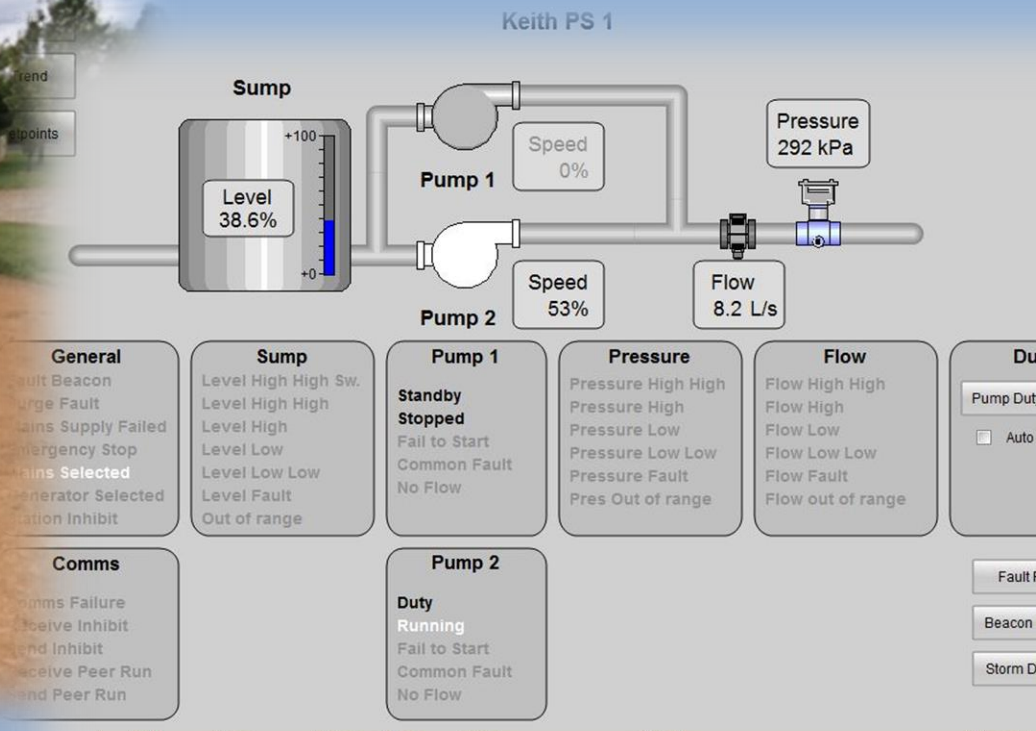
Tatiara
the good country

Community Wastewater Management Systems

Asset Management Plan

Version 2.1 | June 2017



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2	10/09/2012	Minor Changes for Council adoption	Aaron Hillier Asset Systems Coordinator	Manager Technical Services	Council
3	23/11/2016	Comprehensive review of plan	Aaron Hillier Asset Systems Coordinator	Surya Prakash Manager Technical Services	Council
4	1/08/2017	Complete comprehensive review for Council Adoption – adopted 12/09/2017	Aaron Hillier Asset Systems Coordinator	Surya Prakash Manager Technical Services	Council

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1. EXECUTIVE SUMMARY

Context

The fundamental purpose of this Community Waste Management System Asset Management (CWMS) Plan is to improve Council's long-term strategic management of its infrastructure assets on behalf of the community. This is the first comprehensive review of this CWMS Asset Management Plan.

Council's goal in managing CWMS assets is to meet the required level of services in the most cost effective manner, meet legislative and licencing conditions of the systems and maintain CWMS infrastructure to develop and support sustainable communities in the Tatiara.

Tatiara District Council has four CWMS schemes located in the townships of Bordertown, Keith, Mundulla & Wolseley. Network assets (underground pipes, manholes and connection points) are considered to be in the middle of their lifecycle and the pump stations have all been replaced and upgraded in the last four years. This Plan provides long-term strategies for the replacement, upgrading and management of the social, economic and environmental risks associated with the operation of these assets.

The CWMS Service

The CWMS network comprises four schemes:

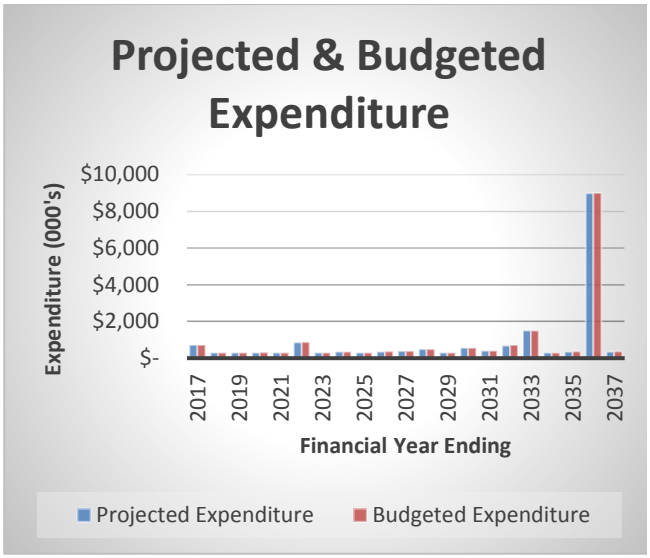
Bordertown	
Constructed	1966
Asset Type	Quantities
Pump Station and associated assets	8
Rising Mains	6822m
Gravity Line	38020m
Connection Points	1530
Manholes	244
Flushing Points	326
Oxidation Lagoons	3
Keith	
Constructed	1985
Asset Type	Quantities
Pump Station and associated assets	10
Rising Mains	10198m
Gravity Line	15270m
Connection Points	586
Manholes	9
Flushing Points	280
Oxidation Lagoons	2
Mundulla	
Constructed	1983
Asset Type	Quantities
Pump Station and associated assets	1
Rising Mains	1018m
Gravity Line	2938m
Connection Points	100
Manholes	6
Flushing Points	46
Oxidation Lagoons	1
Wolseley	
Constructed	1992
Asset Type	Quantities
Pump Station and associated assets	1
Rising Mains	1045m
Gravity Line	3087m
Connection Points	81
Manholes	3
Flushing Points	41
Oxidation Lagoons	1

These infrastructure assets have a replacement value of $25,555,000.

What does it Cost?

The projected cost to provide the services covered by this Asset Management Plan includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is $4,020,000 or $401,000 per year. For the period of this plan expenditure for asset renewal is minimal with large spikes in future years. The CWMS reserve is allocated to cater for these spikes.

Current revenue from CWMS charges is $811,000 per annum and reserves of $5,715,000 indicates that Council is able to provide the current level of service with the existing revenue. Projected and budgeted expenditure are shown in the graph below.



What we will do

Council plans to provide CWMS services for the following:

- Operation, maintenance, renewal and upgrade of pump stations, pipelines, manholes and lagoons to meet service levels set by council in annual budgets.
- Replace 17 pump stations and install a supervisory control and data acquisition (SCADA) within the 10 year planning period.

Council is in the fortunate position of having built up reserves for the maintenance and renewal of its CWMS infrastructure. However, diligence must be taken to ensure the use of these funds are optimised to ensure the long-term sustainability of current service levels and that the community is not overcharged or undercharged for the services provided now and into the future.

Current information indicates that existing CWMS reserves and annual charges are sufficient to carry out all the required activities to ensure service levels are met and infrastructure upgraded to modern day standards to reduce risk into the future.

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:

- Aging pipe line (gravity and rising main) failing causing environmental harm and economic risks
- Pump Station breakdown due to power failure

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

- Monitoring the condition of aging infrastructure and replacing as needed.
- Keep emergency procedures up to date and purchase suitable generators in case of major power outage

The Next Steps

The actions resulting from this asset management plan are:

- Continue to monitor the condition of underground pipelines
- Increase planned maintenance
- Record all maintenance works and infrastructure failure events

Questions you may have

What is this plan about?

This asset management plan covers the infrastructure assets that serve the Tatiara Community's CWMS needs. These assets include pumping stations, pipes, manholes and lagoons throughout the Council area that enable people to dispose of waste water.

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 level 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.

Is there a funding shortfall?

Current data and information indicates that the current funding of Council's CWMS assets is adequate to ensure the long-term sustainability of the four schemes.

All 20 pump stations have been renewed and upgraded and are in excellent condition with very little renewal expenditure over the life of this plan. The majority of network infrastructure (pipes, manholes, flushing points, connection points) have the same acquisition dates for each of the four schemes and are expected to have similar lifespans causing spikes in capital expenditure when this infrastructure reaches end of useful life. Council is positioned well to deal with these spikes with funding from the CWMS reserve.

What options do we have?

While current data indicates that Council is well positioned to fund the current service levels provided by CWMS infrastructure it is imperative that future renewal, upgrade and maintenance regimes are optimised to ensure rate payers are receiving CWMS services at the lowest possible price. This can be done by ensuring the following:

1. Improving asset knowledge so that data accurately records the asset inventory, how assets are performing and when assets are not able to provide the required service levels,
2. Improving our efficiency in operating, maintaining, replacing existing and constructing new assets to optimise life cycle costs,
3. Identifying and managing risks associated with providing services from infrastructure,
4. Making trade-offs between service levels and costs to ensure that the community receives the best return from infrastructure,
5. Identifying assets surplus to needs for disposal to make savings in future operations and maintenance costs
6. Consulting with the community to ensure that CWMS services and costs meet community needs and are affordable,
7. Developing partnership with other bodies, where available to provide services;
8. Seeking additional funding from governments and other bodies to better reflect a 'whole of government' funding approach to infrastructure services.

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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.

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

- Strategic Management Plan – The Strategic Management Plan provides a focus for Council's service delivery over a three year period
- Development Plan – The development Plan has two purposes. Firstly, it sets our objectives to guide the type and location of future developments across the Council areas. Secondly, it provides the detail for the assessment of individual development proposals through the establishment of a network of zones together with detailed criteria against which development application are assessed.
- Long Term Financial Plan – This plan outlines all aspects of the key financial strategy objectives and commitments. Since financial resources are limited, the long term financial plan will both inform and interpret the Strategic Management Plan
- Annual Budget – The Budget details resources needed to deliver services on an annual basis. In addition, it outlines the service delivery programs and projects of the Council and details performance measures (both financial and non-financial) in which the efficiency and effectiveness of the service delivery can be gauged.
- CWMS Operation and Maintenance Manual for each scheme – Details each systems components, maintenance regimes, contingency planning, system monitoring and recording regimes.
- CWMS Risk Management Plan – Details and analyses the risks involved with managing Council's CWMS infrastructure and plans to minimise these risks within available resources and budgets.
- Safety, Reliability, Maintenance & Technical Management Plan (SRMTMP) – Developed to meet the requirements of the Water Industry Act 2012 and associated Water Industry Regulations 2012 as required by the Technical Regulator.

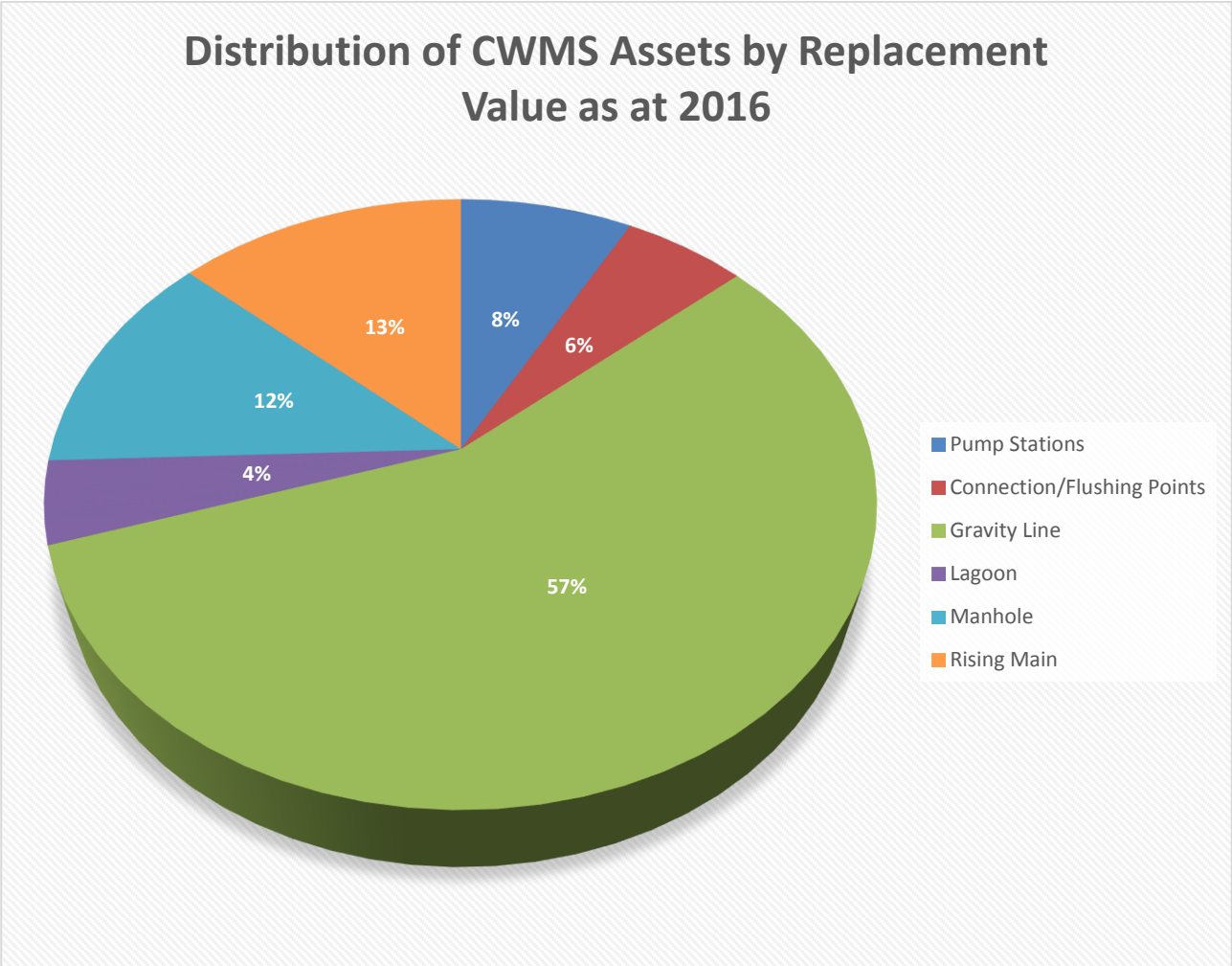
The infrastructure assets covered by this asset management plan are shown in Table 2.1.

Table 2.1: Assets covered by this Plan

Asset category	Count/Length	Replacement Value
Pump Stations	20	$2,033,000
Gravity Drains	559315 m	$14,416,000
Rising Main	19083 m	$3,412,000
Manholes	262	$3,130,000
Connection/Flushing Points	2990	$1,444,000
Lagoons	4 Lagoons systems	$1,120,000
TOTAL		**$25,555,000**

Valuation as at 1st July 2016

Figure 1: Distribution of CWMS Assets by Replacement Value



2.2 Goals and Objectives of Asset Management

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

Council's goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach,
- Developing cost-effective management strategies for the long term,
- Providing a defined level of service and monitoring performance,
- Understanding and meeting the demands of growth through demand management and infrastructure investment,
- Managing risks associated with asset failures,
- Sustainable use of physical resources,
- Continuous improvement in asset management practices.[1]

The goal of this asset management plan is to:

- Document the services/service levels to be provided and the costs of providing the service,

[1] IPWEA, 2006, *IIMM* Sec 1.1.3, p 1.3.

- Communicate the consequences for service levels and risk, where desired funding is not available, and
- Provide information to assist decision makers in trading off service levels, costs and risks to provide services in a financially sustainable manner.

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

Council's vision is:

"Shaping a sustainable future by realising the potential of our people and region"

Relevant goals and objectives and how these are addressed in this asset management plan are shown in Table 2.2.

Table 2.2: Organisation Goals and how these are addressed in this Plan

Objective	Strategic Goal	Strategy	How Goal and Objectives are addressed in AMP
2.1	1. Plan for & Provide infrastructure appropriate to the community's needs	2.1.1 Prudently review & manage Council's AMP's with its LTFP 2.1.2 Improve the safety of the community	This AMP includes a 10 year priority based asset maintenance and replacement program for CWMS assets for the long-term sustainability, amenity and safety of the community. The AMP is linked to the CWMS risk management plan which aims at reducing and improving safety for the public and staff working on the schemes

2.3 Plan Framework

Key elements of the plan are

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

2.4 Core and Advanced Asset Management

This asset management plan is the first comprehensive review of the original CWMS asset management plan. It is prepared as a 'core' asset management plan in accordance with the International Infrastructure Management Manual[2]. 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.

[2] IPWEA, 2006.

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 Council. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability to pay for the service.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Council has not carried out any research on customer expectations. This will be investigated for future updates of the asset management plan.

3.2 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. Relevant legislation is shown in Table 3.2.

Table 3.2: Legislative Requirements

Legislation	Requirement
Local Government Act 1934 and 1999	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.
Local Government (Financial Management and Rating) Amendment Act 2005	Impetus for the development of a Strategic Management Plan, comprising an (Infrastructure) Asset Management Plan and Long-term Financial Plan
Environmental Protection Act 1993	This Act places a 'duty of care' on people not to undertake activities that will cause environmental harm.
Public and Environmental Health Act 1987	This Act consolidates previous Acts relating to Public Health and provides for the prevention and spread of disease. It covers the responsibility for administering waste control systems. It covers all schemes that are not the responsibility of SA Water.
Work Health and Safety Act 2012 and regulations 2012	An Act to provide for the health, safety and welfare of persons at work.
Environmental Protection (Water Quality) Policy 2015	The principal object of this policy is to achieve the sustainable management of water, by protecting or enhancing water quality while allowing economic and social development. The policy has several obligations which are required to be adhered to such as; • General obligation to avoid discharge etc into waters • Obligation no to cause certain environmental harm • Obligation not to contravene water quality criteria listed in (Schedule 2)
Development Act 1993	An Act to provide for planning and regulate development in the State; to regulate the use and management of land and buildings; to make provision for the maintenance and conservation of land and buildings where appropriate; and for other purposes.
Water Industry Act 2012 and Regulations	An act to facilitate planning and regulation for water and sewerage infrastructure.

3.3 Current Levels of Service

Council has defined service levels in two terms.

Community Levels of Service relate to the service outcomes that the community wants in terms of safety, quality, quantity, reliability, responsiveness, cost effectiveness and legislative compliance.

Community levels of service measures used in the asset management plan are:

Quality	How good is the service?
Function	Does it meet users' needs?
Safety	Is the service safe?

Technical Levels of Service - Supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the council undertakes to best achieve the desired community outcomes.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as electricity costs, EPA licencing cost, etc.
- Maintenance – the activities necessary to retain an assets as near as practicable to its original condition (eg Pump station inspections, septic tank desludging, drain flushing etc),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (eg pipeline replacement),
- Upgrade – the activities to provide a higher level of service (eg replacing a pipeline or pump with a larger size) or a new service that did not exist previously (eg a new scheme).

Council's current service levels are detailed in Table 3.3.

Table 3.3: Current Service Levels

Key Performance Measure	Level of Service Objective	Performance Measure Process	Desired Level of Service	Current Level of Service
COMMUNITY LEVELS OF SERVICE				
Quality	Well Maintained and suitable wastewater collection and disposal system	Customer service complaints	To be determined	7 complaints in 1 year
Quality	Provide a system with minimal break downs	System works records		Records to be collated
Function	Meet EPA standards	Compliance with EPA licence approval conditions	Zero non-compliance issues per year identified from annual report to EPA	0 non-compliance issues reported
Environment/Safety	Provide adequate effluent disposal systems to maintain public health standards and prevent environmental harm	Customer reported accidents Number of mandatory incident reported to EPA	≥1 pa ≥1 spill of effluent >10kl pa	Zero Zero
TECHNICAL LEVELS OF SERVICE				
Operations	Infrastructure meets user's needs	Compliance with EPA Licence reporting and monitoring requirements Remote monitoring and logging of pump stations Review and update of Operation and Maintenance manuals for each scheme	Annual reporting verification and compliance Remote monitoring and logging on all pump stations excluding minor pump stations Annual	Compliant SCADA 24 hour monitoring on all 20 pump stations - compliant Compliant
Maintenance	Provide a well maintained system	Pump stations inspected and maintained	Monthly	bi monthly
		Manholes inspected and maintained	Every three years	Completed 2012 and in 2017
		Gravity drain flushing	To be determined	To be determined – currently budgeted for every 10 years
		Septic tank desludging program	5 Yearly	5 Yearly

		Pipework Inspections & condition monitoring. Capture of CCTV footage	Inspection carried out every 5-7 years on a representative sample of the network	Assessment carried out on 7.5% on the network
		Reactive maintenance budget No. of call outs	$82000 To be collated	To be reduced over five years To be determined
Renewal	Provide a safe and compliant CWMS system	Compliance with Dept Housing CWMS design criteria	All pump stations comply	All pump stations comply with modern day standards and storage requirements are met
Upgrade/New	Provide a safe and compliant CWMS system	Compliance with Dept Housing design criteria	All pump stations comply	All pump stations comply

3.4 Desired Levels of Service

At present, indications of desired levels of service are obtained from various sources including residents' feedback to Councillors and staff, service requests and technical standards. Council has yet to quantify some desired levels of service. This will be done in future revisions of this asset management plan.

4. FUTURE DEMAND

4.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc.

Demand factor trends and impacts on service delivery are summarised in Table 4.1.

Table 4.1: Demand Factors, Projections and Impact on Services

Demand factor	Present position	Projection	Impact on services
Population	Bordertown 2378 Keith 1014 Mundulla 153 Wolseley 53	Population estimates are projected to remain stable within the district over the planning period of this document (Dept of Planning and Local Government 2011) and it is envisaged this will be very similar for the townships as well	Nil
Demographics		Aging population (Dept of Planning and Local Government 2011)	Minor reduction in waste water production
Events	No events or increases in population during the year	No event or increases in population during the year	Nil
Environmental awareness/rising water cost	Moderate costs for water and general environmental awareness	Increased water costs and environmental awareness	Minor reduction in waste water production

4.2 Changes in Technology

Technology changes are forecast to have little effect on the delivery of services covered by this plan in the short term, however the following table highlights areas that technology is likely to have an impact on service delivery in the medium to long term.

Technology changes forecast to affect the delivery of services covered by this plan are detailed in Table 4.2.

Table 4.2: Changes in Technology and Forecast effect on Service Delivery

Technology Change	Effect on Service Delivery
Developments in communications and remote monitoring technology	Improved service delivery, reduced risk of service failure and reduced response times to service failures
Underground pipeline renewal technology	Improved replacement techniques and lower replacement costs

4.3 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 providing the required service without the need for the council to own the assets. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another council area or public toilets provided in commercial premises.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this asset management plan.

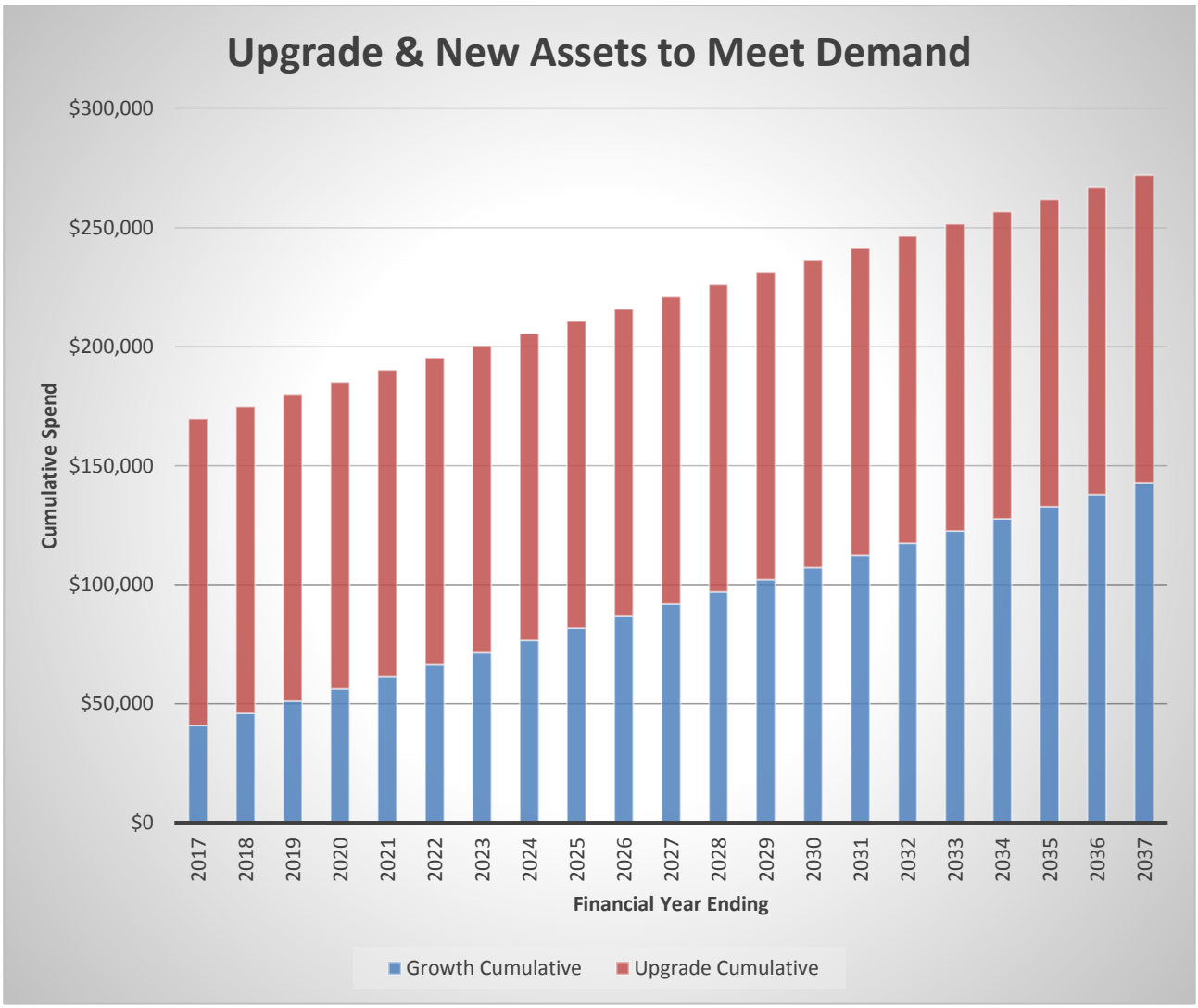
Table 4.3: Demand Management Plan Summary

Service Activity	Demand Management Plan
Waste Water Collection	1. Determine adequacy of existing scheme for new developments within serviced townships (Pump station capacity review completed and carry out pipe capacity analysis). Developers to provide infrastructure and contribute to existing schemes and upgrade or provide alternative approved methods of disposal 2. Maximise use of existing CWMS assets

4.4 New Assets for Growth

The new assets required to meet growth will be acquired free of cost from land developments and constructed/acquired by Council. The new contributed and constructed asset values are summarised in Figure 2.

Figure 2: New Assets for Growth – (Cumulative)



Acquiring these new assets will commit council to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations and maintenance costs.

Council has upgraded all the twenty pump stations to 24 hour monitoring through the existing South East SCADA system over a three stage project. There are no further upgrades planned for the system within the period of this plan.

There are currently two developments in progress in the township of Bordertown that Council will receive developer contributed assets, however, future developments based on Council's development plan and previous developments are estimated to be limited. A growth factor has been applied for developer contributed assets on an average of $5000 per annum which is an estimate based on previous developments.

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council 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.

Tatiara District Council's CWMS assets are located in the townships of Bordertown, Keith, Mundulla and Wolseley. The operating environment varies between sites with areas of different soil types and water ways impacting on asset useful lives, predicted replacement costs and environmental risks.

The age profile of the assets included in this AM Plan is shown in Figure 3.

Figure 3: Asset Age Profile

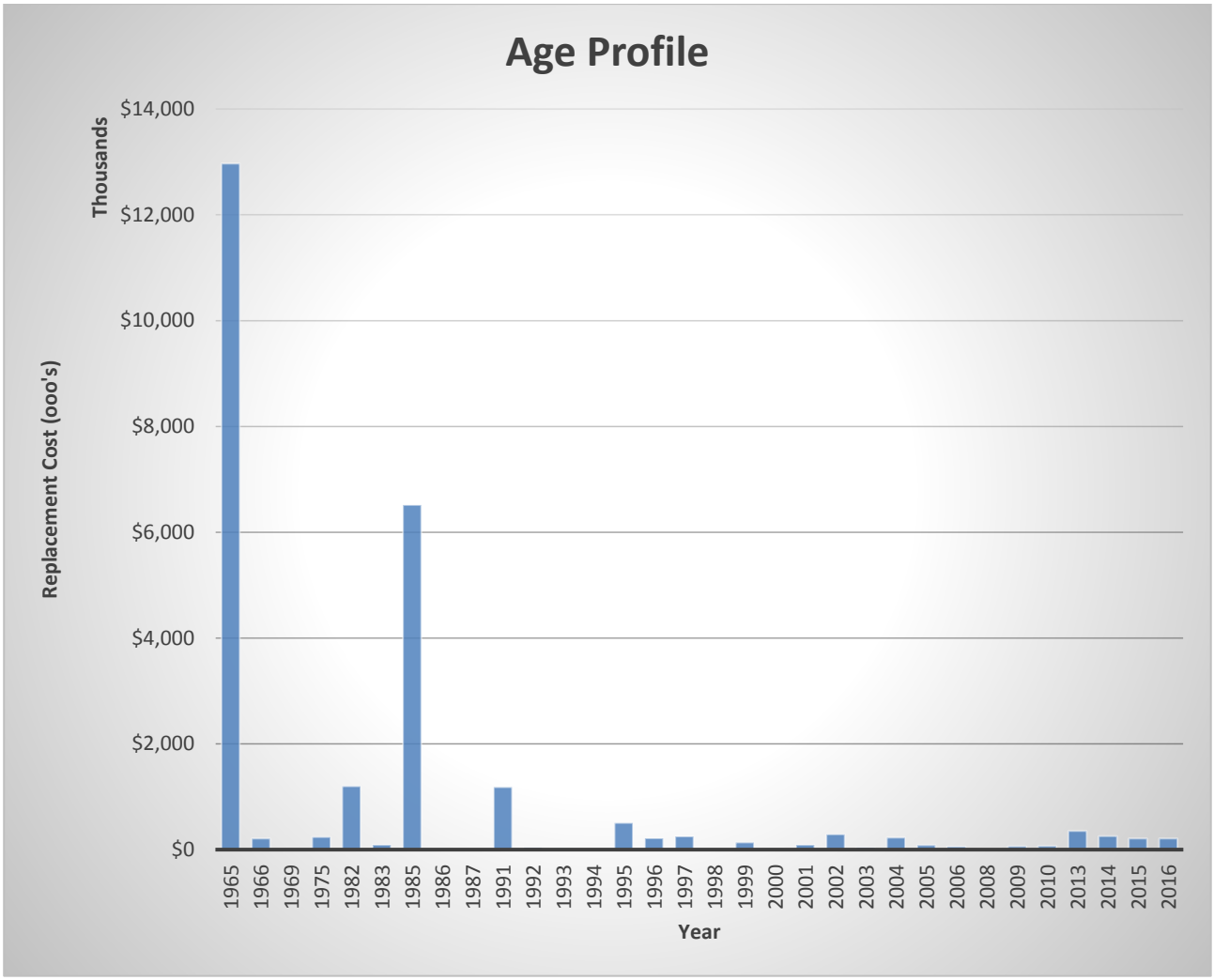


Table 5.1.1: Township CWMS Scheme Construction Years

Scheme	Construction Year
Bordertown	1966
Keith	1985
Mundulla	1983
Wolseley	1992

The original as constructed plans for all four schemes are located in hard copy in the Engineering office. Data from these plans has be digitally captured in Council geographic information system (GIS) which are available to all staff via Council's IT network.

5.1.2 Asset capacity and performance

Council'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 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency	Treatment
Bordertown Gravity Line 41.21	Operating at capacity based on CCTV footage. Further investigations to be carried out.	Carry out capacity calculations
Keith Rising Main 1	Inadequate class pipe subject to failure	Carried out CCTV condition assessment and monitored pipe failures

The above service deficiencies were identified from field inspections, CCTV condition assessment, and maintenance and callout records.

5.1.3 Asset condition

Asset condition data has been captured for a large portion of the infrastructure covered by this plan, however, it is impossible both economically and practically to capture condition information for all underground pipe assets, therefore, a sample of these assets have been assessed and their condition extrapolated across the network. As further information becomes available it will be included in this document.

Condition is measured using a 1 – 5 rating system[3] as detailed in Table 5.1.3.

Table 5.1.3: IIMM Description of Condition

Condition Rating	Description
1	Excellent condition: Only planned maintenance required.
2	Very good: Minor maintenance required plus planned maintenance.
3	Good: Significant maintenance required.
4	Fair: Significant renewal/upgrade required.
5	Poor: Unserviceable.

Council has carried out condition assessments on both the pump stations and the pipe network.

5.1.3.1 Pipe Network Condition

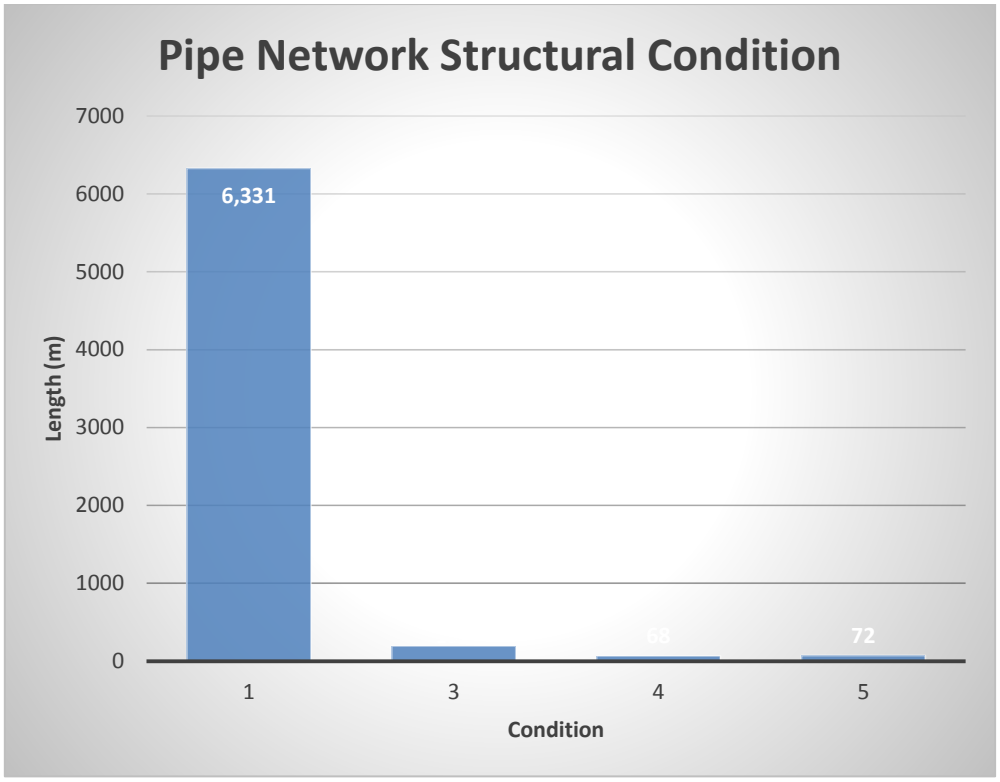
The pipe network, due to being buried is very difficult and expensive to ascertain accurate condition data. There are two main methods used to determine the condition of the pipe network including CCTV footage of the pipe and records of leaks and blockages. In accordance with the previous version of this asset management plan, Council engaged contractors to carry out CCTV condition assessments of a sample of the underground pipes within each scheme with a view that this data could be extrapolated across each network to give a reasonable level of confidence in the condition of the pipe network. There are however, limitations to utilising CCTV cameras to assess the condition of the pipe network. These include:

- Pipe size – the size of the pipe network has an impact on the type of camera that can be used to carry out the assessment and the majority of Council's pipe network is under 100mm in diameter limiting the length of pipe that can be assessed using this method
- Pipe access – There are limited numbers of manholes and inspection points that allow access to the pipe network
- Pipe obstructions - obstructions in the pipe such as root intrusion, foreign objects, tight bends and full pipes prevent assessment
- Outage times – to carry out the assessment, rising mains need to be shut down. The time rising mains can be shut down is limited to the capacity of the downstream pump station
- Cost – specialist equipment and trained personnel are required to conform with the pipe condition assessment code (WSA Code)

Pipe assessment were carried out over two financial years with the following results:

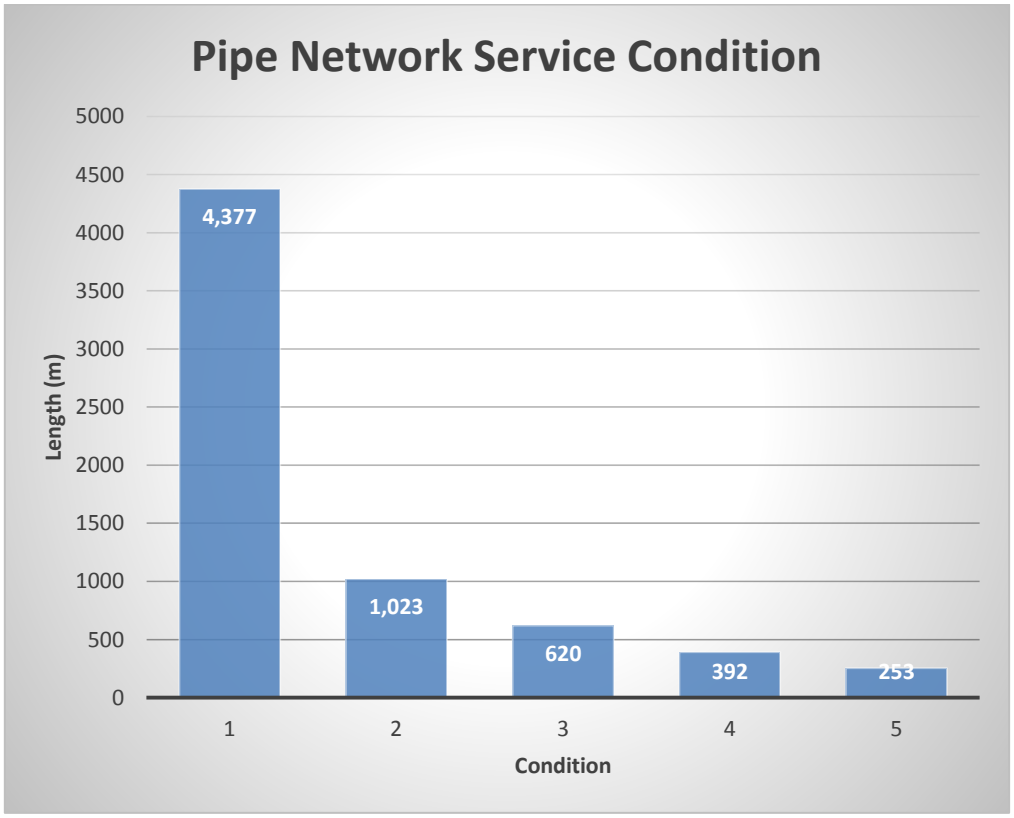
Figure 4: Pipe network structural condition

[3] IIMM 2006, Appendix B, p B:1-3 ('cyclic' modified to 'planned', 'average' changed to 'fair'')



Structural condition refers to structural capacity of the pipe such as cracks and deformation.

Figure 5: Pipe network Service Condition



Service condition refers the serviceability of the pipe eg. Is there any blockages, foreign debris in the pipes or fat build up that will limit the serviceability of the pipe.

It is planned to carry out further CCTV condition assessments of the same pipes every 5 to 7 years to build up a history of the rate of deterioration within the pipe network.

As part of the pipe condition assessment a sample of the manholes were assessed. The assessment rated the condition of the manhole pit and the manhole lid separately.

Figure 6: Manhole Pit Condition

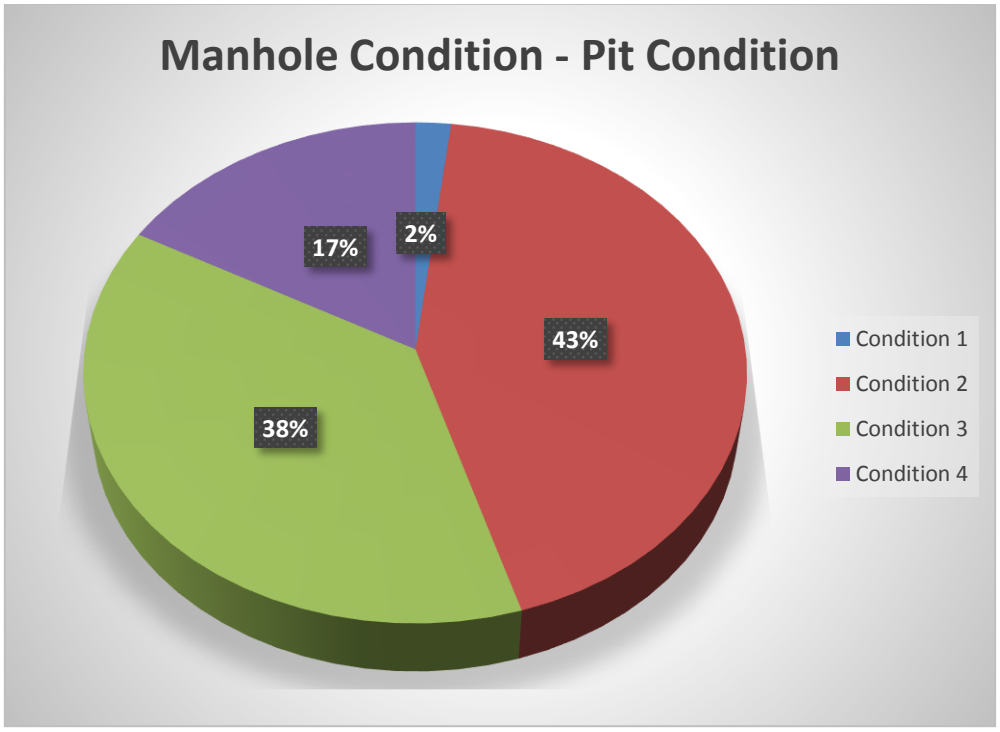
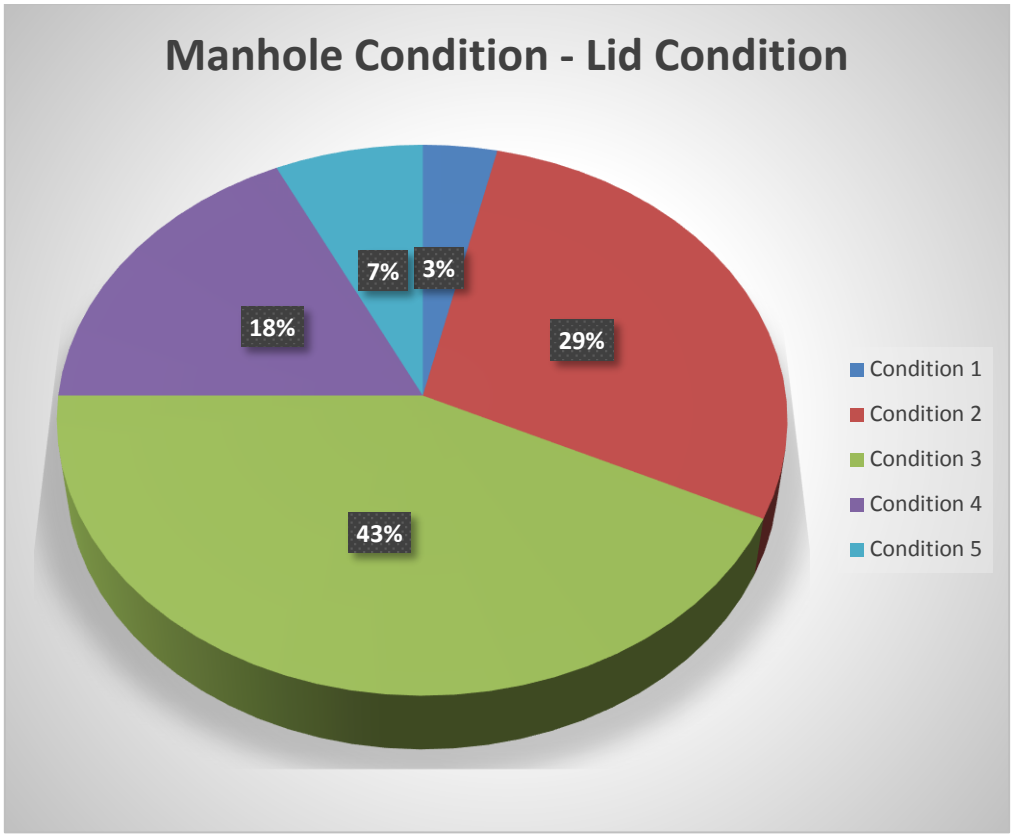


Figure 7: Manhole Lid Condition

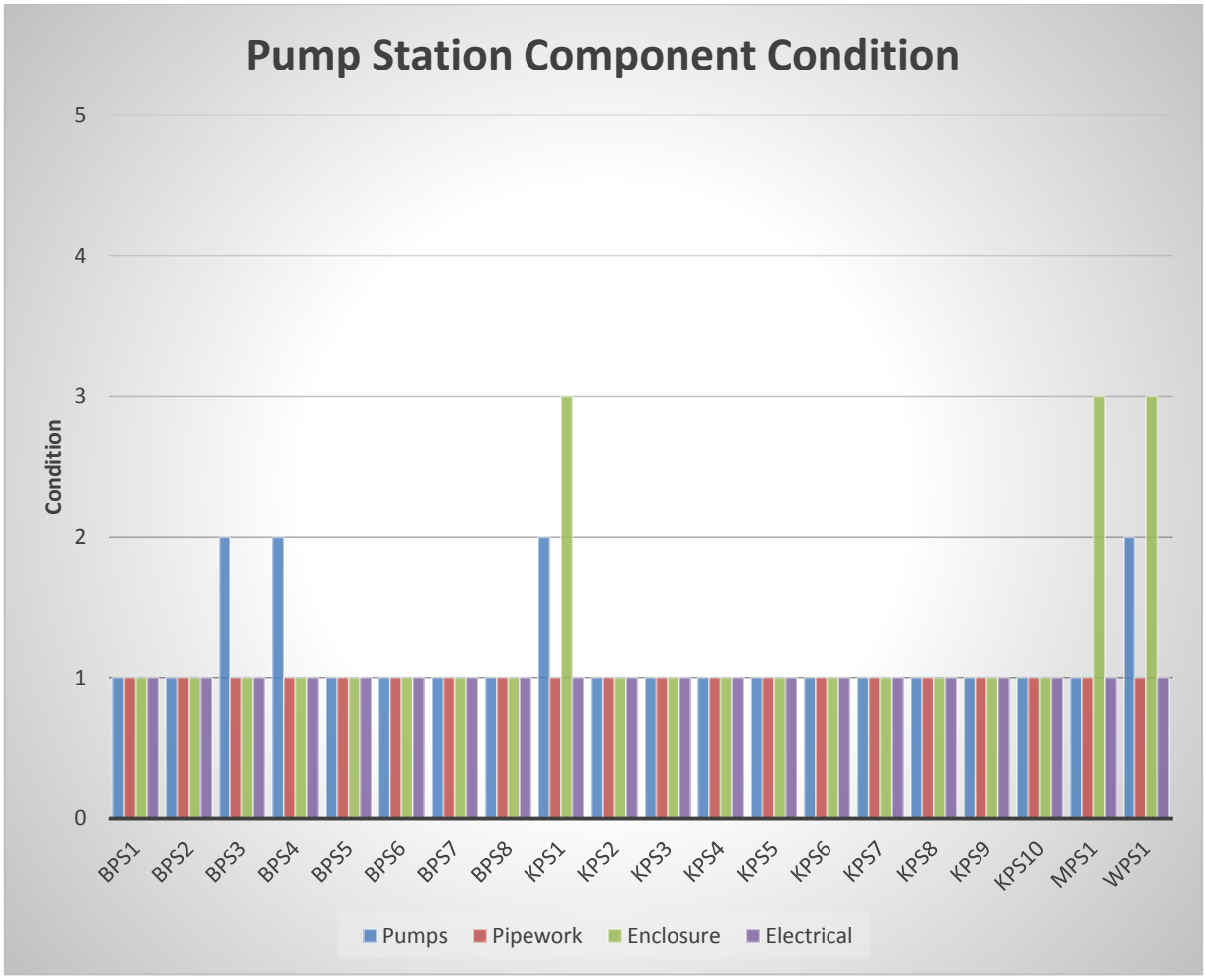


5.1.3.2 Pump Station Condition

Assessments of the pump stations were carried out using an engineering firm in 2011. As a result of the assessment, Council upgraded all 20 pump stations to meet modern day standards. Therefore all the pump stations will be near to as new condition. However, the upgrades did not include the pump sumps or the educt vents. Further assessment of these components is required and is documented in the improvement plan.

The condition assessment of the components of the upgraded pump stations have been updated.

Figure 8: Pipe network Service Condition



5.1.4 Asset valuations

The value of assets recorded in the asset register as at 30th June 2016 covered by this asset management plan is shown below. Assets were last revalued at 30th June 2016.

Current Replacement Cost	$25,531,000
Depreciable Amount	$24,432,000
Depreciated Replacement Cost	$11,276,000
Annual Depreciation Expense	$401,000

Council's sustainability reporting reports the rate of annual asset consumption and compares this to asset renewal and asset upgrade and expansion.

Asset Consumption (Depreciation/Depreciable Amount)	1.64%
Asset renewal (Capital renewal exp/Depreciable amount)	1.24%
Annual Upgrade/New (Capital upgrade exp/Depreciable amount)	0.53%
Annual Upgrade/New	0.70%

(including contributed assets)

Council is currently renewing assets at 75.31% of the rate they are being consumed and increasing its asset stock by approximately 0.1% each year over a 10 year period and 0.7% in the first year of this plan.

To provide services in a financially sustainable manner, Council will need to ensure that it is renewing assets (or increasing reserves) at the rate they are being consumed over the medium-long term and funding the life cycle costs for all new assets and services in its long term financial plan.

5.2 Risk Management Plan

An assessment of risks[4] 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 are summarised in Table 5.2.

Many of the high risk identified in the initial version of the risk management plan have been reduced significantly through the upgrade of the pump stations, the implementation of the SCADA system, improved maintenance regimes and condition assessments.

Table 5.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Associated Costs
Pump Station	Pump breakdown, power outage	H	Purchase transportable generator. Maintain contingency plan	$10,000
Rising Mains	Rising main failure	H	Monitor and record the number of failures to ascertain the viability of replacing mains. Allocate budget to continue CCTV condition assessment every 5-7 years.	$40,000 (2022) – Staff time
Gravity Lines	Gravity Line failure	H	Monitor and record the number of failures to ascertain the viability of replacing failing gravity lines. Allocate budget to continue CCTV condition assessment every 5-7 years.	Budget included above - Staff time

5.3 Routine Maintenance Plan

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 Maintenance plan

Maintenance includes reactive, planned and specific maintenance work activities.

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

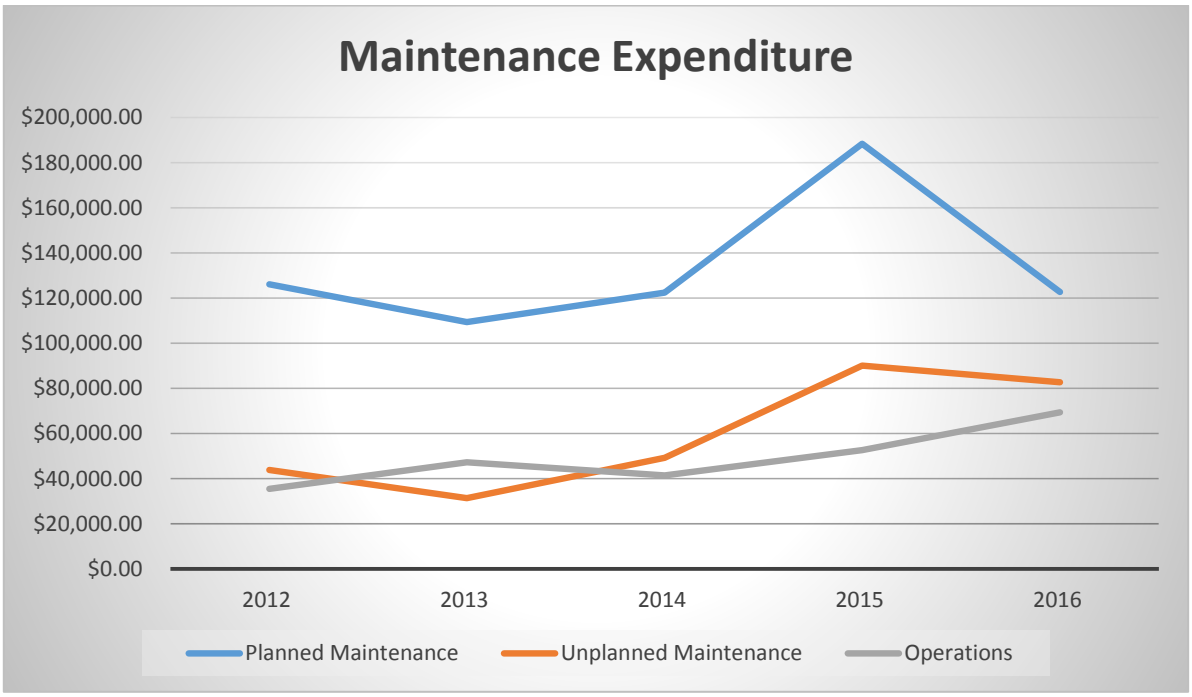
[4] CWMS Risk Assessment Plan

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS 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, building roof replacement, etc. This work generally falls below the capital/maintenance threshold but may require a specific budget allocation.

Actual past maintenance expenditure is shown in Figure 9.

Figure 9: Maintenance Expenditure Trends



Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement. Due to the upgrade and renewal of the pump station infrastructure, it is expected that unplanned maintenance is likely to fall, however, due the aging underground infrastructure, unplanned maintenance is expected to increase over time before the network is replaced.

5.3.2 Standards and specifications

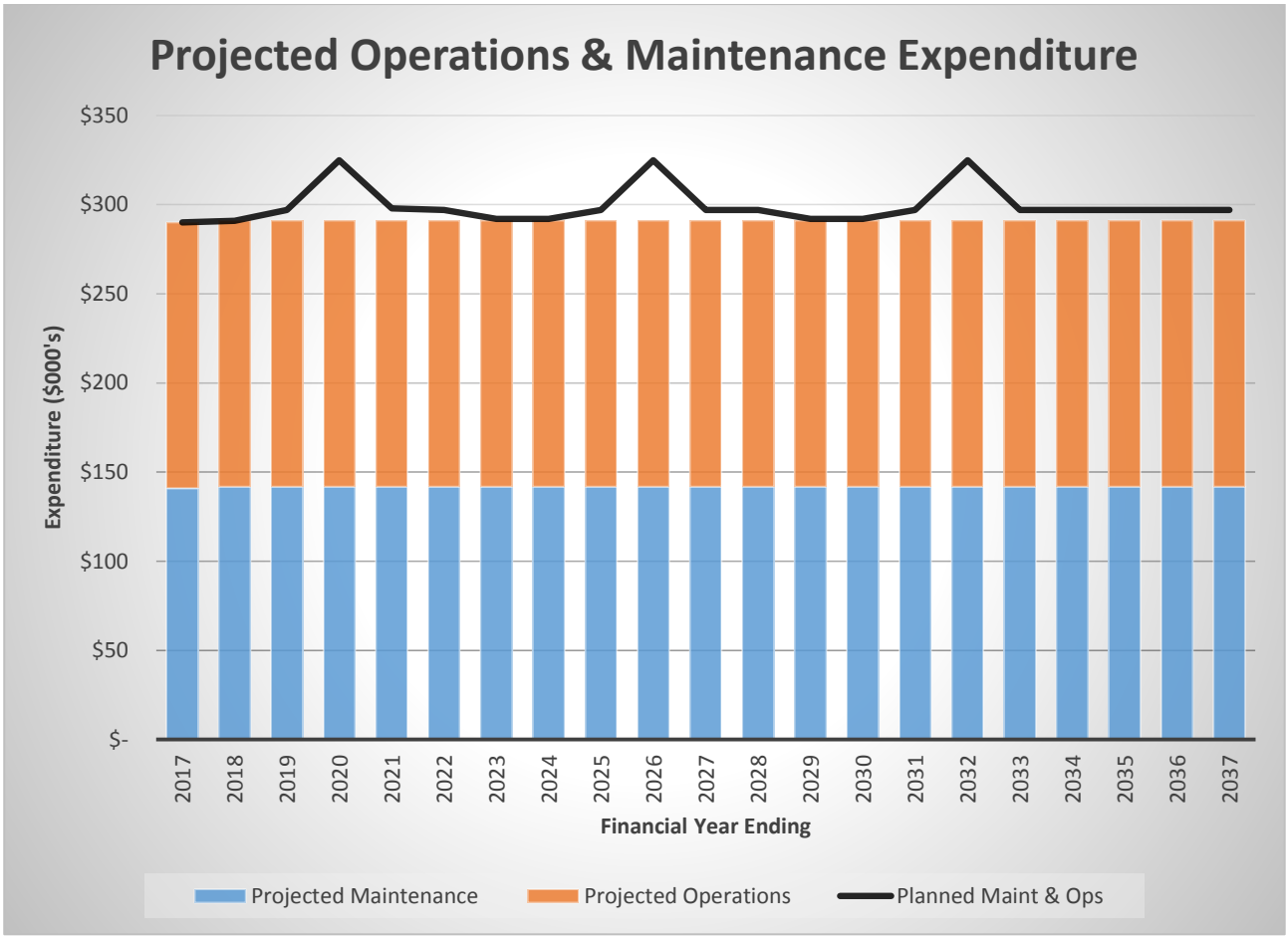
Maintenance work is carried out in accordance with the following Standards and Specifications.

- Design Criteria and Standards for Septic Tank Effluent Disposal Schemes
- Operation and Maintenance Manuals for each scheme

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 10. Note that all costs are shown in 2016/17 financial year dollar values.

Figure 10: Projected Operations and Maintenance Expenditure



Deferred maintenance, ie works that are identified for maintenance that are unable to be funded or resourced are included in the risk assessment process in the infrastructure risk management plan.

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

5.4 Renewal/Replacement Plan

Renewal 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 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 from one of three methods provided in the 'Expenditure Template".

- Method 1 uses Asset Register data to project the renewal costs for renewal years using acquisition year and useful life, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average *network renewals* plus *defect repairs* in the *Renewal Plan* and *Defect Repair Plan* worksheets on the *'Expenditure template'*.

Method 1 was used for this asset management plan.

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.4.1.

Table 5.4.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Perceived Risk Factor	30
Condition	40
Design Capacity	30
Total	**100%**

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost.

Examples of low cost renewal include relining of pump sumps rather than replace.

5.4.2 Renewal standards

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

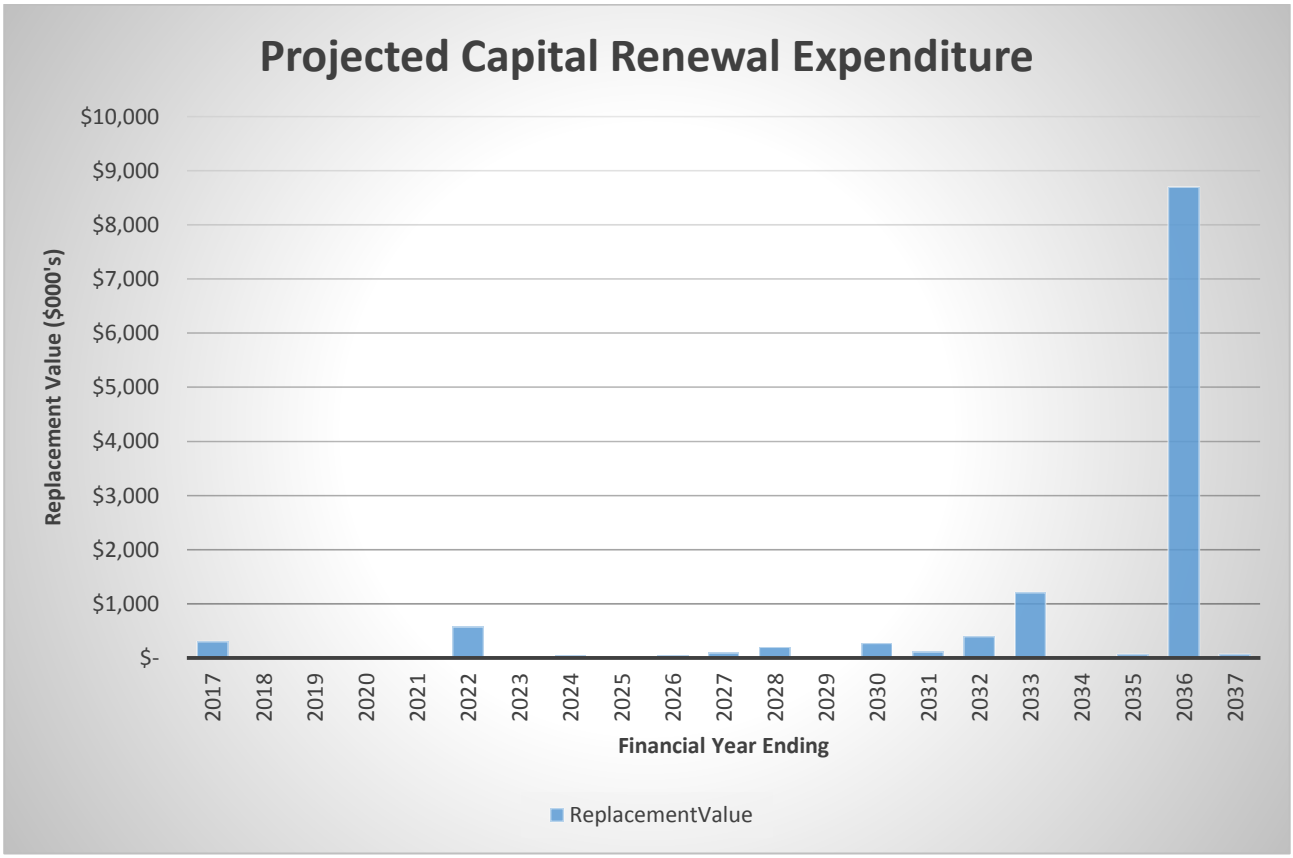
- Council's engineering design standards
- Local Government Association of South Australia Guidelines and Design Requirements
- Department of Health Septic Tank Effluent Drainage Design Criteria

5.4.3 Summary of projected renewal expenditure

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised in Figure 11. Note that all costs are shown in 2013 financial year dollar values.

The projected capital renewal program is shown in Appendix B.

Figure 11: Projected Capital Renewal Expenditure



Deferred renewal, ie those assets identified for renewal and not scheduled for renewal in capital works programs are to be included in the risk assessment process in the risk management plan.

Renewals are to be funded from capital works programs and grants where available. 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 Council 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, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.5.1.

Table 5.5.1: Upgrade/New Assets Priority Ranking Criteria

Criteria	Weighting
Design Capacity	40%
Perceived Risk	40%
Condition	20%
Total	**100%**

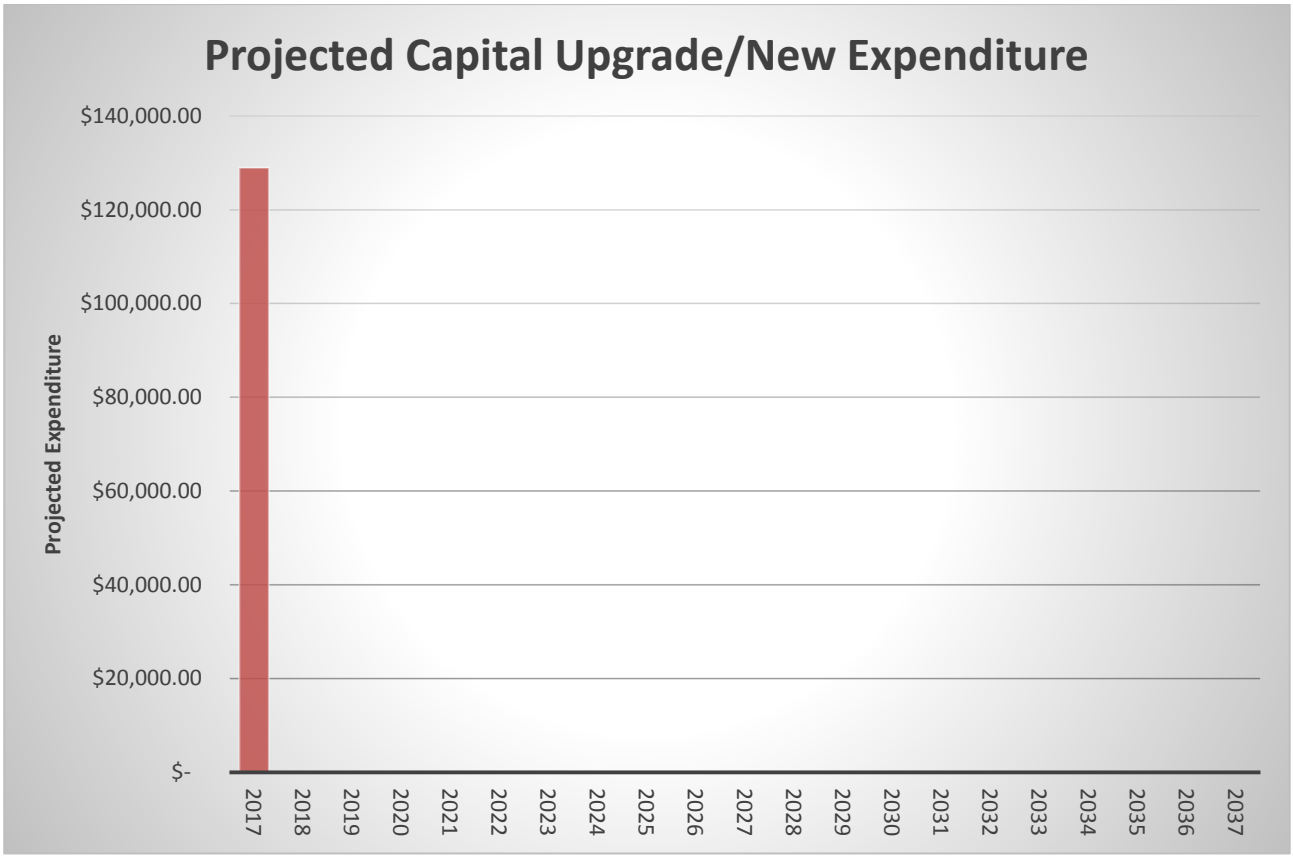
5.5.2 Standards and specifications

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 projected upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in Figure 12. The projected upgrade/new capital works program is shown in Appendix C. All costs are shown in current 2013 financial year dollar values.

Figure 12: Projected Capital Upgrade/New Asset Expenditure



A high capital upgrade/new expenditure in the first year of the plan is due to the upgrade of the final six pump stations. There are no plans to upgrade any other assets in the period of this plan.

New assets and services are to be funded from capital works program and grants where available. 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

There are no assets identified for disposal.

6. FINANCIAL SUMMARY

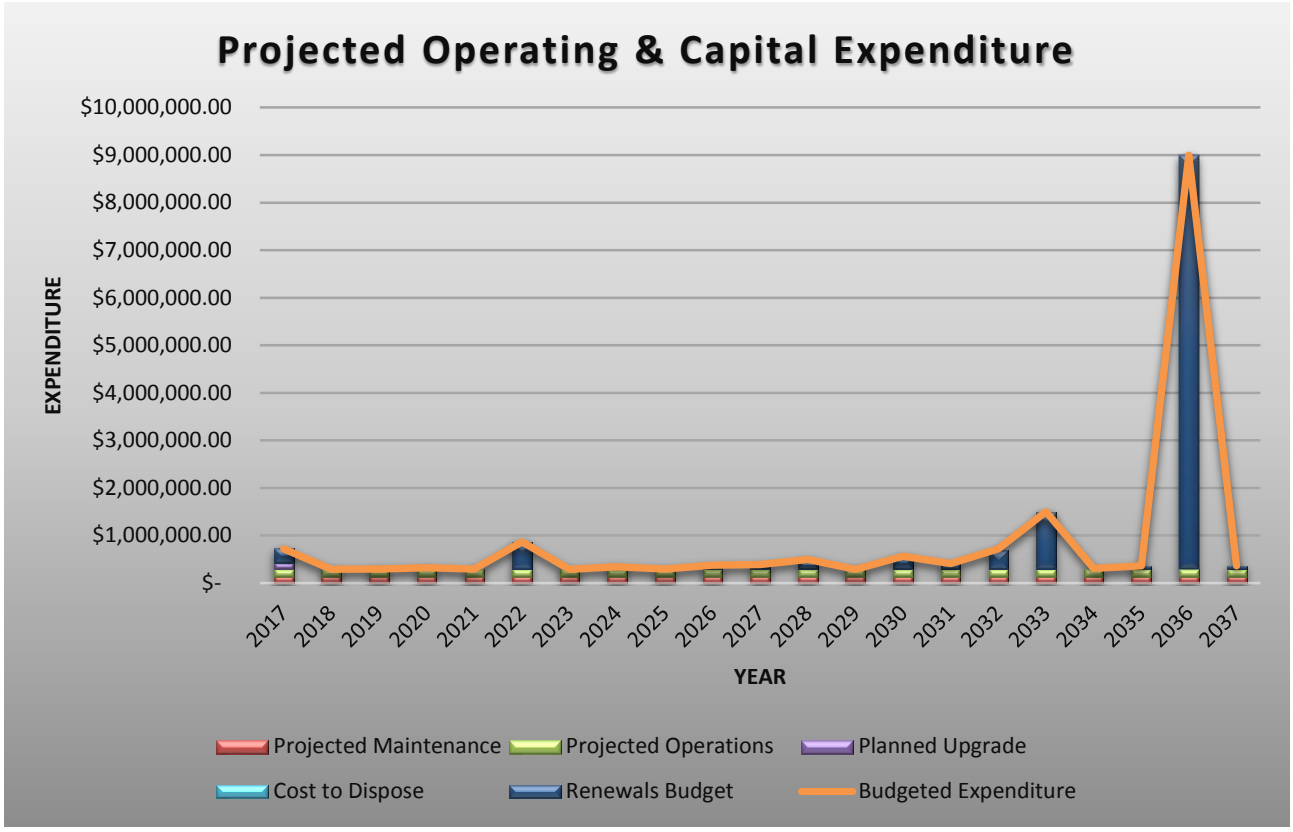
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset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

6.1 Financial Statements and Projections

The financial projections are shown in Figure 13 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets), net disposal expenditure and estimated budget funding.

Note that all costs are shown in 2013 financial year dollar values.

Figure 13: Projected Operating and Capital Expenditure and Budget



6.1.1 Financial sustainability in service delivery

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

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 longest asset life. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is $691,000 per year (operations and maintenance expenditure plus depreciation expense in year 1).

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes operations, maintenance and capital renewal expenditure in year 1. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure at the start of the plan is $721,000 (operations and maintenance expenditure plus budgeted capital renewal expenditure in year 1).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap.

The lifecycle gap covered by this asset management plan is +$30,000 per year (-ve = gap, +ve = surplus).

Life cycle expenditure is 104% of life cycle costs giving a life cycle sustainability index of 1.04.

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.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is $402,000 per year.

Estimated (budget) operations, maintenance and capital renewal funding is $413,000 per year giving a 10 year funding surplus of $53,000 per year and a 10 year sustainability indicator of 1.03. This indicates that Council has 103% of the projected expenditures needed to provide the services documented in the asset management plan.

Medium Term – 5 year financial planning period

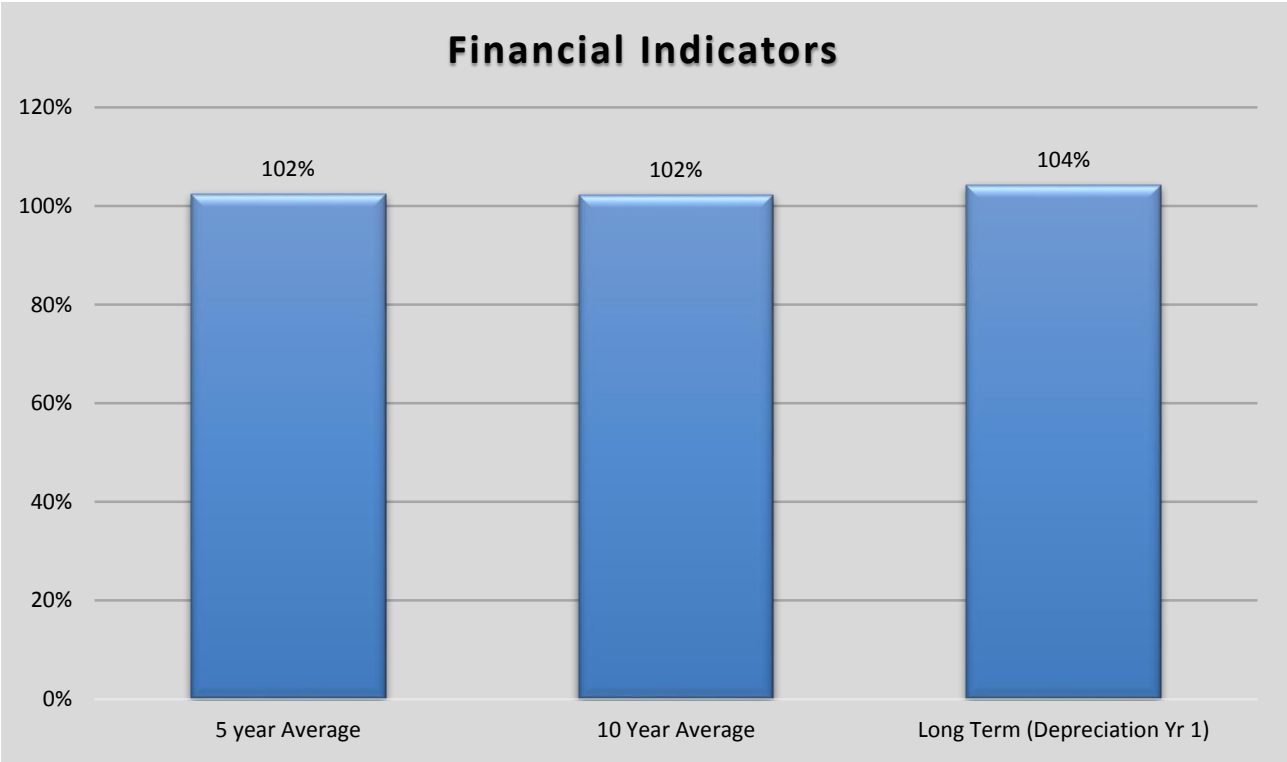
The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is $377,000 per year.

Estimated (budget) operations, maintenance and capital renewal funding is $387,000 per year giving a 5 year funding surplus of $45,000 per year. This is 102% of projected expenditures giving a 5 year sustainability indicator of 0.52.

Financial Sustainability Indicators

Figure 13A shows the financial sustainability indicators over the 10 year planning period and for the long term life cycle.

Figure 13A: Financial Sustainability Indicators



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

Figure 14 shows the projected asset renewals in the 10 year planning period from Appendix B. The projected asset renewals are compared to budgeted renewal expenditure in the capital works program and capital renewal expenditure in year 1 of the planning period in Figure 14.

Figure 14: Projected and Budgeted Renewal Expenditure

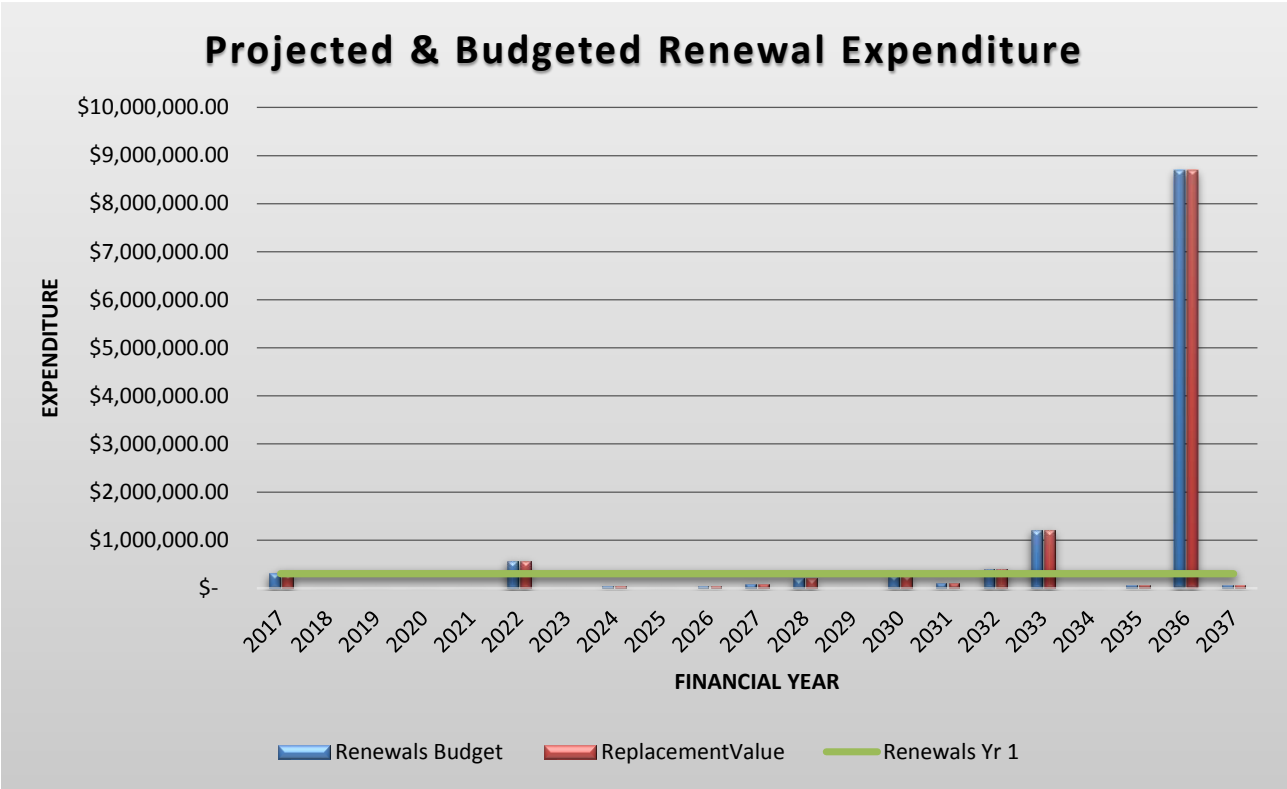


Table 6.1.1 shows the shortfall between projected and budgeted renewals

Table 6.1.1: Projected and Budgeted Renewals and Expenditure Shortfall

Year	Renewals Budget	ReplacementValue	Renewal Financing Shortfall (-gap + surplus)	Cumulative Shortfall (-gap + surplus)
2017	$301,436	$301,436	$0	$0
2018	$0	$0	$0	$0
2019	$0	$0	$0	$0
2020	$0	$0	$0	$0
2021	$0	$0	$0	$0
2022	$570,269	$570,269	$0	$0
2023	$0	$0	$0	$0
2024	$51,945	$51,945	$0	$0
2025	$0	$0	$0	$0
2026	$51,945	$51,945	$0	$0
2027	$792,338	$792,338	$0	$0
2028	$198,504	$198,504	$0	$0
2029	$0	$0	$0	$0
2030	$270,010	$270,010	$0	$0
2031	$111,000	$111,000	$0	$0
2032	$395,334	$395,334	$0	$0
2033	$1,205,806	$1,205,806	$0	$0
2034	$9,000	$9,000	$0	$0

2035	$63,796	$63,796	$0	$0
2036	$8,698,901	$8,698,901	$0	$0
2037	$66,159	$66,159	$0	$0

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

Providing services in a sustainable manner will require matching of projected asset renewals to meet agreed service levels with planned capital works programs and available revenue.

A gap between projected asset renewals, planned asset renewals and funding indicates that further work is required to manage required service levels and funding to eliminate any funding gap. Currently Tatiara District Council does not have a funding gap.

The table above indicates that Council has allocated sufficient funds in its long term budget to renew assets as required.

6.1.2 Expenditure projections 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 current (non-inflated) values. Disposals are shown as net expenditures (revenues are negative).

Table 6.1.2: Expenditure Projections for Long Term Financial Plan ($000)

Year	Operations	Maintenance	Projected Capital Renewal	Projected Capital Upgrade/New	Disposals
2017	$149,000	$141,000	$301,436	$129,000	$0
2018	$149,284	$141,851	$0	$0	$0
2019	$149,284	$141,851	$0	$0	$0
2020	$149,284	$141,851	$0	$0	$0
2021	$149,284	$141,851	$0	$0	$0
2022	$149,284	$141,851	$570,269	$0	$0
2023	$149,284	$141,851	$0	$0	$0
2024	$149,284	$141,851	$51,945	$0	$0
2025	$149,284	$141,851	$0	$0	$0
2026	$149,284	$141,851	$51,945	$0	$0
2027	$149,284	$141,851	$792,338	$0	$0
2028	$149,284	$141,851	$198,504	$0	$0
2029	$149,284	$141,851	$0	$0	$0
2030	$149,284	$141,851	$270,010	$0	$0
2031	$149,284	$141,851	$111,000	$0	$0
2032	$149,284	$141,851	$395,334	$0	$0
2033	$149,284	$141,851	$1,205,806	$0	$0
2034	$149,284	$141,851	$9,000	$0	$0
2035	$149,284	$141,851	$63,796	$0	$0
2036	$149,284	$141,851	$8,698,901	$0	$0
2037	$149,284	$141,851	$66,159	$0	$0

Note: All projected expenditures are in 2017 dollar values

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from two primary sources being:

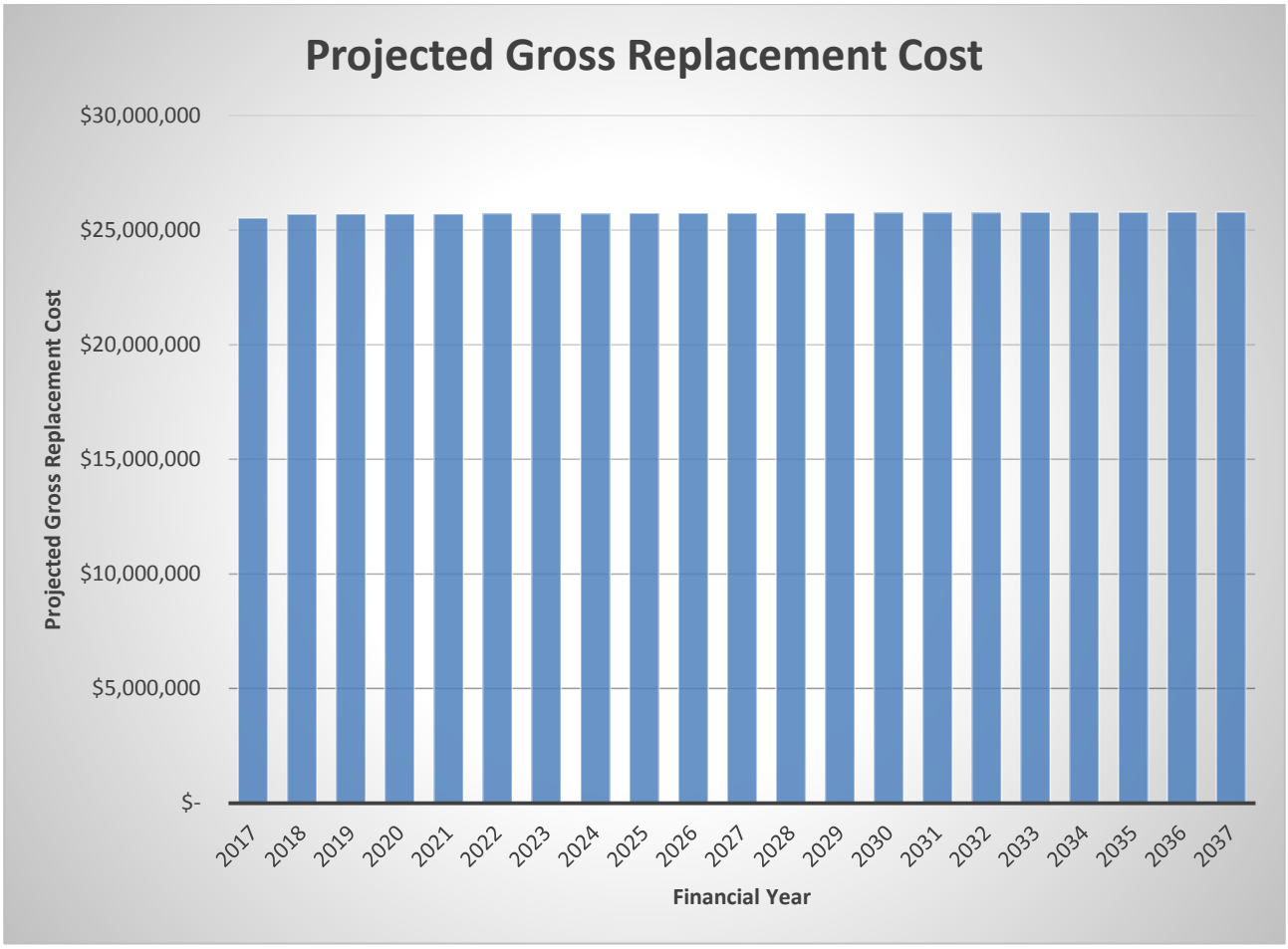
1. Ratepayers paying an annual service charge as allowed for under Section 155 'Community Wastewater Management System Charge' of the Local Government Act 1999;

2. Developers paying a fixed amount per new allotment created as a capital connection contribution under Section 188 'CWMS infrastructure Fee' of the Local Government Act 1999

6.3 Valuation Forecasts

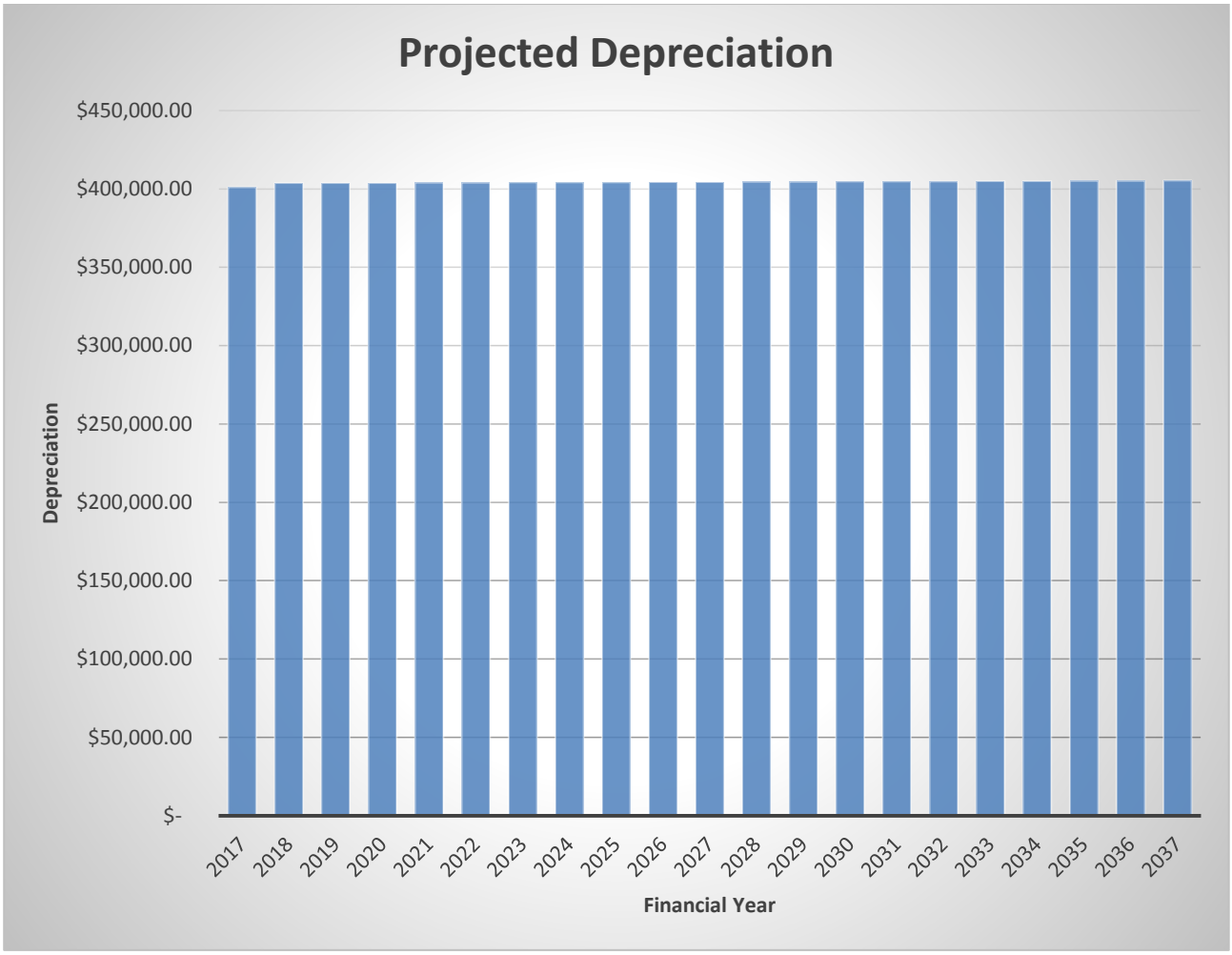
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 15 shows the projected replacement cost asset values over the planning period in 2012 dollar values.

Figure 15: Projected Asset Values



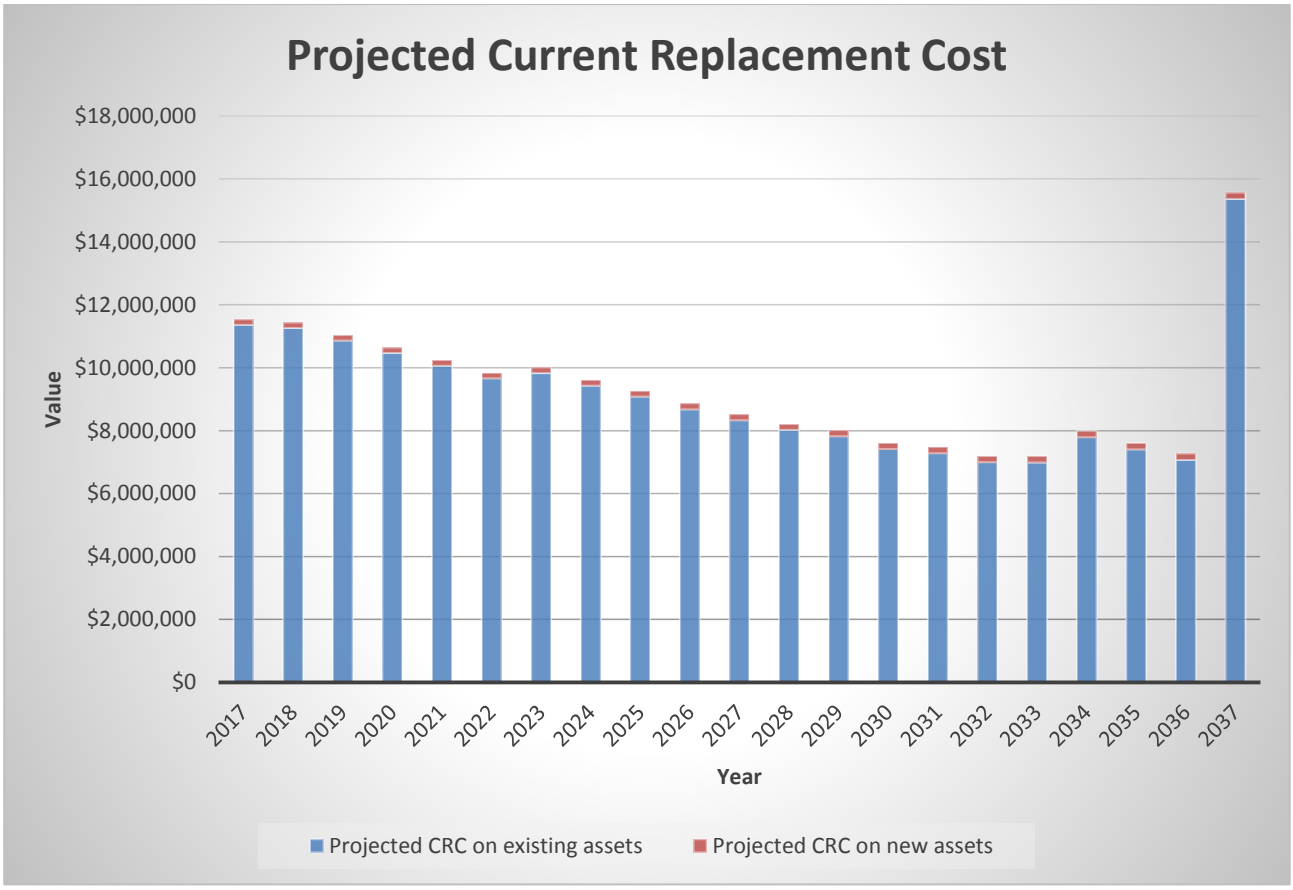
Depreciation expense values are forecast in line with asset values as shown in Figure 15.

Figure 15: Projected Depreciation Expense



The depreciated replacement cost (current replacement cost less accumulated depreciation) 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 16. The effect of contributed and new assets on the depreciated replacement cost is shown in the darker colour.

Figure 16: 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:

- That the townships of Bordertown, Keith, Mundulla and Wolseley will remain approximately the same size as they are in 2017 and populations will remain similar.
- It is assumed that the remaining useful life of underground pipework is approximately 65 to 70 years and the condition is commensurate with their age profile
- All predicted financial figures are based on 2016/17 rates are not adjusted by inflation for the particular year of work
- All manholes, connection points and flushing points to be of the same standard
- Revenue from CWMS service charges will remain constant for the life of the plan (increases of the Construction Industry Output Price Index only)
- Lagoons and wetlands have indefinite useful lives with adequate maintenance practices

Accuracy of future financial forecasts may be improved in future revisions of this infrastructure and asset management plan with improved data.

7. ASSET MANAGEMENT PRACTICES

7.1 Accounting/Financial Systems

7.1.1 Accounting and financial systems

Council's financial accounting system is ITVision's SynergySoft System

7.1.2 Accountabilities for financial systems

Manager Corporate Services is responsible for the accounting and financial system

7.1.3 Accounting standards and regulations

Council's accounting practices comply with the Local Government Act 1999 and the Local Government (Financial Management) Regulations and applicable accounting standards. Council is also subject to regular independent audits of its accounting systems and practices

7.1.4 Capital/maintenance threshold

Council has an Asset Capitalisation and Materiality Policy that states the capitalisation threshold for CWMS infrastructure is $5000.

7.1.5 Required changes to accounting financial systems arising from this AM Plan

Investigate options to link or more easily transfer data from the financial system to the asset management system.

7.2 Asset Management Systems

7.2.1 Asset management system

Councils uses Assetfinda to manage CWMS asset information

7.2.2 Asset registers

Asset registers are maintained in the asset management system Assetfinda and the spatial data is maintained in ESRI ArcMap. There two systems are directly integrated.

7.2.3 Linkage from asset management to financial system

Currently there is no link from the asset management systems to the financial system.

7.2.4 Accountabilities for asset management system and data

Asset Systems Coordinator is responsible for the asset management systems and its associated data.

7.2.5 Required changes to asset management system arising from this AM Plan

- Continuously review the accuracy and currency of asset information

7.3 Information Flow Requirements and Processes

The key information flows *into* this asset management plan are:

- Council strategic and operational plans,
- Service requests from the community,
- Network assets information,
- The unit rates for categories of work/materials,

- Current levels of service, expenditures, service deficiencies and service risks,
- Projections of various factors affecting future demand for services and new assets acquired by Council,
- Future capital works programs,
- Financial asset values.

The key information flows *from* this asset management plan are:

- The projected Works Program and trends,
- The resulting budget and long term financial plan expenditure projections,
- Financial sustainability indicators.

These will impact the Long Term Financial Plan, Strategic Longer-Term Plan, annual budget and departmental business plans and budgets.

7.4 Standards and Guidelines

Standards, guidelines and policy documents referenced in this asset management plan are:

- Tatiara District Council Asset Management Policy
- Tatiara District Council Asset Management Strategy

8. PLAN IMPROVEMENT AND MONITORING

8.1 Performance Measures

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

- The degree to which the required cashflows identified in this asset management plan are incorporated into the organisation's long term financial plan and Community/Strategic Planning processes and documents,
- 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;

8.2 Improvement Plan

The improvement plan generated from the previous version of this plan and the status is shown in table 8.2.

Table 8.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline	Status	Comments
1	Record Capital expenditure as capital renewal and capital upgrade/new expenditure	MCS	Staff time	2013/14	Complete	
2	Review accuracy and currency of technical asset register	ASC	Staff time	Ongoing	Complete	
3	Develop link from the technical asset register to the financial asset register or develop a single corporate asset register	ASC, MCS, FM	Staff time	2013/14	Complete	A single database within Assetfinda is used for the technical and financial register
4	Development of complaints register for monitoring service levels and customer satisfaction	SC	Staff time	2013	Complete – further refinement needed	
5	Improve asset valuations and renewal costs	ASC	Staff time	Ongoing	Complete - ongoing	Engaged external engineering firm to develop unit rates and useful lives estimates based on the latest available data

The asset management improvement plan generated from this asset management plan is shown in Table 8.3.

Table 8.3: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Carry out condition assessment of educt vent and pump sumps to improve the estimated useful lives and maintenance requirements	MCS	Staff time	2017/18
2	Improve asset valuations and renewal costs	ASC	Staff time	Ongoing
3	Develop pricing recommendation based on the pricing guidelines prepared by the LGA	ASC, MCS, FM	Complete	2016/17
4	Improve capture of maintenance activities	ASC, MTS	Staff time & software – budget $3000 annually for additional licences	ongoing
5	Improve capture of customer complaints	ASC, Records Officer	Staff time	2017/18

8.3 Monitoring and Review Procedures

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

The Plan has a life of 4 years and is due for revision and updating within 2 years of each Council election.

REFERENCES

Tatiara District Council Strategic Plan 2009-2013

Tatiara District Council Annual Business Plan and Budget 2013

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IPWEA, 2011, *Asset Management for Small, Rural or Remote Communities* Practice Note, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AM4SRRC.

APPENDICES

Appendix A Projected 10 year Capital Renewal Works Program

Appendix B Planned Upgrade/Exp/New 10 year Capital Works Program A

Appendix C Budgeted Expenditure Accommodated in LTFP

Appendix A Projected 10 year Capital Renewal Works Program

Asset ID	Category	Asset Type	Community	Replacement Year	Base Life	Replacement Cost
BPIP8	Pipework	Rising Main	Bordertown	2020	55.00	$341,371.49
20160406101542_ds	Pipework	Rising Main	Bordertown	2020	55.00	$156,897.61
KPS5VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS6VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS3VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS7VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS8VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS9VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS2VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
KPS4VF	Vent/Filter	Vent	Keith	2020	35.00	$9,000.00
				2020 Total		**$570,269.10**
WPS1S	Pump Station Shed/Enclosure	Shed	Wolseley	2022	30.00	$5,214.19
				2022 Total		**$5214.19**
WPS1P_1	Pumps	Mono Pump	Wolseley	2024	15.00	$3,792.64
WPS1P_2	Pumps	Mono Pump	Wolseley	2024	15.00	$3,792.64
WPS1P	Pipework	Pipe	Wolseley	2024	15.00	$7,929.67
WPS1E	Electrical	Electrical	Wolseley	2024	15.00	$36,430.78
				2024 Total		**$51945.73**
BPS4P_1	Pumps	Mono Pump	Bordertown	2025	15.00	$3,792.64
BPS4P_2	Pumps	Mono Pump	Bordertown	2025	15.00	$3,792.64
BPS4P	Pipework	HDPE	Bordertown	2025	15.00	$7,929.67
BPS3P_1	Pumps	Mono Pump	Bordertown	2025	15.00	$3,792.64
BPS3P_2	Pumps	Mono Pump	Bordertown	2025	15.00	$3,792.64
BPS3P	Pipework	HDPE	Bordertown	2025	15.00	$7,929.67
KPS1S	Pump Station Shed/Enclosure	Shed	Keith	2025	40.00	$5,214.19
KPS1P_1	Pumps	Mono Pump	Keith	2025	15.00	$3,792.64
KPS1P_2	Pumps	Mono Pump	Keith	2025	15.00	$3,792.64
KPS1P	Pipework	HDPE	Keith	2025	15.00	$7,929.67
KPS1VF	Vent/Filter	Vent	Keith	2025	40.00	$9,000.00
MPS1S	Pump Station Shed/Enclosure	Shed	Mundulla	2025	42.00	$5,214.19
MPS1VF	Vent/Filter	Vent	Mundulla	2025	42.00	$9,000.00
BPS4VF	Vent/Filter	Filter	Bordertown	2025	15.00	$1,000.00

BPS3VF	Vent/Filter	Filter	Bordertown	2025	15.00	$1,000.00
PortGen1	Generator	Generator	Bordertown	2025	10.00	$15,365.18
				2025 Total		**$92338.41**
BPS4SS	Pump Sump	Concrete	Bordertown	2026	60.00	$49,626.10
BPS3SS	Pump Sump	Concrete	Bordertown	2026	60.00	$24,813.05
BPS2SS	Pump Sump	Concrete	Bordertown	2026	60.00	$24,813.05
BPS5SS	Pump Sump	Concrete	Bordertown	2026	60.00	$24,813.05
BPS1SS	Pump Sump	Concrete	Bordertown	2026	60.00	$24,813.05
BPS7SS	Pump Sump	Concrete	Bordertown	2026	60.00	$24,813.05
BPS6SS	Pump Sump	Concrete	Bordertown	2026	60.00	$24,813.05
				2026 Total		**$198504.4**
TOTAL						**1,618,271.83**

Appendix B Planned Upgrade/Exp/New 10 year Capital Works Program

Tatiara DC
Projected Capital Upgrade/New Works Program - CWMS

($000)

Year	Item	Description	Estimate
2017	1	Upgrade electrical board and monitoring for SCADA BPS6, BPS8, KPS2, KPS9, KPS10 & WP1	$129
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
2017		**Total**	**$129**

($000)

Year	Item	Description	Estimate
2018	1	Purchase additional backup generators	$10
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
2018		**Total**	**$10**

($000)

Year	Item	Description	Estimate
2019	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		

2019		**Total**	**$0**

($000)

Year	Item	Description	Estimate
2020	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
2020		**Total**	**$0**

Appendix C Budgeted Expenditure Accommodated in LTFP

Tatiara DC - Report 7 - LTFP Expenditure Projections (CWMS 2017)										
Projected Expenditure	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Capital Expenditure on Renewal/Replacement of existing assets	$301,436	$0	$0	$0	$0	$570,269	$0	$51,945	$0	$51,945
Capital Expenditure on Upgrade/New assets	$129,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operational cost of existing assets	$149,000	$150,000	$151,000	$151,000	$152,000	$151,000	$151,000	$151,000	$151,000	$151,000
Maintenance cost of existing assets	$141,000	$141,000	$146,000	$174,000	$146,000	$146,000	$141,000	$141,000	$146,000	$174,000
Operational cost of New assets	$0	$284	$284	$284	$284	$284	$284	$284	$284	$284
Maintenance cost of New assets	$0	$851	$851	$851	$851	$851	$851	$851	$851	$851
Disposal of Surplus Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
All dollar values in ($'000)'s										