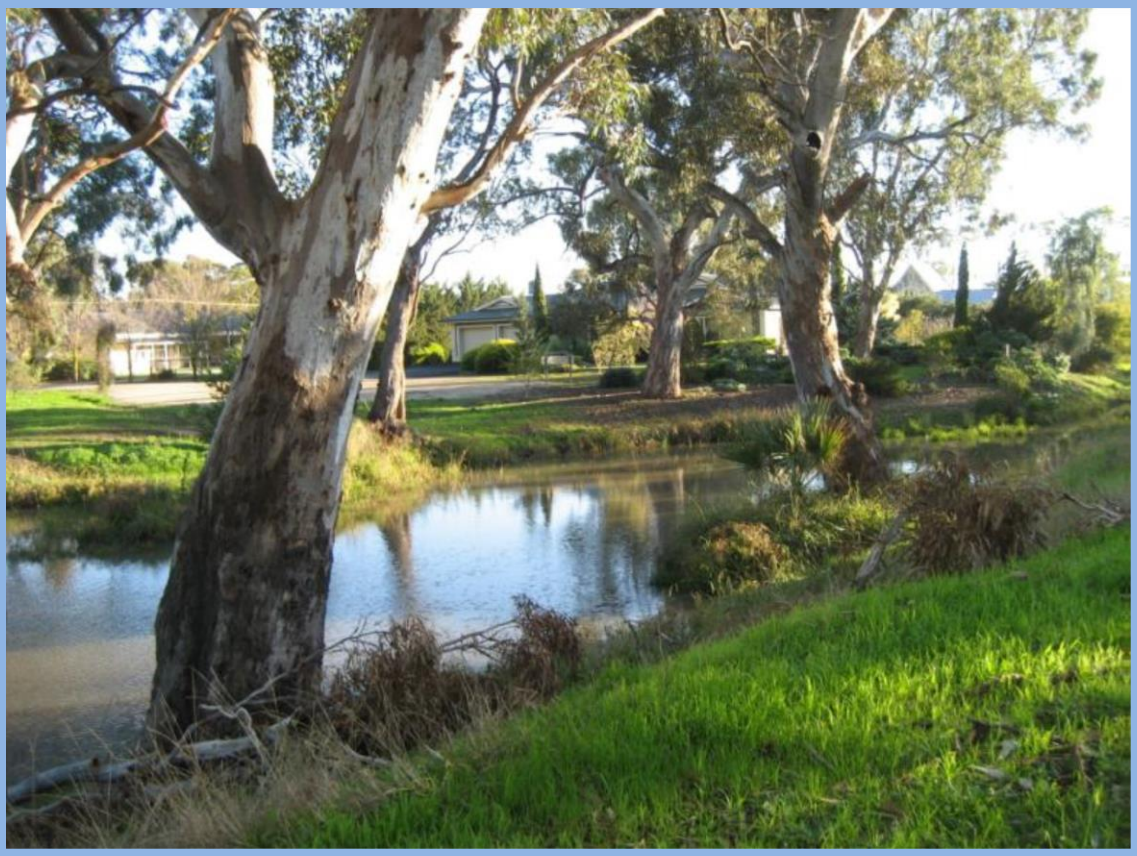
Tatiara District Council

Stormwater

Asset Management Plan

Version 3, February 2021



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Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1	7/01/2019	Initial Draft – For Council Consideration	Mike Coppins Asset Manager	Aaron Hillier Director Infrastructure & Operations	Council
2	28/09/2020	Review for Council Workshop	AM	Aaron Hillier Director Infrastructure & Operations	
3	4/02/2021	Minor updates for Council adoption	AM	Aaron Hillier Director Infrastructure & Operations	

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1. EXECUTIVE SUMMARY

Context

The fundamental purpose of this Stormwater Asset Management Plan is to improve Council's long-term strategic management of its infrastructure assets on behalf of the community. This is the first iteration of this Stormwater Asset Management Plan.

Council's goal in managing Stormwater 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 Stormwater infrastructure to develop and support sustainable communities in the Tatiara.

Tatiara District Council has stormwater systems located in the townships of Bordertown, Keith, Padthaway & Wolseley. Network assets (underground pipes, manholes and connection points) are considered to be in the middle of their lifecycle and the pump stations all need to be replaced in the short to medium term. 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 Stormwater network
The Stormwater network comprises:

Bordertown	
Asset Type	**Quantities**
Culverts	2744m
Stormwater Pipe	12239m
Side Entry Pits	298
Junction Pits	51
Grates	75
Other Pits	49

Keith	
Asset Type	**Quantities**
Pump Station and associated assets	15
Culverts	112m
Rising Mains	3230m
Stormwater Pipe	2459m
Side Entry Pits	64
Junction Pits	3
Grates	37
Bore Pits	19
Flushing Points	7
Soakage/Settling Pits	23
Other Pits	11

Mundulla	
Asset Type	**Quantities**
Culverts	
Stormwater Pipe	
Side Entry Pits	1
Junction Pits	
Grates	
Other Pits	2

Padthaway	
Asset Type	**Quantities**
Culverts	
Stormwater Pipe	
Side Entry Pits	2
Junction Pits	
Grates	2
Other Pits	3

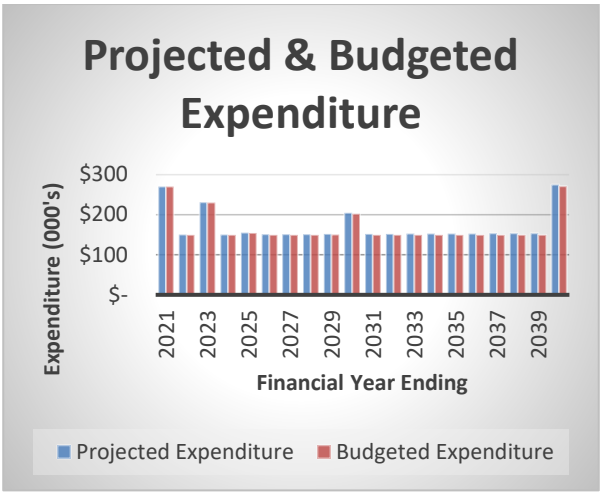
Wolseley	
Asset Type	**Quantities**
Culverts	162m
Stormwater Pipe	575m
Side Entry Pits	1
Junction Pits	
Grates	1

These infrastructure assets have a replacement value of $6,924,000.

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 $1,768,000 or $177,000 per year. For the period of this plan expenditure for asset renewal is minimal with large spikes in future years.

Council is able to provide the current level of service. Projected and budgeted expenditure are shown in the graph below.



What we will do

Council plans to provide stormwater services for the following:

- Operation, maintenance, renewal and upgrade of pump stations, pipelines, and pits to meet service levels set by council in annual budgets.
- Replace aging Keith pump stations.

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:

- Pump Station breakdown

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

- Monitoring the condition of aging infrastructure and replacing as needed.

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 stormwater needs. These assets include pumping stations, pipes, and pits in townships across the Council area.

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 stormwater assets is adequate to ensure the long-term sustainability.

Several Keith pump stations are in need of renewing. Large portions of the network infrastructure (pipes and pits) have similar acquisition dates and are expected to have similar lifespans causing spikes in capital expenditure when this infrastructure reaches end of useful life.

What options do we have?

While current data indicates that Council is well positioned to fund the current service levels provided by stormwater infrastructure it is imperative that future renewal, upgrade and maintenance regimes are optimised to ensure rate payers are receiving stormwater 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 stormwater services meet community needs and are affordable.

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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.

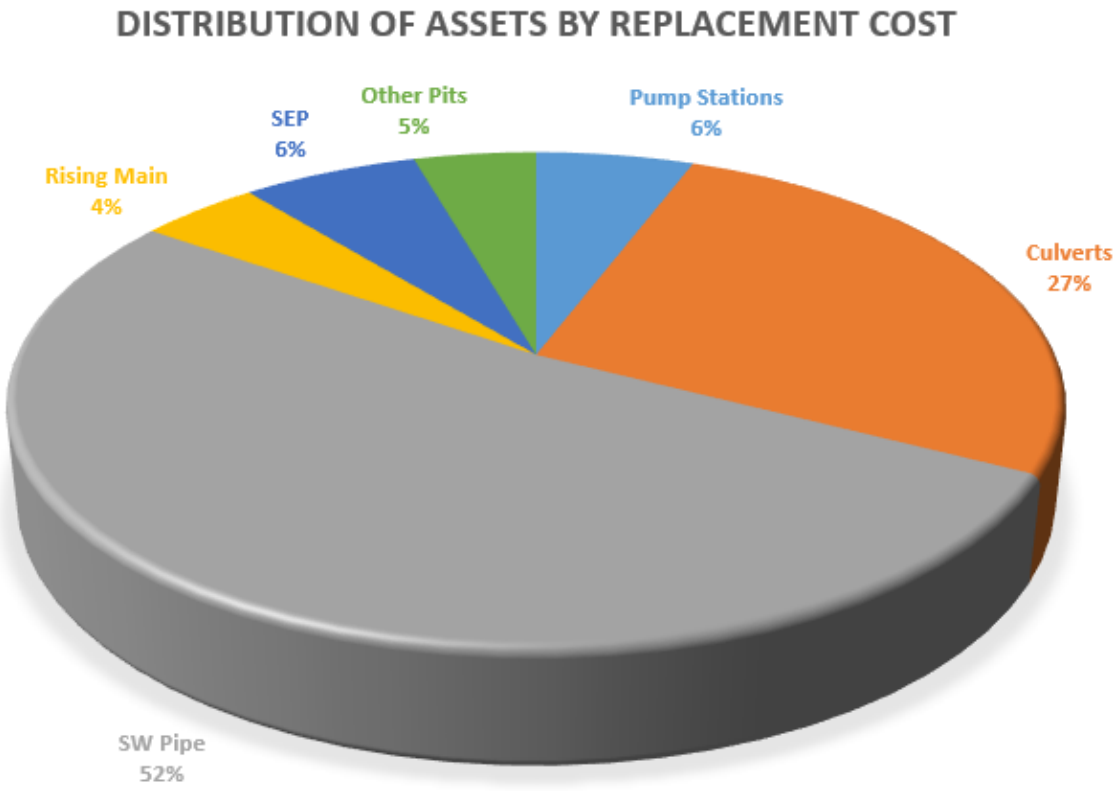
The infrastructure assets covered by this asset management plan are shown in Table 2.1.

Table 2.1: Assets covered by this Plan

Asset category	Count/Length	Replacement Value
Pump Stations & Associated Infrastructure	15	$396,000
Culverts	2856m	$1,842,000
Stormwater Pipe	15273m	$3,573,000
Rising Main	3230m	$302,000
Side Entry Pits	366	$442,000
Junction Pits	54	$32,000
Grates	115	$91,000
Soakage and Settling Pits	23	$75,000
Bore Pits	19	$100,000
Other Pits	65	$71,000
TOTAL		**$6,924,000**

Valuation as at 30 June 2020

Figure 1: Distribution of Stormwater 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.

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,
- Communicate the consequences for service levels and risk, where desired funding is not available, and

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

- 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

Theme	Strategic Goal	Strategy	How Goal and Objectives are addressed in AMP
Theme 2 - Built and Natural Environment	Provide appropriate infrastructure that support our district's growth	Prepare and maintain infrastructure asset management plans	This AMP includes a 10-year priority-based asset maintenance and replacement program for stormwater assets.

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 stormwater 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.

2.5 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.

[2] IPWEA, 2006.

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.
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.
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.

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, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to its original condition (eg Pump station inspections, pit cleaning, 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.

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 stormwater system	Customer service complaints	To be determined	
Quality	Provide a system with minimal break downs	System works records		Records to be collated
Function	Meet standards			Flooding issues reported
Environment/Safety	Provide adequate stormwater system	Customer reported flooding incidents		
TECHNICAL LEVELS OF SERVICE				
Operations	Infrastructure meets user's needs	Review and update of Operation and Maintenance manuals	Annual	Compliant
Maintenance	Provide a well-maintained system	Pump stations inspected and maintained	Annual	
		Pit cleaning program	Annual	Annual
		Pipework Inspections & condition monitoring. Capture of CCTV footage	Inspection carried out on a representative sample of the network	Assessment carried out on 5% on the network
		Reactive maintenance budget No. of call outs	$120,000 To be collated	 To be determined
Renewal	Provide an adequate and operational stormwater system	Compliance with standards		
Upgrade/New	Provide an adequate and operational stormwater system	Compliance with standards		

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 2953 Keith 1355 Mundulla 436 Wolseley 180 District Total 6620 (2016 census)	Population estimates are projected to reduce slightly to 5995 within the district over the period 2016 – 2031 (SA Planning Panel)	Nil
Demographics		Aging population – over 70s will increase by >20% in the period 2016 - 2031 (SA Planning Panel)	Nil
Environmental Factors	No adverse events during the year	Length and intensity of rainfall events may increase into the future	Stormwater system may be under capacity at some pinch points

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 CCTV condition assessment technology	Improved condition assessment methodology at a lower cost
Underground pipeline renewal technology	Improved replacement techniques and lower replacement costs

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.

Future developments based on Council's development plan and previous developments are estimated to be limited.

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 stormwater assets are located across the district townships. The operating environment varies between sites with areas of different soil types and water ways impacting on asset useful lives, and predicted replacement costs.

The age profile of the assets included in this AM Plan of both stormwater junctions and pipes is shown in Figure 1 & 2.

Figure 1: Asset Age Profile – Stormwater Junctions

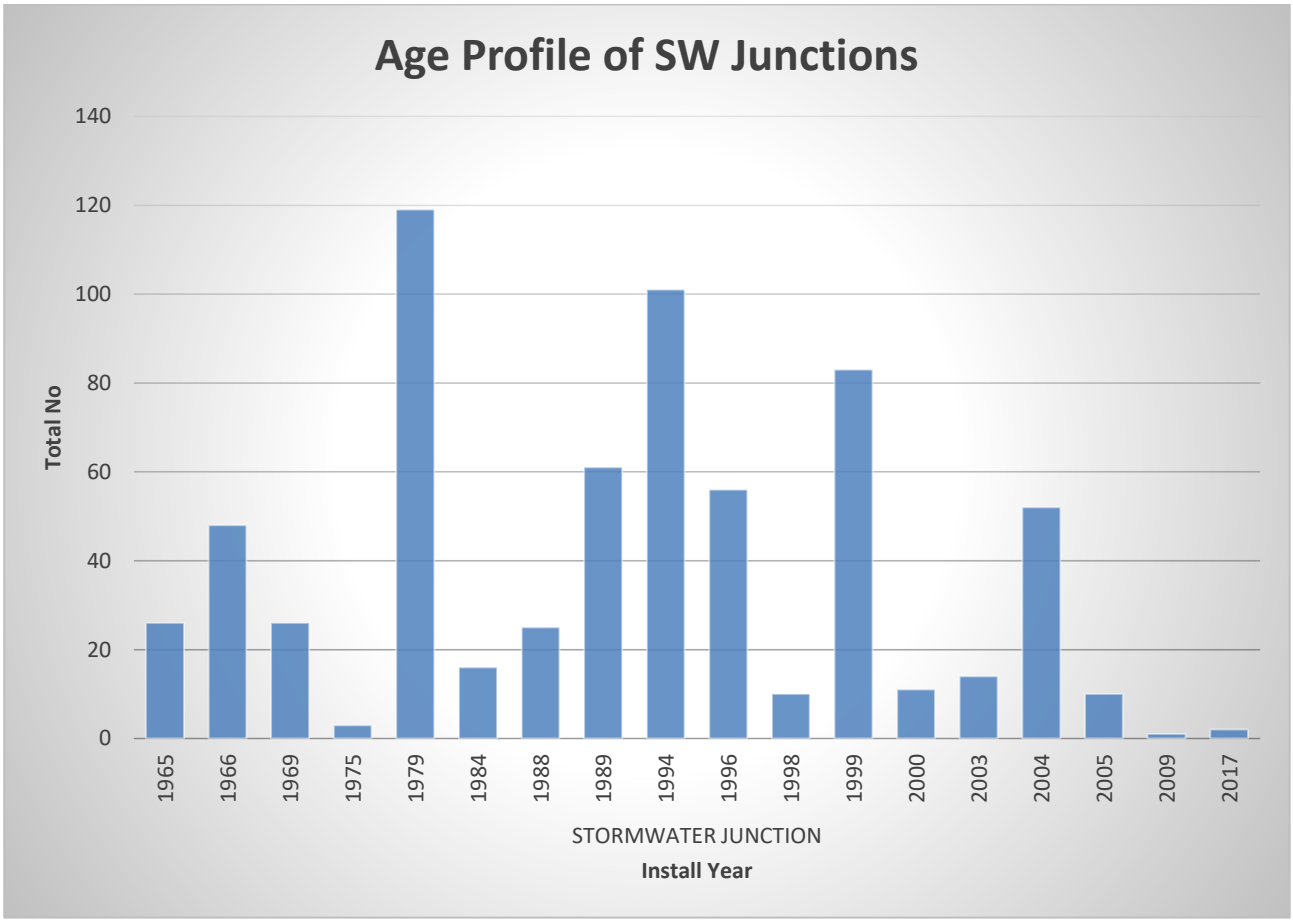
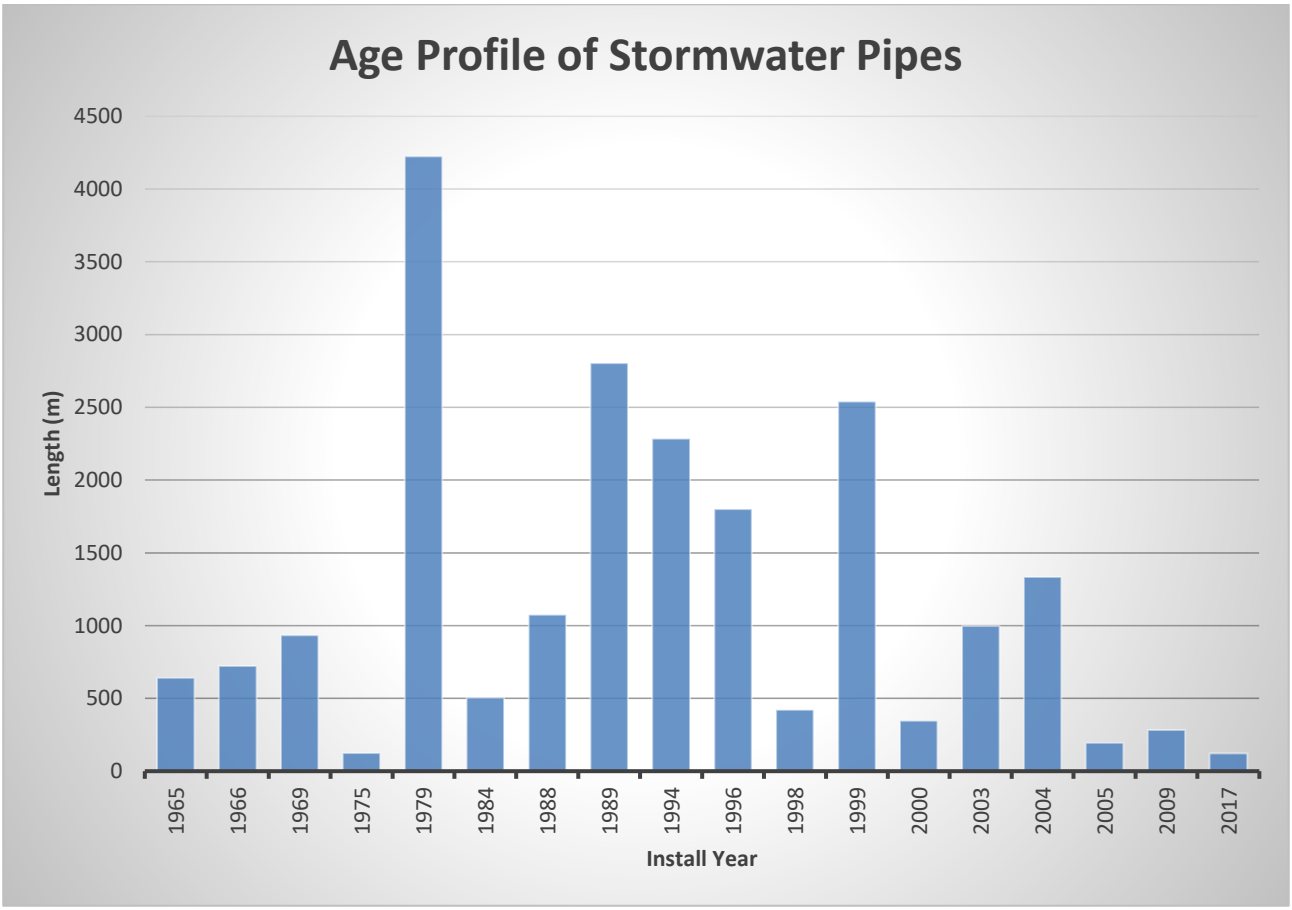


Figure 2: Asset Age Profile – Stormwater Pipes



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

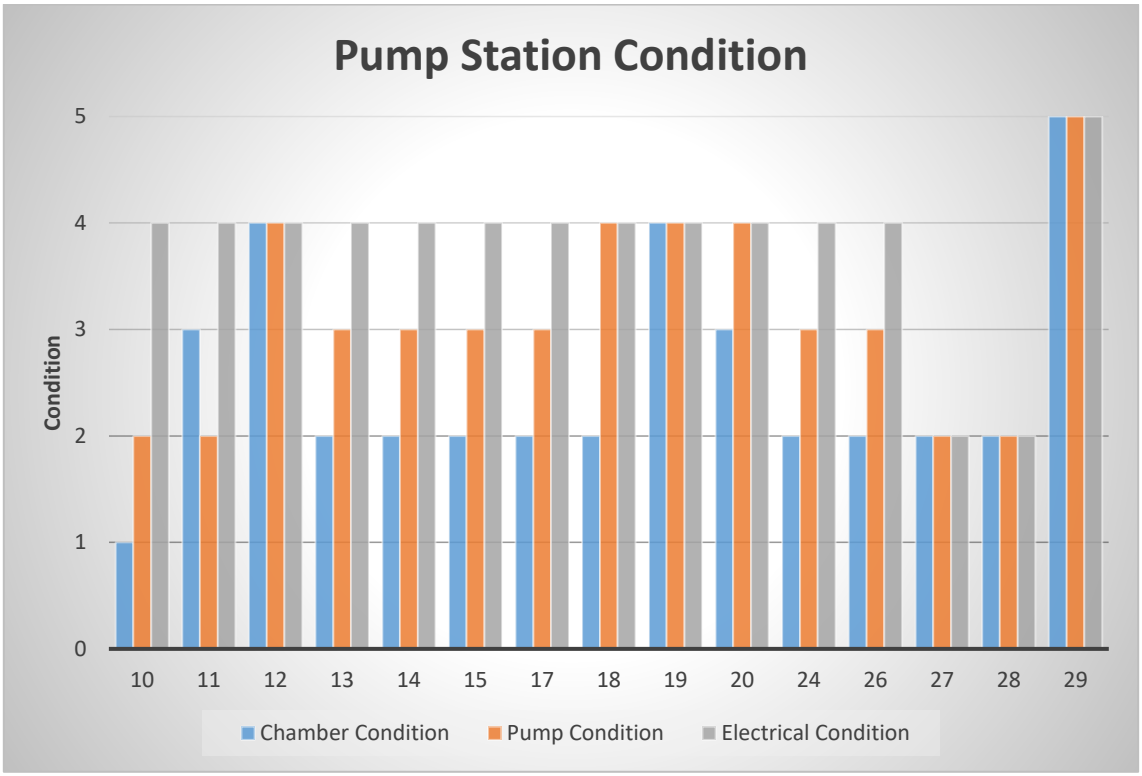
Location	Service Deficiency	Treatment
Keith SW Pump Switchboards	Do not meet modern day standards	Upgrade switchboards

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

5.1.3 Asset condition

An asset condition audit on the Keith Stormwater Pump Stations was conducted in 2017. The results of the audit are shown figure 9.

Figure 5c: Pump Station Condition



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	Very Good condition: 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.

5.1.3.1 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. There are however, limitations to utilising CCTV cameras to assess the condition of the pipe network. These include:

- 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

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

- Cost – specialist equipment and trained personnel are required

Service condition refers to the serviceability of the pipe eg. Are there any blockages, foreign debris in the pipes that will limit the pipe serviceability?

Approximately 2,000 metres of stormwater pipework was condition assessed in 2017 using CCTV footage. The results of the assessment indicated the majority of stormwater pipe assessed is in good condition. Isolated defects were identified as part of the assessments.

5.1.3.2 Pump Station Condition

Assessments of the pump stations have shown that many are near the end of their service life and require replacement in the short term. Renewal funding for this purpose is included in the projected renewal expenditure.

5.1.4 Asset valuations

The value of assets recorded in the asset register as at 30th June 2020 covered by this asset management plan is shown below.

Current Replacement Cost	$6,924,000
Depreciable Amount	$6,924,000
Depreciated Replacement Cost	$4,521,000
Annual Depreciation Expense	$75,000

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)	1.09%
Asset renewal (Capital renewal exp/Depreciable amount)	1.73%
Annual Upgrade/New (Capital upgrade exp/Depreciable amount)	0.43%

Council is currently renewing assets at 173% of the rate they are being consumed and increasing its asset stock by approximately 0.5% each year over a 10 year period and 0.5% 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 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 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, M, L)	Risk Treatment Plan	Associated Costs
Pump Station	Pump breakdown, power outage	H	Maintain contingency plan	
Rising Mains	Rising main failure	H	Monitor and record the number of failures to ascertain the viability of replacing mains. Allocate budget to undertake condition assessment.	$20,000 (2022) – Staff time
Stormwater Pipes	Pipe failure	M	Monitor and record the number of failures to ascertain the viability of replacing failing pipelines.	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.

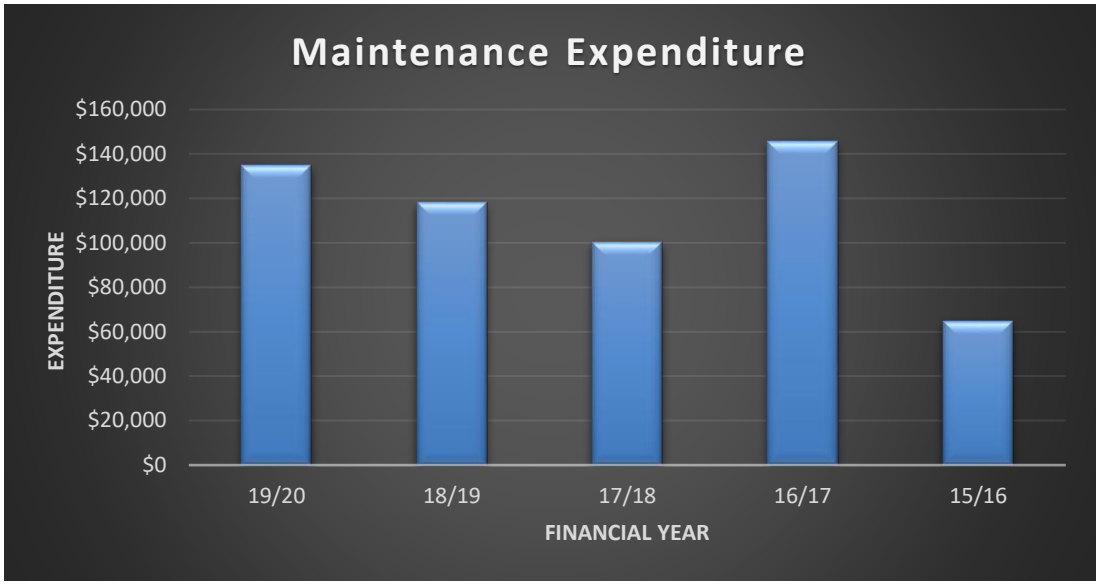
Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

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 2.

Figure 2: Maintenance Expenditure Trends



Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement. Due to the aging underground infrastructure, unplanned maintenance is expected to increase over time before the network is replaced.

5.3.2 Standards and specifications

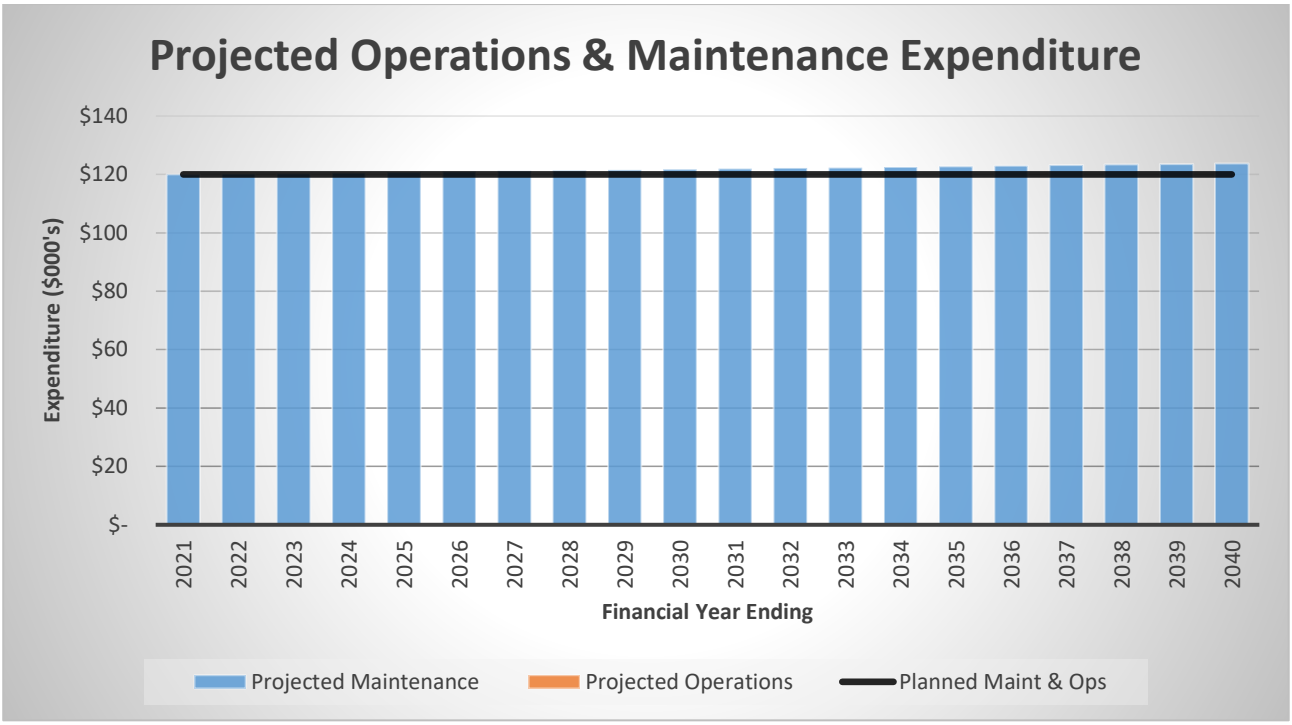
Maintenance work is carried out in accordance with the following Standards and Specifications.

- Design Criteria and Standards for stormwater networks
- Operation and Maintenance Manuals

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 3. Note that all costs are shown in 2020/21 financial year dollar values.

Figure 3: 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 or stormwater pipes rather than replace.

5.4.2 Renewal standards

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

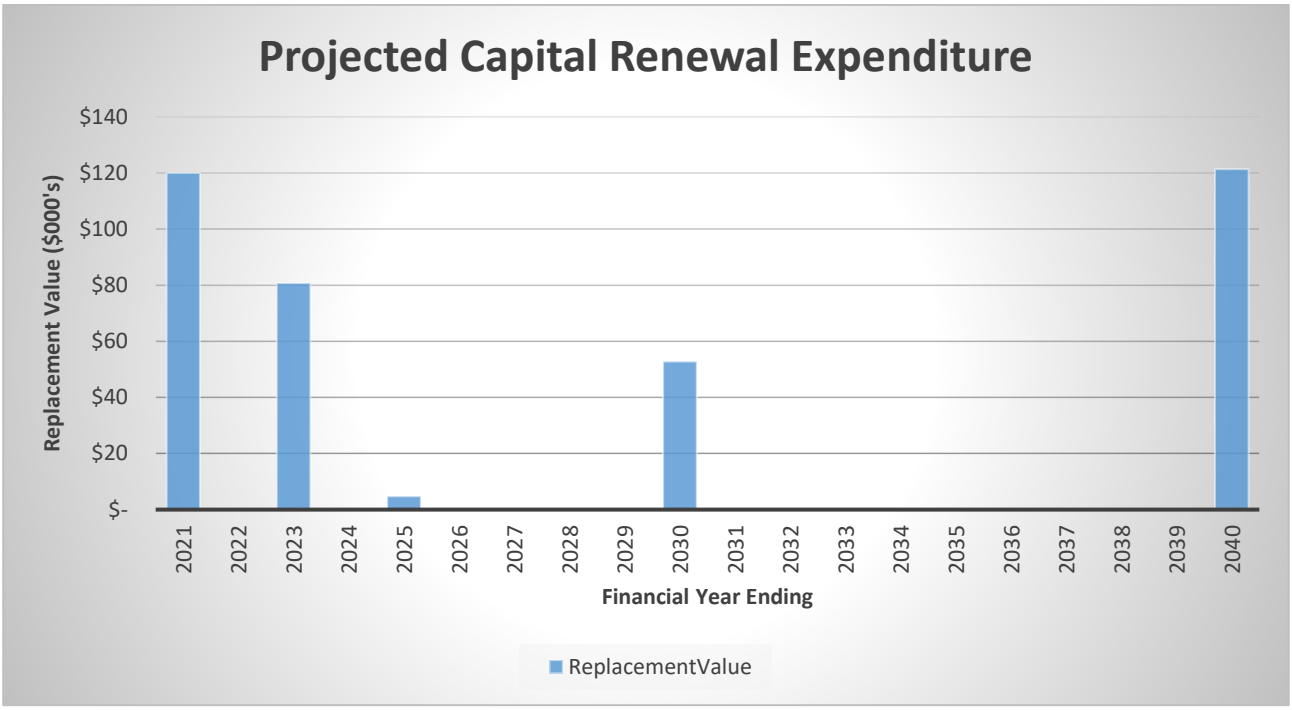
- Council's engineering design standards
- Local Government Association of South Australia Guidelines and Design Requirements

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 2019 financial year dollar values.

The projected capital renewal program is shown in Appendix B.

Figure 4: Projected Capital Renewal Expenditure



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%**

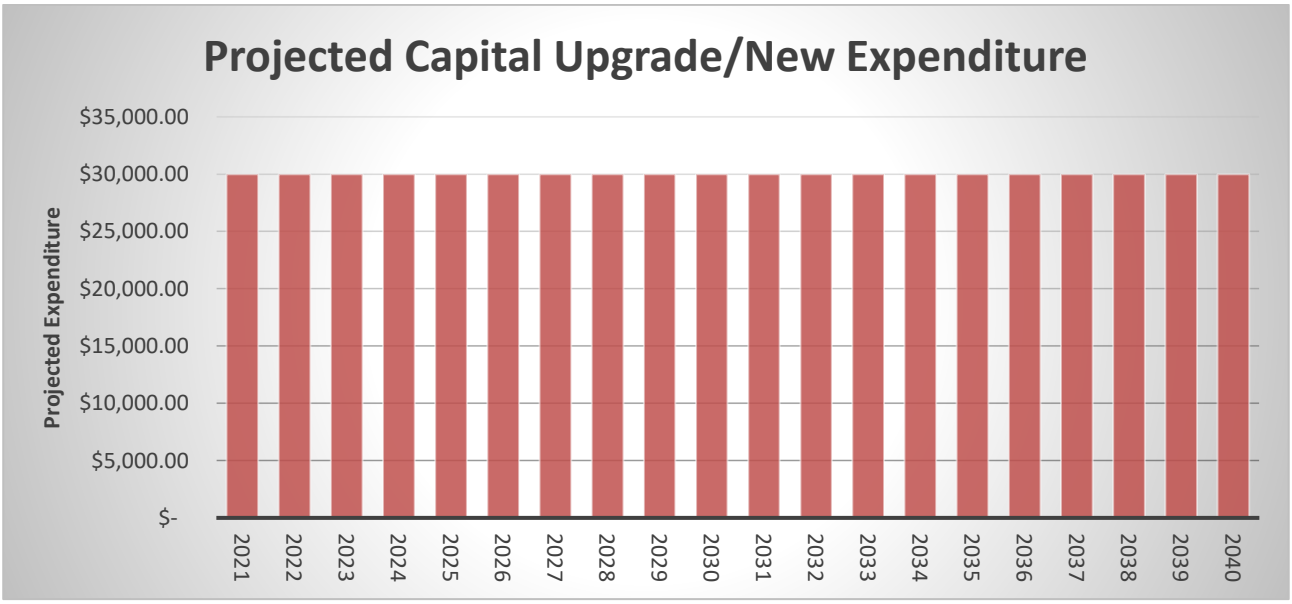
5.5.2 Standards and specifications

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 2019 financial year dollar values.

Figure 5: Projected Capital Upgrade/New Asset Expenditure



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

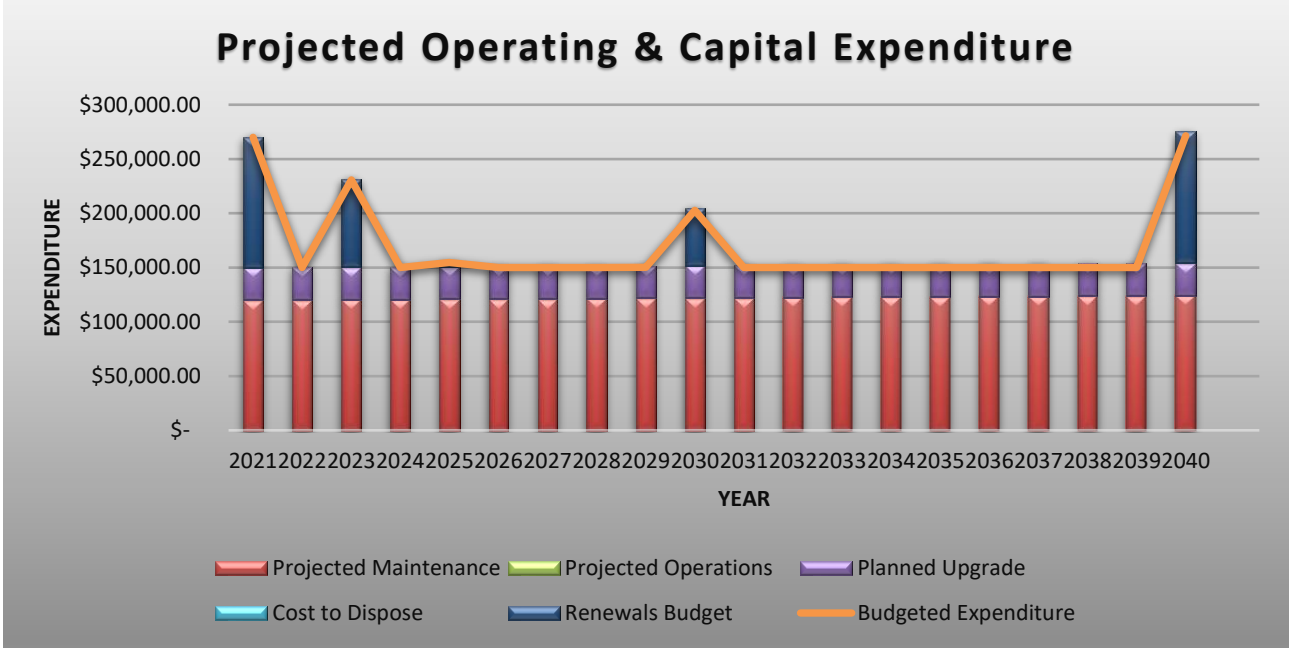
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset 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 2020/21 financial year dollar values.

Figure 6: 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 $195,000 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 $270,000 (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 $75,000 per year (-ve = gap, +ve = surplus).

Life cycle expenditure is 138% of life cycle costs giving a life cycle sustainability index of 1.38.

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 $177,000 per year.

Estimated (budget) operations, maintenance and capital renewal funding is $176,000 per year giving a 10 year funding shortfall of $1,000 per year and a 10 year sustainability indicator of 0.99. This indicates that Council has allocated 99% 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 $192,000 per year.

Estimated (budget) operations, maintenance and capital renewal funding is $191,000 per year giving a 5 year funding surplus of $1,000 per year. This is 99% of projected expenditures giving a 5 year sustainability indicator of 0.99.

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 1.38 for the first year of the asset management plan and ideally over the 4 year life of the AM Plan.

Figure 14 shows the projected asset renewals in the 20 year planning period. 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 7: Projected and Budgeted Renewal Expenditure

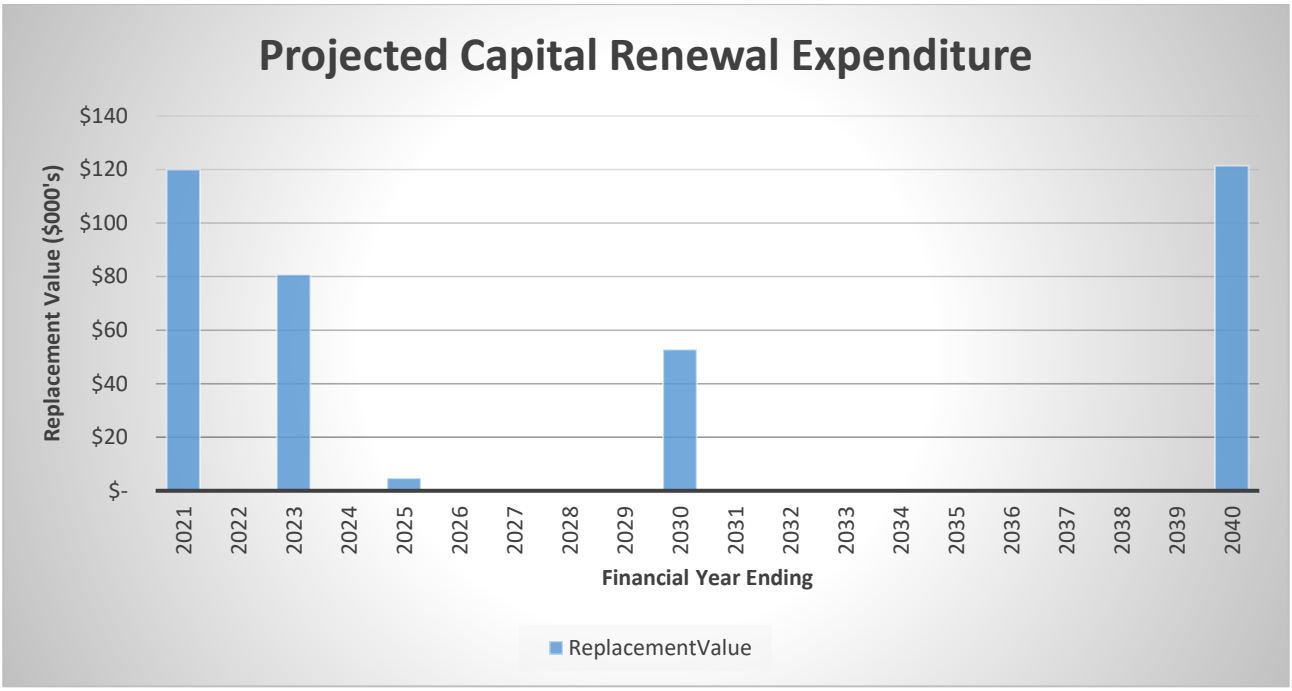


Table 6.1.1 shows the shortfall between projected and budgeted renewals

Table 6.1.1: Projected and Budgeted Renewals and Expenditure Shortfall

Year	Renewals Budget	ReplacementValue	Renewal Financing Shortfall (-gap + surplus)	Cumulative Shortfall (-gap + surplus)
2021	$120,000	$120,000	$0	$0
2022	$0	$0	$0	$0
2023	$80,765	$80,765	$0	$0
2024	$0	$0	$0	$0
2025	$4,751	$4,751	$0	$0
2026	$0	$0	$0	$0
2027	$0	$0	$0	$0
2028	$0	$0	$0	$0
2029	$106	$106	$0	$0
2030	$52,788	$52,788	$0	$0
2031	$0	$0	$0	$0
2032	$0	$0	$0	$0
2033	$0	$0	$0	$0
2034	$0	$0	$0	$0
2035	$0	$0	$0	$0
2036	$0	$0	$0	$0
2037	$0	$0	$0	$0
2038	$0	$0	$0	$0
2039	$0	$0	$0	$0
2040	$121,412	$121,412	$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 have a funding gap but it is not a significant amount considering the length of the asset life.

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
2021	$0	$120,000	$120,000	$30,000	$0
2022	$0	$120,198	$0	$30,000	$0
2023	$0	$120,396	$80,765	$30,000	$0
2024	$0	$120,594	$0	$30,000	$0
2025	$0	$120,792	$4,751	$30,000	$0
2026	$0	$120,990	$0	$30,000	$0
2027	$0	$121,188	$0	$30,000	$0
2028	$0	$121,386	$0	$30,000	$0
2029	$0	$121,584	$106	$30,000	$0
2030	$0	$121,782	$52,788	$30,000	$0
2031	$0	$121,980	$0	$30,000	$0
2032	$0	$122,178	$0	$30,000	$0
2033	$0	$122,376	$0	$30,000	$0
2034	$0	$122,574	$0	$30,000	$0
2035	$0	$122,772	$0	$30,000	$0
2036	$0	$122,970	$0	$30,000	$0
2037	$0	$123,168	$0	$30,000	$0
2038	$0	$123,366	$0	$30,000	$0
2039	$0	$123,564	$0	$30,000	$0
2040	$0	$123,762	$121,412	$30,000	$0

Note: All projected expenditures are in 2020 dollar values

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from general revenue.

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.

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:

- It is assumed that the remaining useful life of underground pipework is as recorded in the asset register and the condition is commensurate with their age profile
- All predicted financial figures are based on 2020/21 rates are not adjusted by inflation for the particular year of work
- All manholes, connection points and flushing points to be of similar standard

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 stormwater 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 stormwater 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 Manager 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 cash flows 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	DCCS	Staff time		Complete	
2	Review accuracy and currency of technical asset register	AM	Staff time	Ongoing	Complete	
3	Develop link from the technical asset register to the financial asset register or develop a single corporate asset register	AM, DCCS, FM	Staff time		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		Complete – further refinement needed	
5	Improve asset valuations and renewal costs	AM	Staff time	Ongoing	Complete - ongoing	Engaged external engineering firm to develop unit rates

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 pump stations to improve the estimated useful lives and maintenance requirements	DCCS	Staff time	2020/21
2	Improve asset valuations and renewal costs including further componentising pump stations, analysing maintenance activities and reviewing estimated remaining lives	AM	Staff time	Ongoing
3	Develop pricing recommendation based on the pricing guidelines prepared by the LGA	AM, DCCS, FM	Complete	2020/21
4	Improve capture of maintenance activities	AM, DIO	Staff time	ongoing
5	Improve capture of customer complaints	AM, Records Officer	Staff time	2020/21

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 2016-2020

Tatiara District Council Annual Business Plan and Budget 2017/18

IPWEA, 2015, *International Infrastructure Management Manual*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au.

IPWEA, 2008, *NAMS.PLUS Asset Management* Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/namsplus.

IPWEA, 2015, *Australian Infrastructure Financial Management Guidelines*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AIFMG.

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 Budgeted Expenditure Accommodated in LTFP

Appendix A Projected 10-year Capital Renewal Works Program

AssetId	AssetType	AssetSubType	Town	Replacement Year	Base Life	Unit Cost	Replacement Cost
SWPump10	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump11	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump12	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump13	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump14	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump15	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump17	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump18	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump19	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump20	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump24	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
SWPump26	Stormwater Junction	Pump Station Switchboard	Keith	2021	25	10000.00	10000.00
				2021 Total			**$120,000.00**
SWPump18	Stormwater Junction	Pump Station	Keith	2023	50	26393.83	26393.83
SWPump20	Stormwater Junction	Pump Station	Keith	2023	50	26393.83	26393.83
SWPump19	Stormwater Junction	Pump Station	Keith	2023	50	26393.83	26393.83
SWJ744	Stormwater Junction	Settling Pit	Keith	2023	50	527.87	527.87
SWJ812	Stormwater Junction	Settling Pit	Keith	2023	50	1055.75	1055.75
				2023 Total			**$80,765.11**
SWJ805	Stormwater Junction	Soakage Pit	Keith	2025	25	211.14	211.14
SWJ764	Stormwater Junction	Soakage Pit	Keith	2025	25	316.72	316.72

SWJ777	Stormwater Junction	Soakage Pit	Keith	2025	25	316.72	316.72
SWJ785	Stormwater Junction	Soakage Pit	Keith	2025	25	211.14	211.14
SWJ791	Stormwater Junction	Soakage Pit	Keith	2025	25	211.14	211.14
SWJ797	Stormwater Junction	Soakage Pit	Keith	2025	25	316.72	316.72
SWJ802	Stormwater Junction	Soakage Pit	Keith	2025	25	316.72	316.72
SWJ811	Stormwater Junction	Soakage Pit	Keith	2025	25	316.72	316.72
SWJ836	Stormwater Junction	Soakage Pit	Keith	2025	25	105.56	105.56
SWJ763	Stormwater Junction	Soakage Pit	Keith	2025	25	316.72	316.72
SWJ790	Stormwater Junction	Soakage Pit	Keith	2025	25	2111.5	2111.5
				2025Total			**$4,750.80**
SWJ749	Stormwater Junction	Soakage Pit	Keith	2029	25	105.56	$105.56
				2029 Total			**$105.56**
SWJ742	Stormwater Junction	Bore Pit	Keith	2030	60	5278.77	5278.77
SWJ806	Stormwater Junction	Bore Pit	Keith	2030	60	5278.77	5278.77
SWJ778	Stormwater Junction	Bore Pit	Keith	2030	60	5278.77	5278.77
SWJ810	Stormwater Junction	Bore Pit	Keith	2030	60	5278.77	5278.77
SWPump6	Stormwater Junction	Pump Station	Keith	2030	50	26393.83	26393.83
SWJ798	Stormwater Junction	Settling Pit	Keith	2030	50	527.87	527.87
SWJ801	Stormwater Junction	Settling Pit	Keith	2030	50	1055.75	1055.75
SWJ803	Stormwater Junction	Settling Pit	Keith	2030	50	527.87	527.87
SWJ808	Stormwater Junction	Settling Pit	Keith	2030	50	1055.75	1055.75
SWJ837	Stormwater Junction	Settling Pit	Keith	2030	50	1055.75	1055.75
SWJ839	Stormwater Junction	Settling Pit	Keith	2030	50	1055.75	1055.75

				2030 Total			**$52,787.65**
TOTAL							**$138,409.10**

Appendix B Budgeted Expenditure Accommodated in LTFP

Tatiara DC - Report 7 - LTFP Expenditure Projections (Stormwater 2020)										
Projected Expenditure	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Capital Expenditure on Renewal/Replacement of existing assets	$120,000	$0	$80,765	$0	$4,751	$0	$0	$0	$106	$52,788
Capital Expenditure on Upgrade/New assets	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000
Operational cost of existing assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance cost of existing assets	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000
Operational cost of New assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance cost of New assets	$198	$396	$594	$792	$990	$1,188	$1,386	$1,584	$1,782	$1,980
Disposal of Surplus Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
All dollar values in ($'000)'s										