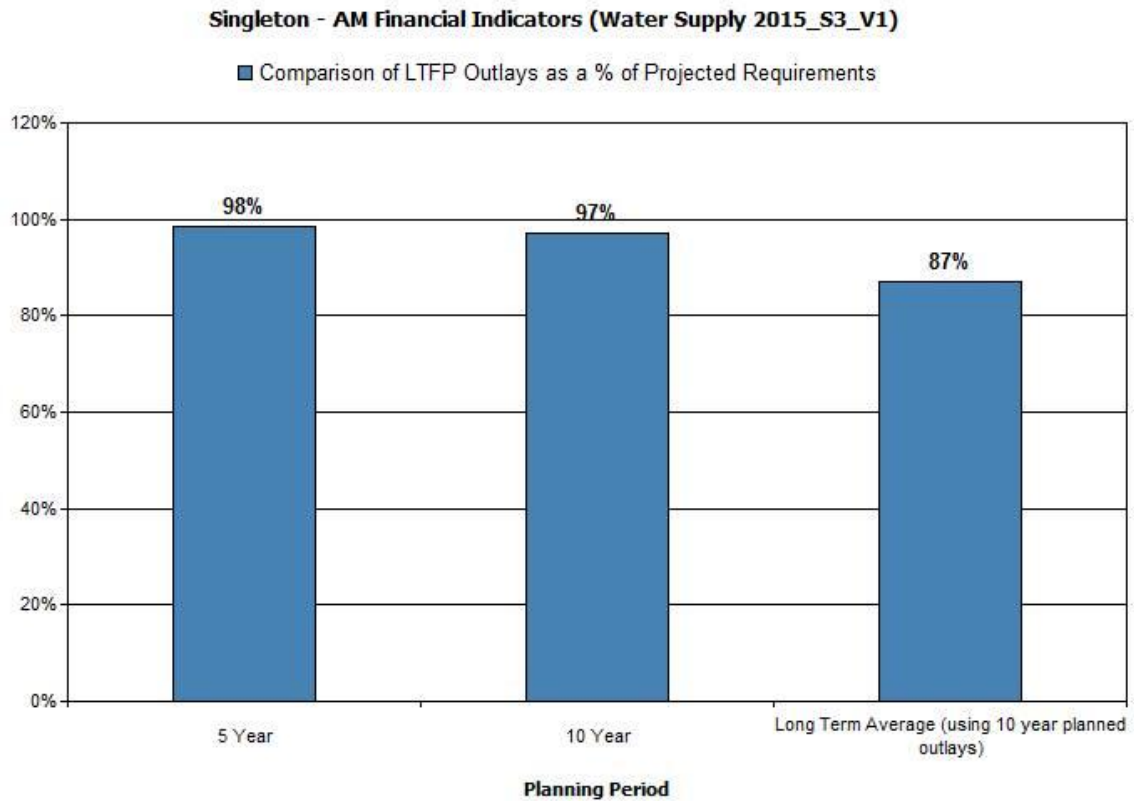


Figure 7.3A Asset Management Financial Indicators – Scenario 3



Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 for the first years of the asset management plan and ideally over the 10 year life of the Long Term Financial Plan.

Figure 8 shows the projected asset renewal and replacement expenditure over the 20 years of the AM Plan for each of the three scenarios. The projected asset renewal and replacement expenditure is compared to renewal and replacement expenditure in the capital works program, which is accommodated in the long term financial plan

Figure 8.1: Projected and LTFP Budgeted Renewal Expenditure - Scenario 1

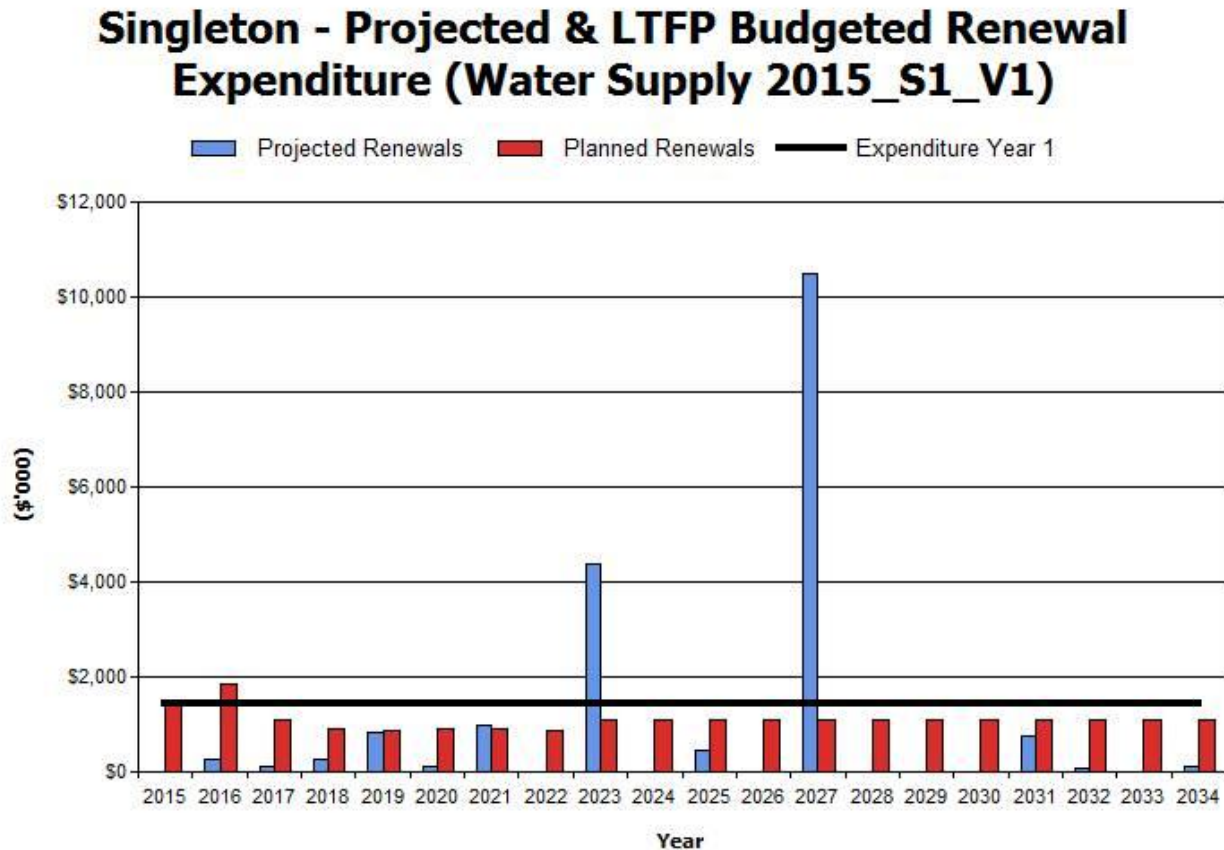


Figure 8.2: Projected and LTFP Budgeted Renewal Expenditure - Scenario 2

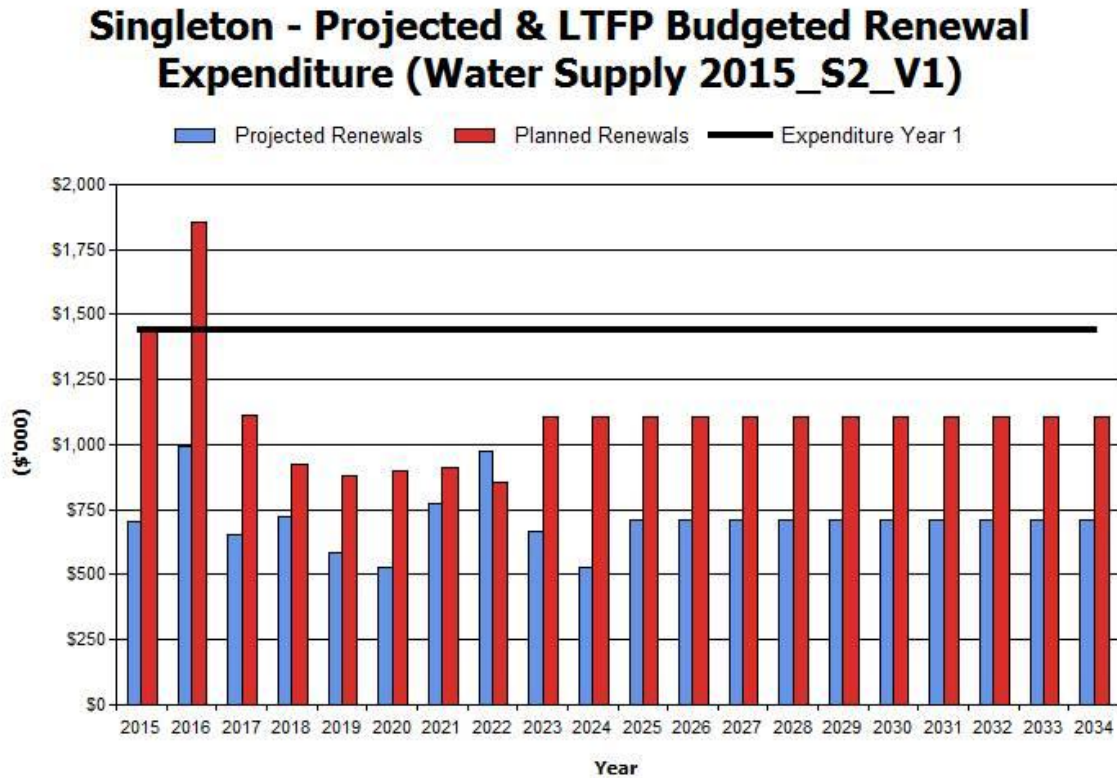


Figure 8.3: Projected and LTFP Budgeted Renewal Expenditure - Scenario 3

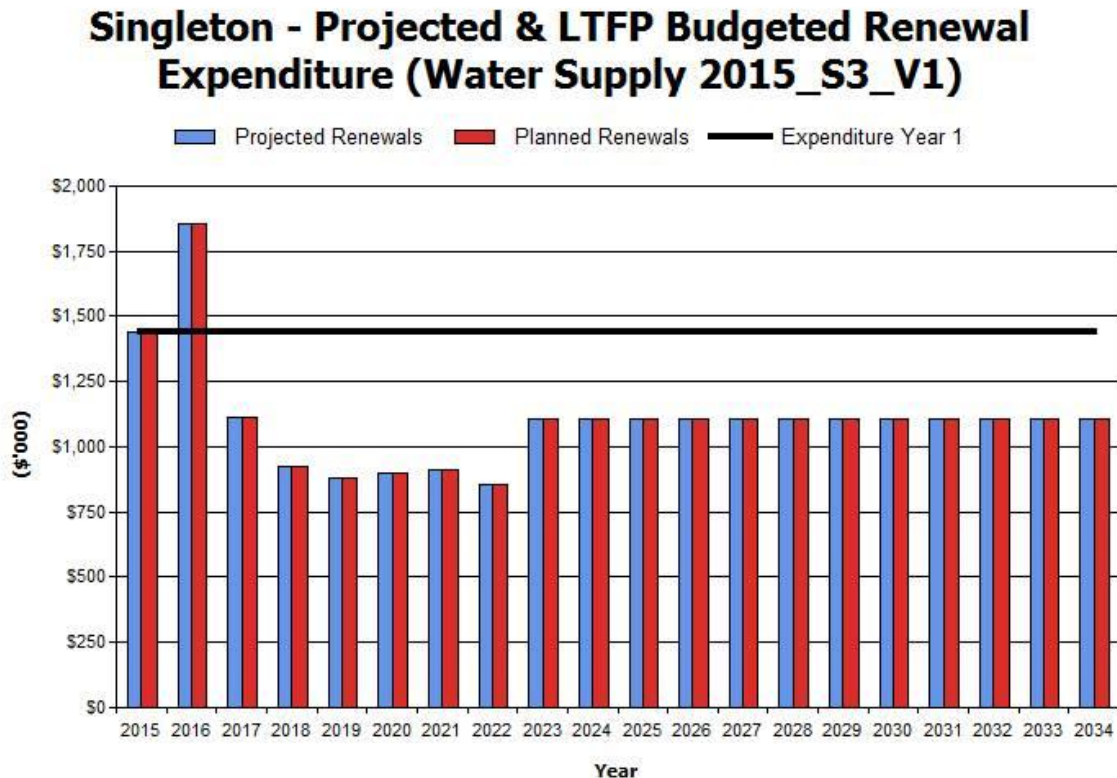


Table 6.1.1 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in the long term financial plan. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets are shown in Appendix D.

Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall

Scenario 1

| Year | Projected Renewals (\$000) | LTFP Renewal Budget (\$000) | Renewal Financing Shortfall (\$000) (-ve Gap, +ve Surplus) | Cumulative Shortfall (\$000) (-ve Gap, +ve Surplus) |
|------|----------------------------|-----------------------------|--|---|
| 2015 | \$7 | \$1,442 | \$1,435 | \$1,435 |
| 2016 | \$282 | \$1,857 | \$1,575 | \$3,010 |
| 2017 | \$98 | \$1,111 | \$1,013 | \$4,024 |
| 2018 | \$262 | \$924 | \$662 | \$4,685 |
| 2019 | \$828 | \$883 | \$55 | \$4,741 |
| 2020 | \$117 | \$897 | \$780 | \$5,521 |
| 2021 | \$982 | \$911 | \$-71 | \$5,450 |
| 2022 | \$0 | \$858 | \$858 | \$6,308 |
| 2023 | \$4,389 | \$1,105 | \$-3,284 | \$3,024 |
| 2024 | \$0 | \$1,105 | \$1,105 | \$4,129 |
| 2025 | \$459 | \$1,109 | \$650 | \$4,779 |
| 2026 | \$0 | \$1,109 | \$1,109 | \$5,888 |
| 2027 | \$10,481 | \$1,109 | \$-9,372 | \$-3,483 |
| 2028 | \$0 | \$1,109 | \$1,109 | \$-2,374 |
| 2029 | \$0 | \$1,109 | \$1,109 | \$-1,265 |
| 2030 | \$0 | \$1,109 | \$1,109 | \$-155 |
| 2031 | \$750 | \$1,109 | \$359 | \$204 |
| 2032 | \$88 | \$1,109 | \$1,022 | \$1,225 |
| 2033 | \$0 | \$1,109 | \$1,109 | \$2,335 |
| 2034 | \$98 | \$1,109 | \$1,012 | \$3,346 |

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

Scenario 2

| Year | Projected Renewals (\$000) | LTFP Renewal Budget (\$000) | Renewal Financing Shortfall (\$000) (-ve Gap, +ve Surplus) | Cumulative Shortfall (\$000) (-ve Gap, +ve Surplus) |
|-------------|-----------------------------------|------------------------------------|---|--|
| 2015 | \$703 | \$1,442 | \$739 | \$739 |
| 2016 | \$995 | \$1,857 | \$862 | \$1,601 |
| 2017 | \$655 | \$1,111 | \$456 | \$2,057 |
| 2018 | \$722 | \$924 | \$202 | \$2,259 |
| 2019 | \$582 | \$883 | \$301 | \$2,560 |
| 2020 | \$529 | \$897 | \$368 | \$2,928 |
| 2021 | \$773 | \$911 | \$138 | \$3,066 |
| 2022 | \$973 | \$858 | \$-115 | \$2,951 |
| 2023 | \$669 | \$1,105 | \$436 | \$3,387 |
| 2024 | \$529 | \$1,105 | \$576 | \$3,963 |
| 2025 | \$713 | \$1,109 | \$396 | \$4,359 |
| 2026 | \$713 | \$1,109 | \$396 | \$4,756 |
| 2027 | \$713 | \$1,109 | \$396 | \$5,152 |
| 2028 | \$713 | \$1,109 | \$396 | \$5,548 |
| 2029 | \$713 | \$1,109 | \$396 | \$5,945 |
| 2030 | \$713 | \$1,109 | \$396 | \$6,341 |
| 2031 | \$713 | \$1,109 | \$396 | \$6,737 |
| 2032 | \$713 | \$1,109 | \$396 | \$7,133 |
| 2033 | \$713 | \$1,109 | \$396 | \$7,530 |
| 2034 | \$713 | \$1,109 | \$396 | \$7,926 |

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

Scenario 3

| Year | Projected Renewals (\$000) | LTFP Renewal Budget (\$000) | Renewal Financing Shortfall (\$000) (-ve Gap, +ve Surplus) | Cumulative Shortfall (\$000) (-ve Gap, +ve Surplus) |
|------|----------------------------|-----------------------------|--|---|
| 2015 | \$1,442 | \$1,442 | \$0 | \$0 |
| 2016 | \$1,857 | \$1,857 | \$0 | \$0 |
| 2017 | \$1,111 | \$1,111 | \$0 | \$0 |
| 2018 | \$924 | \$924 | \$0 | \$0 |
| 2019 | \$883 | \$883 | \$0 | \$0 |
| 2020 | \$897 | \$897 | \$0 | \$0 |
| 2021 | \$911 | \$911 | \$0 | \$0 |
| 2022 | \$858 | \$858 | \$0 | \$0 |
| 2023 | \$1,105 | \$1,105 | \$0 | \$0 |
| 2024 | \$1,105 | \$1,105 | \$0 | \$0 |
| 2025 | \$1,109 | \$1,105 | \$-4 | \$-4 |
| 2026 | \$1,109 | \$1,105 | \$-4 | \$-9 |
| 2027 | \$1,109 | \$1,105 | \$-4 | \$-13 |
| 2028 | \$1,109 | \$1,105 | \$-4 | \$-17 |
| 2029 | \$1,109 | \$1,105 | \$-4 | \$-22 |
| 2030 | \$1,109 | \$1,105 | \$-4 | \$-26 |
| 2031 | \$1,109 | \$1,105 | \$-4 | \$-30 |
| 2032 | \$1,109 | \$1,105 | \$-4 | \$-34 |
| 2033 | \$1,109 | \$1,105 | \$-4 | \$-39 |
| 2034 | \$1,109 | \$1,105 | \$-4 | \$-43 |

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

Providing services in a sustainable manner will require matching of projected asset renewal and replacement expenditure to meet agreed service levels with **the corresponding** capital works program accommodated in the long term financial plan.

6.1.2 Projected expenditures for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year long term financial plan. Expenditure projections are in 2015 real values.

Table 6.1.2: Projected Expenditures for Long Term Financial Plan (\$000)

Scenario 1

| Year | Operations (\$000) | Maintenance (\$000) | Projected Capital Renewal (\$000) | Capital Upgrade/ New (\$000) | Disposals (\$000) |
|------|--------------------|---------------------|-----------------------------------|------------------------------|-------------------|
| 2015 | \$3,088 | \$1,076 | \$7 | \$556 | \$0 |
| 2016 | \$3,285 | \$1,097 | \$282 | \$277 | \$0 |
| 2017 | \$3,290 | \$1,170 | \$98 | \$21 | \$0 |
| 2018 | \$3,434 | \$1,210 | \$262 | \$5 | \$0 |
| 2019 | \$3,553 | \$1,318 | \$828 | \$5 | \$0 |
| 2020 | \$3,628 | \$1,322 | \$117 | \$42 | \$0 |
| 2021 | \$3,782 | \$1,332 | \$982 | \$8,042 | \$0 |
| 2022 | \$4,168 | \$1,457 | \$0 | \$728 | \$0 |
| 2023 | \$3,947 | \$1,304 | \$4,389 | \$5 | \$0 |
| 2024 | \$3,954 | \$1,307 | \$0 | \$1,035 | \$0 |

Scenario 2

| Year | Operations (\$000) | Maintenance (\$000) | Projected Capital Renewal (\$000) | Capital Upgrade/ New (\$000) | Disposals (\$000) |
|------|--------------------|---------------------|-----------------------------------|------------------------------|-------------------|
| 2015 | \$3,088 | \$1,076 | \$703 | \$556 | \$0 |
| 2016 | \$3,285 | \$1,097 | \$995 | \$277 | \$0 |
| 2017 | \$3,290 | \$1,170 | \$655 | \$21 | \$0 |
| 2018 | \$3,434 | \$1,210 | \$722 | \$5 | \$0 |
| 2019 | \$3,553 | \$1,318 | \$582 | \$5 | \$0 |
| 2020 | \$3,638 | \$1,325 | \$529 | \$42 | \$0 |
| 2021 | \$3,793 | \$1,335 | \$773 | \$8,042 | \$0 |
| 2022 | \$4,179 | \$1,460 | \$973 | \$728 | \$0 |

| Year | Operations (\$000) | Maintenance (\$000) | Projected Capital Renewal (\$000) | Capital Upgrade/ New (\$000) | Disposals (\$000) |
|------|--------------------|---------------------|-----------------------------------|------------------------------|-------------------|
| 2023 | \$3,957 | \$1,308 | \$669 | \$5 | \$0 |
| 2024 | \$3,965 | \$1,310 | \$529 | \$1,035 | \$0 |

Scenario 3

| Year | Operations (\$000) | Maintenance (\$000) | Projected Capital Renewal (\$000) | Capital Upgrade/ New (\$000) | Disposals (\$000) |
|------|--------------------|---------------------|-----------------------------------|------------------------------|-------------------|
| 2015 | \$3,088 | \$1,076 | \$1,442 | \$983 | \$0 |
| 2016 | \$3,296 | \$1,101 | \$1,857 | \$294 | \$0 |
| 2017 | \$3,302 | \$1,174 | \$1,111 | \$341 | \$0 |
| 2018 | \$3,454 | \$1,217 | \$924 | \$350 | \$0 |
| 2019 | \$3,582 | \$1,329 | \$883 | \$343 | \$0 |
| 2020 | \$3,677 | \$1,339 | \$897 | \$347 | \$0 |
| 2021 | \$3,839 | \$1,352 | \$911 | \$345 | \$0 |
| 2022 | \$4,021 | \$1,405 | \$858 | \$348 | \$0 |
| 2023 | \$3,789 | \$1,249 | \$1,105 | \$726 | \$0 |
| 2024 | \$3,815 | \$1,258 | \$1,105 | \$726 | \$0 |

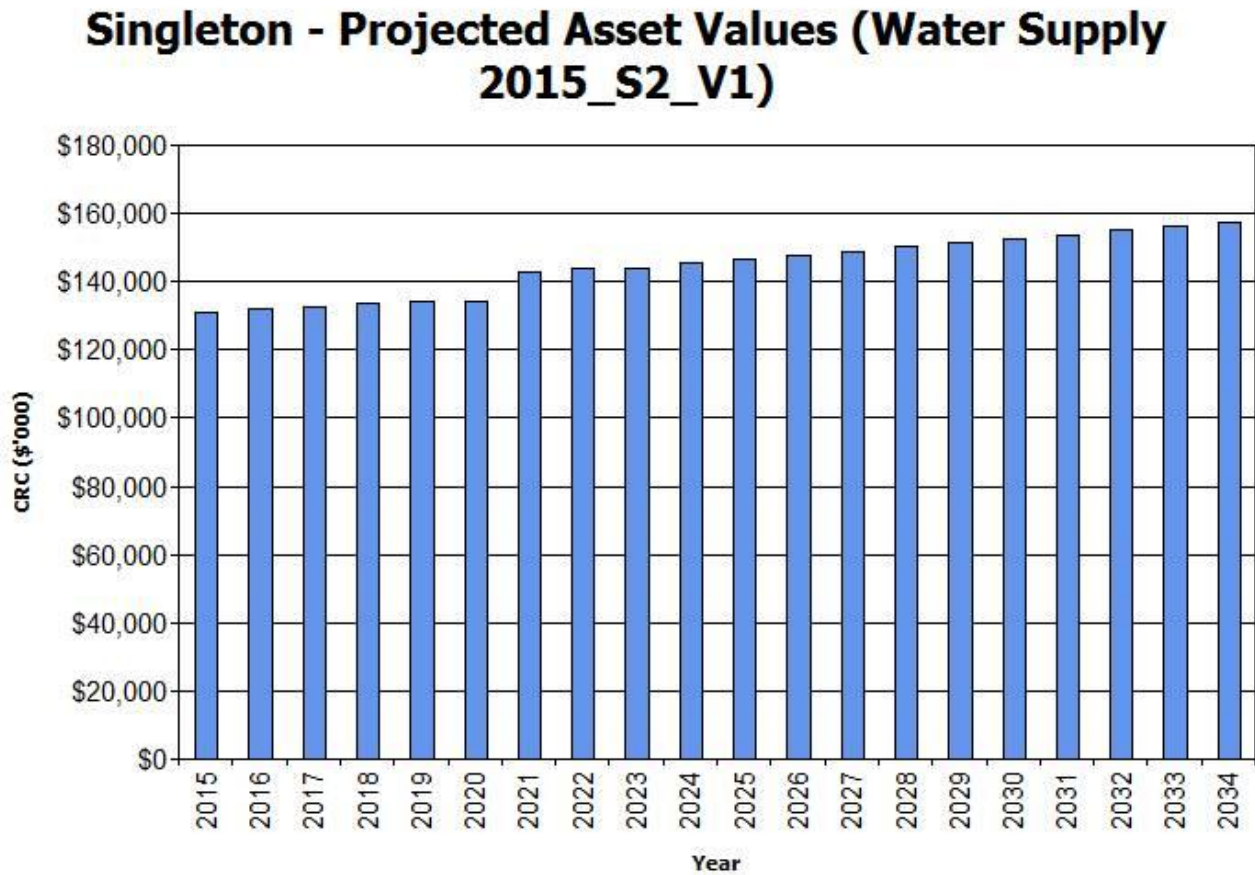
6.2 Funding Strategy

After reviewing service levels, as appropriate to ensure ongoing financial sustainability, projected expenditures identified in Section 6.1.2 will be accommodated in the Council's 10 year long term financial plan.

6.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 9 shows the projected replacement cost asset values over the planning period in real values.

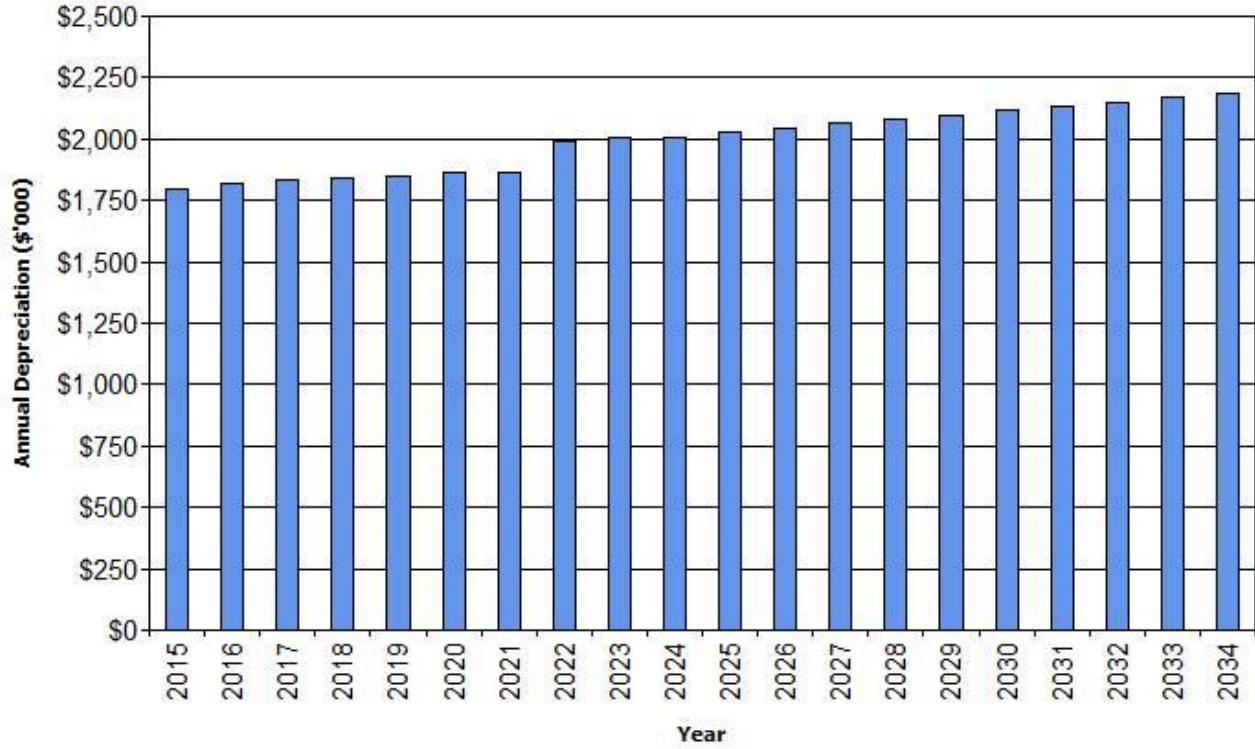
Figure 9: Projected Asset Values



Depreciation expense values are forecast in line with asset values as shown in Figure 10.

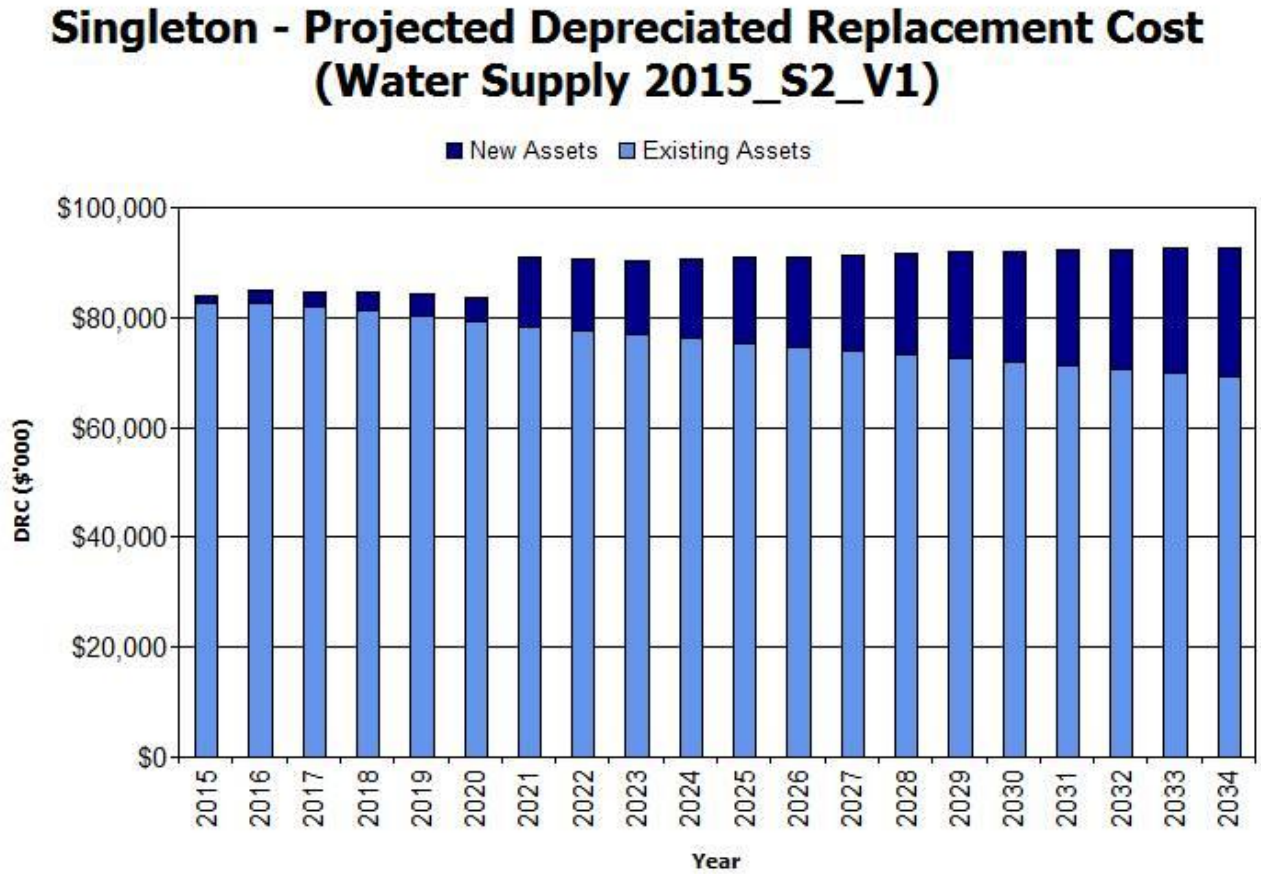
Figure 10: Projected Depreciation Expense

Singleton - Projected Depreciation Expense (Water Supply 2015_S2_V1)



The depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 11. The depreciated replacement cost of contributed and new assets is shown in the darker colour and in the lighter colour for existing assets.

Figure 11: Projected Depreciated Replacement Cost



6.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan are shown in Table 6.4.

Table 6.4: Key Assumptions made in AM Plan

| Key Assumptions | Source |
|-------------------------|---|
| Historical Data | Singleton Council, special schedules for water supply and sewerage for years 2009 -10, 2010-11, 2011-2012, 2012-2013, 2013-2014 |
| Financial Data | Average annual long-term inflation rate: 3.0% Annual Investment Interest Rate: 5.26% Annual Borrowing Interest Rate: 5.3% |
| Demographic Data | 2011 Census and analysis of trends |

6.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale¹⁰ in accordance with Table 6.5.

Table 6.5: Data Confidence Grading System

| Confidence Grade | Description |
|-------------------|--|
| A Highly reliable | Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$ |
| B Reliable | Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$ |
| C Uncertain | Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$ |
| D Very Uncertain | Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy $\pm 40\%$ |
| E Unknown | None or very little data held. |

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 6.5.1.

Table 6.5.1: Data Confidence Assessment for Data used in AM Plan

| Data | Confidence Assessment | Comment |
|---|-----------------------|--|
| Demand drivers | A | Extensive work done during 30 year financial modelling |
| Growth projections | A | Multiple scenarios developed and considered during 30 year financial modelling |
| Operations expenditures | A | Levels well known, scenarios considering additional resourcing have been developed |
| Maintenance expenditures | A | Well known |
| Projected Renewal exps. - Asset values | B | Generally using design lives, with limited overrides for condition or obsolescence |

¹⁰ IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

| Data | Confidence Assessment | Comment |
|--------------------------|------------------------------|---|
| - Asset residual values | B | |
| - Asset useful lives | B | Discrepancy between the useful lives and condition gradings applied to some assets. Assets are in very good condition whilst reaching end of theoretical life. Needs attention. |
| - Condition modelling | B | |
| - Network renewals | B | |
| - Defect repairs | B | |
| Upgrade/New expenditures | A | |
| Disposal expenditures | C | |

Over all data sources the data confidence is assessed as high confidence level for data used in the preparation of this AM Plan.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Council uses the “Authority” suite for its financial / accounting systems. Responsibility for the financial system lies with the Manager – Finance and the Director – Business Support. Financial reporting is prepared in accordance with the requirements of the Local Government Act 1993 and relevant Australian Accounting Standards.

The Finance Section reports in accordance with the relevant accounting standards and regulations:

- Local Government Act (NSW) 1993
- Local Government Amendment (Planning and Reporting) Act 2009
- Local Government (Finance Plans and Reporting) Regulation 2010
- NSW Code of Accounting Practice
- AASB116

Capital/maintenance threshold

The Asset Steering Committee dated 28 October 2013 adopted the following capitalisation thresholds for assets in Singleton Council:

Capitalisation Thresholds

Items of infrastructure, property, plant and equipment are not capitalised unless their cost of acquisition exceeds the following;

Land

- Council land 100% Capitalised
- Open space 100% Capitalised
- Land under roads (*purchased after 30/6/08*) 100% Capitalised

Plant & Equipment

- Office Furniture > \$5,000
- Office Equipment > \$5,000
- Other Plant & Equipment > \$5,000

Buildings & Land Improvements

- Park Furniture & Equipment > \$5,000
- Building
- Construction/Extensions 100% Capitalised
- Renovations > \$10,000
- Other Structures > \$10,000

Stormwater Assets

- Drains & Culverts > \$10,000
- Other > \$10,000

Transport Assets

- Road construction & Reconstruction > \$10,000
- Reseal/Re-sheet & Major repairs > \$10,000
- Bridge construction & Reconstruction > \$10,000

Water & Sewer Assets

- Reticulation extensions > \$10,000
- Other > \$10,000

The thresholds were ratified by the asset steering committee on the 11 November 2013.

7.1.2 Asset management system

Council is implementing a corporate Asset Register, which will then be further developed into a fully integrated Asset Management System.

Asset management is still undertaken via spread sheets and asset's work scheduling work is done by specific programs such as "Reflect".

Currently asset management systems are departmentalised and each manager of the relevant program area is responsible for it. In order for this Asset Management Plan to grow in maturity and improve in accuracy it is vital that the development of the Asset Register be completed and that the financial system be seamlessly integrated with it.

It is important that continued access is provided to asset registers and associated financial information to all stakeholders to enable the discharge of daily functions. This should be smooth as Council's Finance System and Asset Management Information System are both "Civica" products. The practical benefits for asset managers are however yet to be fully realised.

Required changes to asset management systems arising from this AM Plan are:

- Continual review of accuracy and currency of asset data particularly financial records, physical conditions, backlog, functionality and capacity,
- Continued development of a single technical asset register as the corporate asset register, in which financial calculations including calculation of annual depreciation can be undertaken by council at an individual asset component level,
- Appropriate access is provided to all stakeholders to enable them to properly discharge their respective functions and roles,
- Responsibilities are determined with respect to Asset Management (physical and financial data collection, development of asset management plans, coordination of activities, etc) and are clarified for Asset Managers, Information Systems and Finance,
- Development of a works costing and maintenance management system to improve works planning and cost recording, in particular to identify expenditure type (operations, maintenance, capital renewal and capital new/upgrade),
- Improved project cost accounting to record costs against the asset component and review valuation unit rates and minimise the difference between cost of actual delivery of services and the financially reported backlog.

Asset Registers

- BIZEASSET™
- NAMS™

Linkage from asset management to financial system

- Improved processes are being implemented

7.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 7.2.

Table 7.2: Improvement Plan

| Task No | Task | Responsibility | Resources Required | Timeline |
|---------|--|----------------|---|---------------|
| 1 | Ensure goals & objectives of AMP align with defined corporate goals as Strategies are redeveloped | Manager W&W | LIS Coordinator Finance Coordinator | On-going |
| 2 | Develop and Implement Corporate Asset Register interaction with financial system. | Manager - IS | LIS Coordinator LIS Officer Assets | |
| 3 | Integrate Works as Executed Software & Asset Register. | Manager - IS | LIS Coordinator | |
| 4 | Review condition ratings allocated to assets and use to determine Singleton appropriate useful lives. | Manager W&W | Engineer – Projects | December 2015 |
| 5 | Continue to measure community levels of service | | | Ongoing |
| 6 | Review and improve this plan at least annually to ensure updated data is available for budget consideration. | | | Ongoing |

7.3 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The AM Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the organisation's long term financial plan.

The AM Plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within one year of each Council election.

7.4 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into Council's long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan,
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the Council's Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

8. REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMG.
- IPWEA, 2011, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- "Our Place Blueprint 2023" Singleton Community Strategic Plan June 2013
- Singleton Council Resourcing Strategy June 2013
- Singleton Council TBL Water Supply Performance Report 2013-2014
- Singleton Council Water Supply Action Plan 2013-14 (attachment to TBL report)

9. APPENDICES

| | |
|------------|---|
| Appendix A | Maintenance Response Levels of Service |
| Appendix B | Projected 10 year Capital Renewal and Replacement Works Program |
| Appendix C | Projected 10 year Capital Upgrade/New Works Program |
| Appendix D | LTFP Budgeted Expenditures Accommodated in AM Plan |
| Appendix E | Abbreviations |
| Appendix F | Glossary |

Appendix A Maintenance Response Levels of Service

To be developed.

Appendix B Projected 10 year Capital Renewal and Replacement Works Program

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|-----------------|--------------|--|------|----|-------------------|----------------------|------------------|----------------------|
| 2470 | Water | Hardies Reservoir - roof: Water Reservoirs-Concrete-Roof | | | 0 | 2015 | \$3,434 | 26 |
| 2485 | Water | Minimbah Reservoir - roof: Water Reservoirs-Concrete-Roof | | | 0 | 2015 | \$3,434 | 23 |
| Subtotal | | | | | | | \$6,869 | |
| 1069 | Water | 20040802101122: Water Mains-Reticulation-<1.5m | | | 1 | 2016 | \$30,150 | 77 |
| 1070 | Water | 20040802101315: Water Mains-Reticulation-<1.5m | | | 1 | 2016 | \$22,276 | 108 |
| 2071 | Water | 20080825155027: Water Mains-Reticulation-<1.5m | | | 1 | 2016 | \$11,480 | 108 |
| 2469 | Water | Hardies Reservoir - structure: Water Reservoirs-Concrete-Structure | | | 1 | 2016 | \$16,905 | 27 |
| 2477 | Water | Judan Road Pump Station - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 1 | 2016 | \$37,490 | 48 |
| 2486 | Water | Minimbah Reservoir - structure: Water Reservoirs-Concrete-Structure | | | 1 | 2016 | \$16,905 | 24 |
| 2492 | Water | Naleen Pump Station - pump 1-mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 1 | 2016 | \$48,875 | 18 |
| 2493 | Water | Naleen Pump Station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 1 | 2016 | \$48,875 | 18 |
| 2502 | Water | Retreat Pump Station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 1 | 2016 | \$48,875 | 30 |
| Subtotal | | | | | | | \$281,831 | |
| 2464 | Water | Gowrie Pump Station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 2 | 2017 | \$57,730 | 48 |
| 2482 | Water | McDougalls Hill Pump station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 2 | 2017 | \$40,020 | 22 |
| Subtotal | | | | | | | \$97,750 | |
| 2450 | Water | Dalcumah Pump Station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 3 | 2018 | \$43,815 | 14 |
| 2452 | Water | Dalcumah Pump Station - pump 3 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 3 | 2018 | \$43,815 | 14 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|-----------------|--------------|--|------|----|-------------------|----------------------|------------------|----------------------|
| 2466 | Water | Gowrie Pump Station - pump 3 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 3 | 2018 | \$57,730 | 49 |
| 2500 | Water | Retreat Pump Station - pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 3 | 2018 | \$48,875 | 32 |
| 2515 | Water | Waterworks Lane Depot, Army Pump Station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 3 | 2018 | \$67,850 | 13 |
| Subtotal | | | | | | | \$262,085 | |
| 833 | Water | 20040729131451: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$18,180 | 111 |
| 835 | Water | 20040729131906: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$29,757 | 111 |
| 838 | Water | 20040729132737: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$26,137 | 111 |
| 839 | Water | 20040729133740: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$11,165 | 111 |
| 844 | Water | 20040729134402: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$11,588 | 111 |
| 845 | Water | 20040729134457: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$23,431 | 111 |
| 873 | Water | 20040729142241: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$14,718 | 111 |
| 1073 | Water | 20040802101811: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$584 | 80 |
| 1083 | Water | 20040802111904: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$871 | 111 |
| 1115 | Water | 20040802132917: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$11,113 | 111 |
| 1116 | Water | 20040802133054: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$21,977 | 111 |
| 1117 | Water | 20040802133141: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$16,135 | 111 |
| 1118 | Water | 20040802133243: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$21,425 | 111 |
| 1131 | Water | 20040802135554: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$11,968 | 82 |
| 1132 | Water | 20040802135645: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$12,192 | 82 |
| 1133 | Water | 20040802135737: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$15,028 | 82 |
| 1135 | Water | 20040802140035: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$19,001 | 82 |
| 1138 | Water | 20040802140415: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$23,078 | 82 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 1139 | Water | 20040802140633: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$23,521 | 82 |
| 1140 | Water | 20040802140750: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$10,934 | 82 |
| 1141 | Water | 20040802140826: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$14,190 | 82 |
| 1143 | Water | 20040802141018: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$23,466 | 82 |
| 1144 | Water | 20040802141059: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$1,405 | 82 |
| 1145 | Water | 20040802141146: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$14,921 | 82 |
| 1146 | Water | 20040802141250: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$18,779 | 82 |
| 1147 | Water | 20040802141417: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$914 | 82 |
| 1148 | Water | 20040802141609: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$26,646 | 82 |
| 1150 | Water | 20040802142214: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$12,686 | 111 |
| 1174 | Water | 20040802151413: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$13,889 | 111 |
| 1175 | Water | 20040802151555: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$14,834 | 111 |
| 1176 | Water | 20040802151642: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$9,999 | 111 |
| 1177 | Water | 20040802151752: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$13,800 | 111 |
| 1178 | Water | 20040802151837: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$12,471 | 111 |
| 1179 | Water | 20040802152007: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$275 | 111 |
| 1180 | Water | 20040802152120: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$15,850 | 111 |
| 1181 | Water | 20040802152232: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$18,528 | 111 |
| 1182 | Water | 20040802152439: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$17,069 | 111 |
| 1183 | Water | 20040802152515: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$14,145 | 111 |
| 1184 | Water | 20040802152604: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$29,199 | 111 |
| 1185 | Water | 20040802152651: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$2,768 | 111 |
| 1187 | Water | 20040802152852: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$11,366 | 111 |
| 1188 | Water | 20040802152927: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$23,555 | 111 |
| 1191 | Water | 20040802153223: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$18,420 | 111 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|-----------------|--------------|---|------|----|-------------------|----------------------|------------------|----------------------|
| 1196 | Water | 20040802154045: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$3,549 | 111 |
| 1233 | Water | 20040803092854: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$16,241 | 111 |
| 1234 | Water | 20040803093005: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$8,823 | 111 |
| 1290 | Water | 20040804115615: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$23,994 | 111 |
| 1687 | Water | 20070530114411: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$7,558 | 111 |
| 1688 | Water | 20070530114435: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$7,423 | 111 |
| 1689 | Water | 20070530114436: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$11,196 | 111 |
| 2038 | Water | 20080825113940: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$12,435 | 111 |
| 2039 | Water | 20080825114012: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$15,680 | 111 |
| 2070 | Water | 20080825154712: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$20,586 | 111 |
| 2227 | Water | 20090807094125: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$15,701 | 82 |
| 2274 | Water | 20100217131505: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$17,936 | 111 |
| 2352 | Water | 20110214150815: Water Mains-Reticulation-<1.5m | | | 4 | 2019 | \$14,724 | 82 |
| Subtotal | | | | | | | \$827,824 | |
| 921 | Water | 20040730102147: Water Mains-Reticulation-<1.5m | | | 5 | 2020 | \$811 | 80 |
| 922 | Water | 20040730102222: Water Mains-Reticulation-<1.5m | | | 5 | 2020 | \$6,741 | 80 |
| 932 | Water | 20040730105926: Water Mains-Reticulation-<1.5m | | | 5 | 2020 | \$10,852 | 80 |
| 998 | Water | 20040730140624: Water Mains-Reticulation-<1.5m | | | 5 | 2020 | \$13,669 | 80 |
| 1000 | Water | 20040730141013: Water Mains-Reticulation-<1.5m | | | 5 | 2020 | \$16,366 | 80 |
| 1001 | Water | 20040730141237: Water Mains-Reticulation-<1.5m | | | 5 | 2020 | \$9,853 | 80 |
| 2447 | Water | Dalcumah Pump Station - pump 1 - civil works: Water Pumping Stations-Distribution-Civil Works | | | 5 | 2020 | \$18,140 | 16 |
| 2463 | Water | Gowrie Pump Station - pump 2 - civil works: Water Pumping Stations-Distribution-Civil Works | | | 5 | 2020 | \$25,770 | 51 |
| 2478 | Water | Judan Road Pump Station- civil works: Water Pumping Stations-Distribution-Civil Works | | | 5 | 2020 | \$14,439 | 60 |
| Subtotal | | | | | | | \$116,640 | |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 2448 | Water | Dalcumah Pump Station - pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$43,815 | 17 |
| 2453 | Water | Glennies Creek Chlorine Gas dosing plant: Water Treatment Works-Water chlorinators-Mechanical/Electrical | | | 6 | 2021 | \$55,417 | 23 |
| 2454 | Water | Glennies Creek Pump Station - pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$112,490 | 40 |
| 2457 | Water | Glennies Creek Pump Station - pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$112,490 | 40 |
| 2458 | Water | Glennies Creek Pump Station - pump 3 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$112,490 | 40 |
| 2460 | Water | Gowrie Chlorine dosing plant: Water Treatment Works-Water chlorinators-Mechanical/Electrical | | | 6 | 2021 | \$55,417 | 23 |
| 2461 | Water | Gowrie Pump Station - pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$57,730 | 52 |
| 2473 | Water | Jerry's Plains Pump Station - mechanical and electrical : Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$34,960 | 16 |
| 2474 | Water | Jerry's Plains re-chlorination site: Water Treatment Works-Water chlorinators-Mechanical/Electrical | | | 6 | 2021 | \$55,417 | 39 |
| 2480 | Water | McDougalls Hill Pump station - pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$40,020 | 26 |
| 2487 | Water | Mt Thorley - re-chlorination : Water Treatment Works-Water chlorinators-Mechanical/Electrical | | | 6 | 2021 | \$55,417 | 41 |
| 2507 | Water | Singleton WTP Water chlorinator : Water Treatment Works-Water chlorinators-Mechanical/Electrical | | | 6 | 2021 | \$55,417 | 40 |
| 2511 | Water | Waterworks Lane Depot - re-chlorination : Water Treatment Works-Water chlorinators-Mechanical/Electrical | | | 6 | 2021 | \$55,417 | 22 |
| 2512 | Water | Waterworks Lane Depot, Army Pump Station - pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$67,850 | 16 |
| 2517 | Water | Waterworks Lane Depot, Army Pump Station - pump 3 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 6 | 2021 | \$67,850 | 16 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|-----------------|--------------|--|------|----|-------------------|----------------------|------------------|----------------------|
| Subtotal | | | | | | | \$982,195 | |
| 94 | Water | 20040719115401: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$25,519 | 48 |
| 95 | Water | 20040719140129: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,011 | 48 |
| 96 | Water | 20040719140458: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,709 | 48 |
| 97 | Water | 20040719140534: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,618 | 53 |
| 98 | Water | 20040719140703: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,610 | 53 |
| 99 | Water | 20040719142002: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$248 | 52 |
| 101 | Water | 20040719142616: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$30,300 | 54 |
| 102 | Water | 20040719142830: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,521 | 53 |
| 103 | Water | 20040719142943: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,946 | 52 |
| 104 | Water | 20040719143035: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,886 | 53 |
| 105 | Water | 20040719143102: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,115 | 54 |
| 106 | Water | 20040719143238: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,975 | 54 |
| 107 | Water | 20040719143628: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,180 | 53 |
| 108 | Water | 20040719143747: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,151 | 53 |
| 109 | Water | 20040719143808: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,121 | 54 |
| 110 | Water | 20040719150333: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,658 | 55 |
| 111 | Water | 20040719150643: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,673 | 54 |
| 112 | Water | 20040719150711: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,909 | 54 |
| 113 | Water | 20040719150903: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,691 | 63 |
| 114 | Water | 20040719151026: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,589 | 63 |
| 115 | Water | 20040719151619: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,786 | 58 |
| 116 | Water | 20040719151644: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,939 | 63 |
| 117 | Water | 20040719151858: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,311 | 55 |
| 118 | Water | 20040719152107: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,992 | 55 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 119 | Water | 20040719152254: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,522 | 55 |
| 120 | Water | 20040719152720: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,137 | 58 |
| 121 | Water | 20040719152811: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,511 | 58 |
| 122 | Water | 20040719152839: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,624 | 58 |
| 123 | Water | 20040719153259: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,266 | 55 |
| 124 | Water | 20040719153708: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,160 | 50 |
| 125 | Water | 20040719153823: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$3,835 | 55 |
| 126 | Water | 20040719154015: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,745 | 50 |
| 127 | Water | 20040719154640: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,039 | 50 |
| 191 | Water | 20040720132211: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,045 | 63 |
| 192 | Water | 20040720132323: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,905 | 63 |
| 193 | Water | 20040720132324: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,405 | 63 |
| 194 | Water | 20040720132502: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$58,867 | 63 |
| 203 | Water | 20040720133421: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,703 | 48 |
| 204 | Water | 20040720133422: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,054 | 52 |
| 205 | Water | 20040720133543: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,159 | 53 |
| 206 | Water | 20040720133636: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,030 | 52 |
| 207 | Water | 20040720133637: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$30,210 | 52 |
| 209 | Water | 20040720133936: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$27,291 | 52 |
| 210 | Water | 20040720133937: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$35,281 | 52 |
| 211 | Water | 20040720134043: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,687 | 54 |
| 212 | Water | 20040720134044: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$6,645 | 54 |
| 213 | Water | 20040720134408: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,641 | 55 |
| 214 | Water | 20040720134508: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,081 | 55 |
| 215 | Water | 20040720134509: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$19,246 | 55 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 216 | Water | 20040720134629: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,274 | 58 |
| 217 | Water | 20040720134730: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,757 | 58 |
| 218 | Water | 20040720134831: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,450 | 58 |
| 224 | Water | 20040720143244: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,299 | 58 |
| 225 | Water | 20040720143446: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,623 | 58 |
| 226 | Water | 20040720143447: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$24,933 | 58 |
| 337 | Water | 20040722091121: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,175 | 48 |
| 338 | Water | 20040722091428: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,807 | 48 |
| 339 | Water | 20040722092119: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$31,388 | 48 |
| 340 | Water | 20040722092734: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,372 | 48 |
| 341 | Water | 20040722093027: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,536 | 48 |
| 342 | Water | 20040722093755: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,469 | 48 |
| 343 | Water | 20040722094555: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$24,255 | 48 |
| 344 | Water | 20040722094912: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,277 | 48 |
| 345 | Water | 20040722104738: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,981 | 48 |
| 346 | Water | 20040722105046: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,930 | 48 |
| 347 | Water | 20040722105517: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$6,398 | 48 |
| 352 | Water | 20040722110741: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$27,056 | 48 |
| 353 | Water | 20040722110925: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$23,156 | 48 |
| 354 | Water | 20040722111108: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,617 | 48 |
| 377 | Water | 20040722132021: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,597 | 48 |
| 378 | Water | 20040722132211: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,241 | 48 |
| 379 | Water | 20040722132323: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$33,261 | 55 |
| 380 | Water | 20040722132551: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$42,508 | 58 |
| 381 | Water | 20040722132626: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$34,891 | 58 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 382 | Water | 20040722132713: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,846 | 58 |
| 383 | Water | 20040722132802: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$23,152 | 58 |
| 384 | Water | 20040722132825: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$24,042 | 58 |
| 423 | Water | 20040722154624: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$448 | 63 |
| 424 | Water | 20040722154837: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$891 | 58 |
| 426 | Water | 20040722155432: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$25,396 | 58 |
| 427 | Water | 20040722155549: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,035 | 63 |
| 432 | Water | 20040722160847: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$3,832 | 73 |
| 434 | Water | 20040722161250: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,877 | 73 |
| 436 | Water | 20040722161653: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,987 | 73 |
| 437 | Water | 20040722161833: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$20,662 | 73 |
| 440 | Water | 20040722162448: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,068 | 73 |
| 441 | Water | 20040722162801: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,642 | 73 |
| 442 | Water | 20040722162906: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,795 | 73 |
| 445 | Water | 20040722163546: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,536 | 73 |
| 446 | Water | 20040722163720: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,077 | 73 |
| 447 | Water | 20040722163841: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,158 | 73 |
| 448 | Water | 20040722164020: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,171 | 73 |
| 461 | Water | 20040723085104: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$216,736 | 49 |
| 462 | Water | 20040723085438: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$74,411 | 63 |
| 464 | Water | 20040723085703: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,674 | 49 |
| 544 | Water | 20040723135113: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$534 | 50 |
| 545 | Water | 20040723135141: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$26,255 | 50 |
| 546 | Water | 20040723135404: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$64,610 | 58 |
| 572 | Water | 20040723143959: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,072 | 58 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 573 | Water | 20040723144142: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,557 | 58 |
| 574 | Water | 20040723144213: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$403 | 58 |
| 575 | Water | 20040723144536: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,100 | 58 |
| 576 | Water | 20040723144605: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,987 | 58 |
| 577 | Water | 20040723144638: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,627 | 58 |
| 579 | Water | 20040723144818: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$6,453 | 58 |
| 580 | Water | 20040723144850: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$19,447 | 58 |
| 682 | Water | 20040727165252: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$28,938 | 49 |
| 788 | Water | 20040729105158: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$21,487 | 63 |
| 789 | Water | 20040729105351: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$22,397 | 63 |
| 790 | Water | 20040729105455: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,321 | 63 |
| 791 | Water | 20040729105607: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$85 | 73 |
| 794 | Water | 20040729110826: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$21,536 | 48 |
| 797 | Water | 20040729111256: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$829 | 48 |
| 799 | Water | 20040729111509: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,239 | 48 |
| 801 | Water | 20040729111729: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,874 | 48 |
| 805 | Water | 20040729112626: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,117 | 73 |
| 807 | Water | 20040729112956: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$20,539 | 73 |
| 809 | Water | 20040729113258: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,037 | 48 |
| 821 | Water | 20040729125439: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,204 | 73 |
| 842 | Water | 20040729134149: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$32,700 | 57 |
| 892 | Water | 20040729152448: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,504 | 56 |
| 903 | Water | 20040729155521: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,846 | 57 |
| 904 | Water | 20040729155926: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$28,650 | 57 |
| 905 | Water | 20040729160034: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,900 | 53 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 909 | Water | 20040730100159: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,152 | 53 |
| 910 | Water | 20040730100346: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,655 | 53 |
| 911 | Water | 20040730100454: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$192 | 56 |
| 912 | Water | 20040730100504: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,030 | 53 |
| 915 | Water | 20040730101134: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,479 | 56 |
| 916 | Water | 20040730101303: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,509 | 50 |
| 917 | Water | 20040730101341: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,395 | 50 |
| 918 | Water | 20040730101816: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,489 | 50 |
| 919 | Water | 20040730101943: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,919 | 50 |
| 920 | Water | 20040730102053: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,277 | 50 |
| 938 | Water | 20040730110711: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$24,259 | 55 |
| 939 | Water | 20040730110857: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,719 | 55 |
| 942 | Water | 20040730111349: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$6,261 | 53 |
| 943 | Water | 20040730111437: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$675 | 55 |
| 944 | Water | 20040730111515: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,363 | 55 |
| 945 | Water | 20040730111616: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,249 | 55 |
| 946 | Water | 20040730111740: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$3,503 | 55 |
| 947 | Water | 20040730112525: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,468 | 56 |
| 948 | Water | 20040730112656: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,540 | 50 |
| 949 | Water | 20040730112849: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$21,111 | 50 |
| 950 | Water | 20040730113026: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,248 | 50 |
| 951 | Water | 20040730113144: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,164 | 56 |
| 952 | Water | 20040730113238: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,058 | 56 |
| 954 | Water | 20040730113657: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,131 | 50 |
| 955 | Water | 20040730113811: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,328 | 50 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 956 | Water | 20040730114013: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,165 | 56 |
| 957 | Water | 20040730114219: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,420 | 55 |
| 958 | Water | 20040730114314: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,096 | 55 |
| 959 | Water | 20040730114443: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,190 | 55 |
| 960 | Water | 20040730114530: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,868 | 55 |
| 963 | Water | 20040730114833: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,116 | 56 |
| 964 | Water | 20040730114957: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,323 | 56 |
| 965 | Water | 20040730115203: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,492 | 56 |
| 966 | Water | 20040730115350: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,049 | 56 |
| 967 | Water | 20040730115521: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,609 | 56 |
| 968 | Water | 20040730115605: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,167 | 56 |
| 969 | Water | 20040730115716: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,149 | 56 |
| 970 | Water | 20040730115842: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$762 | 56 |
| 971 | Water | 20040730131406: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$20,390 | 56 |
| 972 | Water | 20040730131559: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,874 | 56 |
| 973 | Water | 20040730131613: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,987 | 56 |
| 974 | Water | 20040730131817: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,516 | 56 |
| 977 | Water | 20040730132241: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,034 | 56 |
| 978 | Water | 20040730132254: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,220 | 57 |
| 984 | Water | 20040730134217: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,567 | 57 |
| 987 | Water | 20040730134447: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,818 | 57 |
| 988 | Water | 20040730134536: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$3,275 | 57 |
| 989 | Water | 20040730134727: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,077 | 57 |
| 990 | Water | 20040730134927: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,145 | 57 |
| 991 | Water | 20040730135030: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,796 | 49 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 992 | Water | 20040730135213: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,552 | 57 |
| 1024 | Water | 20040730150525: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,506 | 56 |
| 1025 | Water | 20040730150634: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,652 | 56 |
| 1029 | Water | 20040730151001: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,466 | 63 |
| 1033 | Water | 20040730154443: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,689 | 49 |
| 1035 | Water | 20040730154631: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,115 | 61 |
| 1036 | Water | 20040730154752: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,853 | 61 |
| 1037 | Water | 20040730154851: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,886 | 61 |
| 1038 | Water | 20040730155047: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,110 | 61 |
| 1039 | Water | 20040730155247: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,664 | 66 |
| 1040 | Water | 20040730155315: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,452 | 66 |
| 1041 | Water | 20040730155413: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,752 | 66 |
| 1048 | Water | 20040730160750: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,823 | 70 |
| 1049 | Water | 20040730160857: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,724 | 70 |
| 1050 | Water | 20040730161027: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,446 | 70 |
| 1051 | Water | 20040802093743: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,696 | 58 |
| 1052 | Water | 20040802094009: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,970 | 58 |
| 1054 | Water | 20040802094554: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,042 | 65 |
| 1057 | Water | 20040802094838: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,438 | 67 |
| 1063 | Water | 20040802100031: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,359 | 67 |
| 1068 | Water | 20040802100958: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,333 | 70 |
| 1071 | Water | 20040802101554: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,265 | 70 |
| 1072 | Water | 20040802101703: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,185 | 62 |
| 1074 | Water | 20040802102130: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,003 | 62 |
| 1075 | Water | 20040802102214: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,292 | 63 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 1076 | Water | 20040802102326: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,733 | 63 |
| 1077 | Water | 20040802110406: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,820 | 64 |
| 1078 | Water | 20040802110538: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,739 | 64 |
| 1079 | Water | 20040802110813: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,641 | 64 |
| 1084 | Water | 20040802111937: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,724 | 73 |
| 1107 | Water | 20040802125846: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,534 | 48 |
| 1142 | Water | 20040802140953: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,428 | 75 |
| 1156 | Water | 20040802142919: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$18,756 | 48 |
| 1158 | Water | 20040802143119: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$19,903 | 48 |
| 1189 | Water | 20040802153049: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,128 | 73 |
| 1190 | Water | 20040802153138: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,687 | 73 |
| 1192 | Water | 20040802153358: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$20,432 | 48 |
| 1202 | Water | 20040802155722: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,726 | 65 |
| 1203 | Water | 20040802160058: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$25,731 | 75 |
| 1204 | Water | 20040802160134: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,254 | 75 |
| 1236 | Water | 20040803093403: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$6,588 | 53 |
| 1247 | Water | 20040803100307: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$54,924 | 48 |
| 1248 | Water | 20040803101056: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$30,486 | 55 |
| 1252 | Water | 20040803102403: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$31,321 | 55 |
| 1254 | Water | 20040803105924: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,170 | 75 |
| 1255 | Water | 20040803110044: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$786 | 75 |
| 1256 | Water | 20040803110115: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,202 | 75 |
| 1267 | Water | 20040803112010: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,700 | 75 |
| 1269 | Water | 20040803112225: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$10,646 | 75 |
| 1270 | Water | 20040803112328: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,093 | 73 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 1271 | Water | 20040803112750: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,362 | 75 |
| 1272 | Water | 20040803112855: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,066 | 75 |
| 1273 | Water | 20040803113001: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,290 | 75 |
| 1274 | Water | 20040803113043: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,649 | 75 |
| 1275 | Water | 20040803113144: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,430 | 75 |
| 1276 | Water | 20040803113313: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$12,238 | 75 |
| 1278 | Water | 20040803113838: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,680 | 64 |
| 1279 | Water | 20040803113941: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,950 | 64 |
| 1283 | Water | 20040804091848: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,495 | 58 |
| 1284 | Water | 20040804102032: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$16,743 | 64 |
| 1286 | Water | 20040804102506: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,570 | 58 |
| 1293 | Water | 20040809083525: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$22,099 | 58 |
| 1294 | Water | 20040809084637: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,058 | 54 |
| 1353 | Water | 20050119115955: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,019 | 67 |
| 1354 | Water | 20050119115956: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,105 | 64 |
| 1355 | Water | 20050125153717: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,896 | 58 |
| 1491 | Water | 20050825093457: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$6,698 | 25 |
| 1506 | Water | 20050916123305: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$17,995 | 63 |
| 1582 | Water | 20070109112937: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$36,748 | 49 |
| 1671 | Water | 20070412101444: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,398 | 50 |
| 1675 | Water | 20070530085238: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$127,964 | 48 |
| 1680 | Water | 20070530092017: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,203 | 35 |
| 1683 | Water | 20070530092904: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,589 | 75 |
| 1684 | Water | 20070530092905: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$7,398 | 75 |
| 1686 | Water | 20070530103822: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$605 | 57 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------|--------------|--|------|----|-------------------|----------------------|-----------------|----------------------|
| 1710 | Water | 20070906161133: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,254 | 48 |
| 1790 | Water | 20080623094154: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$859 | 56 |
| 1791 | Water | 20080623094155: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$14,161 | 56 |
| 1792 | Water | 20080623094310: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,569 | 56 |
| 1793 | Water | 20080623094311: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$251 | 56 |
| 2063 | Water | 20080825150749: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$13,636 | 73 |
| 2113 | Water | 20080929145321: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$68,878 | 49 |
| 2119 | Water | 20090122113042: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$8,894 | 73 |
| 2157 | Water | 20090421143724: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,800 | 55 |
| 2158 | Water | 20090421144011: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$3,191 | 55 |
| 2160 | Water | 20090421144731: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$190 | 48 |
| 2161 | Water | 20090421144750: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$391 | 48 |
| 2203 | Water | 20090708140246: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,659 | 48 |
| 2212 | Water | 20090727104131: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$11,543 | 52 |
| 2235 | Water | 20090812094630: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$511,663 | 49 |
| 2242 | Water | 20090902133239: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$42,632 | 55 |
| 2271 | Water | 20100217115249: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$597 | 57 |
| 2272 | Water | 20100217115617: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$105 | 57 |
| 2273 | Water | 20100217115943: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$4,581 | 57 |
| 2313 | Water | 20100831091123: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$9,850 | 63 |
| 2329 | Water | 20101029131358: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$364 | 48 |
| 2342 | Water | 20101129092545: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$87 | 57 |
| 2343 | Water | 20101129093231: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$128 | 56 |
| 2350 | Water | 20110214144918: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$2,686 | 48 |
| 2403 | Water | 20120713102136: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$15,290 | 56 |

| Asset ID | Sub Category | Asset Name | From | To | Rem Life in Years | Planned Renewal Year | Renewal Cost \$ | Useful Life in years |
|----------------------|--------------|---|------|----|-------------------|----------------------|--------------------|----------------------|
| 2420 | Water | 20121122093141: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$5,551 | 57 |
| 2421 | Water | 20121122094436: Water Mains-Reticulation-<1.5m | | | 8 | 2023 | \$1,493 | 57 |
| 2439 | Water | Broke Pump Station -pump 1 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 8 | 2023 | \$42,550 | 15 |
| 2441 | Water | Broke Pump Station -pump 2 - mechanical and electrical: Water Pumping Stations-Distribution-Mechanical/Electrical | | | 8 | 2023 | \$42,550 | 15 |
| 2489 | Water | Mt Thorley Reservoir – Steel Stand Pipe - roof: Water Reservoirs-Steel-Roof | | | 8 | 2023 | \$76,957 | 43 |
| Subtotal | | | | | | | \$4,388,793 | |
| | | | | | | | | |
| Program Total | | | | | | | \$6,963,987 | |

Appendix C Projected Upgrade/Exp/New 10 year Capital Works Program

Scenario 2

| Year | Capital Upgrade and New Projects | Estimate (\$000) |
|------|---|------------------|
| 2015 | Bridgman Ridge/Hunter Green - 1500x250mm, 2015x375mm water main | \$388 |
| 2015 | Hunterview valve CV4 | \$70 |
| 2015 | Pinnacle Estate/ - 3335mmx200mm main | \$35 |
| 2015 | Gowrie Links 300m x150mm main, 1000m x200mm main | \$16 |
| 2015 | New Works - ILOS / Minor Plant & Equipment - Broke Water Mains | \$47 |
| | | \$556 |
| 2016 | Bridgeman Ridge Reservoir new capital | \$144 |
| 2016 | Bridgman Ridge/Hunter Green - valve A/CV | \$70 |
| 2016 | Gowrie Links 300m x150mm main, 1000m x200mm main | \$16 |
| 2016 | New Works - ILOS / Minor Plant & Equipment - Jerrys Plains Mains | \$47 |
| | | \$277 |
| 2017 | Gowrie Links 300m x150mm main, 1000m x200mm main | \$16 |
| 2017 | New Works - ILOS / Minor Plant & Equipment | \$5 |
| | | \$21 |
| 2018 | New Works - ILOS / Minor Plant & Equipment | \$5 |
| | | \$5 |
| 2019 | New Works - ILOS / Minor Plant & Equipment | \$5 |
| | | \$5 |
| 2020 | Maison Dieu Industrial Estate / Pressure Boost | \$37 |
| 2020 | New Works - ILOS / Minor Plant & Equipment | \$5 |
| | | \$42 |
| 2021 | New Works - ILOS / Minor Plant & Equipment - WTP upgrade for WQ Improvement (GAC Plant) | \$8,005 |
| 2021 | New buildings & plants purchase / Plant purchases | \$37 |
| | | \$8,042 |
| 2022 | Gresford Road / Booster pump station, elevated tank (100kl) | \$198 |
| 2022 | Gresford Road / Delivery main 1860x 80mm main, Pump line 1070 x 100mm main , | \$211 |
| 2022 | New Works - ILOS / Treatment Plant Improvement , Minor plant & Equipment | \$255 |
| 2022 | New buildings & plants purchase /Buildings | \$64 |
| | | \$728 |
| 2023 | New Works - ILOS / Minor Plant & Equipment | \$5 |
| | | \$5 |

| Year | Capital Upgrade and New Projects | Estimate (\$000) |
|------|--|------------------|
| 2024 | New Works ILOS / Minor plant & equipment/Jerrys Plains -Quality Improvement (Iron Removal) | \$535 |
| 2024 | Gresford Road/ Gowrie/McDougalls Reservoir Interconnection | \$500 |
| | | \$1,035 |
| | | |
| | Total Projected Capital Upgrade/ New Plan | \$10,716 |

Appendix D Budgeted Expenditures Accommodated in LTFP

NAMS.PLUS3 Asset Management

Singleton

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JRA

Water Supply 2015_S2_V1 Asset Management Plan

First year of expenditure projections 2015 (financial yr ending)

Water Supply 2015

Asset values at start of planning period

| | |
|------------------------------|-----------------|
| Current replacement cost | \$130,000 (000) |
| Depreciable amount | \$121,700 (000) |
| Depreciated replacement cost | \$83,000 (000) |
| Annual depreciation expense | \$1,800 (000) |

Calc CRC from Asset Register

\$0 (000)

This is a check for you.

Operations and Maintenance Costs for New Assets

| | |
|-----------------------------|------------------|
| | % of asset value |
| Additional operations costs | 2.66% |
| Additional maintenance | 0.93% |
| Additional depreciation | 1.48% |

Planned renewal budget (information only)

You may use these values
calculated from your data
or overwrite the links.

Planned Expenditures from LTFP

20 Year Expenditure Projections

Note: Enter all values in current 2015 values

| Financial year ending | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 |
| Expenditure Outlays included in Long Term Financial Plan (in current \$ values) | | | | | | | | | | |
| Operations | | | | | | | | | | |
| Operations budget | \$1,481 | \$1,978 | \$1,543 | \$1,618 | \$1,592 | \$1,673 | \$1,772 | \$1,880 | \$1,880 | \$1,880 |
| Management budget | \$1,607 | \$1,275 | \$1,690 | \$1,741 | \$1,868 | \$1,855 | \$1,902 | \$1,959 | \$1,711 | \$1,711 |
| AM systems budget | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total operations | \$3,088 | \$3,253 | \$3,233 | \$3,359 | \$3,460 | \$3,528 | \$3,674 | \$3,839 | \$3,591 | \$3,591 |
| Maintenance | | | | | | | | | | |
| Reactive maintenance budget | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Planned maintenance budget | \$1,076 | \$1,086 | \$1,150 | \$1,184 | \$1,286 | \$1,287 | \$1,294 | \$1,342 | \$1,180 | \$1,180 |
| Specific maintenance items budget | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total maintenance | \$1,076 | \$1,086 | \$1,150 | \$1,184 | \$1,286 | \$1,287 | \$1,294 | \$1,342 | \$1,180 | \$1,180 |
| Capital | | | | | | | | | | |
| Planned renewal budget | \$1,442 | \$1,857 | \$1,111 | \$924 | \$883 | \$897 | \$911 | \$858 | \$1,105 | \$1,105 |
| Planned upgrade/new budget | \$983 | \$294 | \$341 | \$350 | \$343 | \$347 | \$345 | \$348 | \$726 | \$726 |
| Non-growth contributed asset value | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Asset Disposals | | | | | | | | | | |
| Est Cost to dispose of assets | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Carrying value (DRC) of disposed assets | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan) | | | | | | | | | | |
| Additional Expenditure Outlays required and not included above | 2015 \$000 | 2016 \$000 | 2017 \$000 | 2018 \$000 | 2019 \$000 | 2020 \$000 | 2021 \$000 | 2022 \$000 | 2023 \$000 | 2024 \$000 |
| Operations | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Maintenance | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Capital Renewal | to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used) | | | | | | | | | |
| Capital Upgrade | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| User Comments #2 | | | | | | | | | | |
| Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C) | | | | | | | | | | |
| Forecast Capital Renewal from Forms 2A & 2B | 2015 \$000 | 2016 \$000 | 2017 \$000 | 2018 \$000 | 2019 \$000 | 2020 \$000 | 2021 \$000 | 2022 \$000 | 2023 \$000 | 2024 \$000 |
| Forecast Capital Upgrade from Form 2C | \$703 | \$995 | \$655 | \$722 | \$582 | \$529 | \$773 | \$973 | \$669 | \$529 |
| | \$556 | \$277 | \$21 | \$5 | \$5 | \$42 | \$8,042 | \$728 | \$5 | \$1,035 |

Appendix E Abbreviations

| | |
|----------------|---|
| AAAC | Average annual asset consumption |
| AM | Asset management |
| AM Plan | Asset management plan |
| ARI | Average recurrence interval |
| ASC | Annual service cost |
| BOD | Biochemical (biological) oxygen demand |
| CRC | Current replacement cost |
| CWMS | Community wastewater management systems |
| DA | Depreciable amount |
| DRC | Depreciated replacement cost |
| EF | Earthworks/formation |
| IRMP | Infrastructure risk management plan |
| LCC | Life Cycle cost |
| LCE | Life cycle expenditure |
| LTFP | Long term financial plan |
| MMS | Maintenance management system |
| PCI | Pavement condition index |
| RV | Residual value |
| SoA | State of the Assets |
| SS | Suspended solids |
| vph | Vehicles per hour |
| WDCRC | Written down current replacement cost |

Appendix F Glossary

Annual service cost (ASC)

- 1) Reporting actual cost
The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
- 2) For investment analysis and budgeting
An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Deferred maintenance

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

Expenses

Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Financing gap

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost *

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure

The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**

Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

- **Reactive maintenance**

Unplanned repair work that is carried out in response to service requests and management/supervisory directions.

- **Specific maintenance**

Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

- **Unplanned maintenance**

Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operations

Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Operating expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense

The gross outflow of economic benefits, being cash and non cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operating expenses

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio

Ratio of estimated budget to projected expenditure for operations, maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Operations, maintenance and renewal gap

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of annual asset renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *

A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the Council.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.