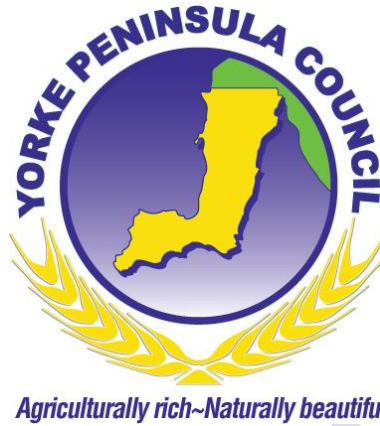


Yorke Peninsula Council





Stormwater Infrastructure **Asset Management Plan**



Scenario 1 Version 1

September 2017

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1. EXECUTIVE SUMMARY

Context

Council owns and manages a Stormwater drainage network to enable the effective disposal of stormwater runoff throughout its district. In the townships of Ardrossan, Maitland and Minlaton there are also reuse facilities which allow for stormwater to be captured and then reused in parklands.

The Stormwater Service

The Stormwater network comprises:

- Stormwater Nodes
- Stormwater Drains
- Stormwater Pumping, Reuse and Storage

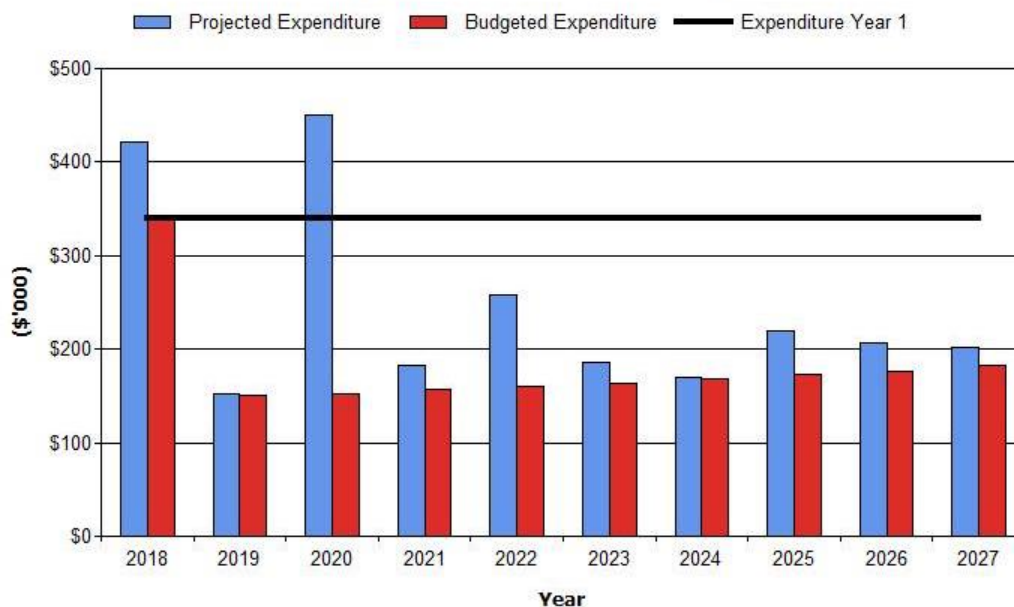
These infrastructure assets have a replacement value of **\$12,103,014**.

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AMP) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period are **\$2,448,000** or **\$245,000** on average per year.

Estimated available funding for this period is **\$1,824,000** or **\$182,000** on average per year which is **75%** of the cost to provide the service. This is a funding shortfall of **\$62,000** on average per year. Projected expenditure required to provide services in the AMP compared with planned expenditure currently included in the Long Term Financial Plan (LTFP) are shown in the graph below.

Yorke Peninsula DC - Projected and Budget Expenditure for (Stormwater_S1_V1)



What we will do

We plan to provide Stormwater services for the following:

- Operation, maintenance, renewal and upgrade of Stormwater assets as outlined in Table 2.1 to meet service levels set by Council in annual budgets.

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:

- Failure to maintain the existing Stormwater network to a safe and serviceable standard
- Failure to undertake inspections of the existing Stormwater network

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

- Ensuring sufficient funding to maintain network at an appropriate level
- Prioritise all works required
- Document all inspections and complaints

Confidence Levels

This AMP is based on the most recent information available at the time of preparing this plan, Council will continue to review and update this plan to increase data confidence levels. Please refer to Table 6.5.1 for the assessment of data used in this AMP.

The Next Steps

The actions resulting from this AMP are:

- Complete the Improvement Plan as set out in Table 7.1

Questions you may have

What is this plan about?

This AMP covers the infrastructure assets that serve the Yorke Peninsula Council community's Stormwater needs. These assets include side entry pits, concrete and plastic pipe, headwalls, box culverts, drains, storage dams and treatment plants.

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 AMP 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.

What can we do?

We can develop options, costs and priorities for future Stormwater services, consult with the community to plan future services to match the community service needs with ability to pay for services and maximise community benefits against costs.

What can you do?

We will be pleased to consider your thoughts on the issues raised in this AMP and suggestions on how we may change or reduce its Stormwater mix of services to ensure that the appropriate level of service can be provided to the community within available funding.

2. INTRODUCTION

2.1 Background

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

This AMP follows the format recommended in Section 4.2.6 of the International Infrastructure Management Manual¹.

This AMP is to be read in conjunction with Council's Asset Management Policy, and the following associated planning documents (available on Council's website or upon request):

- Yorke Peninsula Council Strategic Management Plan 2016-2020
- Yorke Peninsula Council Long Term Financial Plan
- Yorke Peninsula Council Annual Business Plan and Budget
- Yorke Peninsula Council Stormwater Infrastructure Asset Valuation and Methodology

The infrastructure assets covered by this AMP are shown in Table 2.1. These assets are used to provide Stormwater services to the community.

Table 2.1: Assets covered by this Plan

Asset category	Dimension	Replacement Value
Nodes	Side Entry Pits (491) Inlet Pits (51) Outlet Pits (3) Junction Box (122) Air Valve (2) Allotment Connection (73) Inspection Point (5) Gross Pollutant Trap (4) Dissipator (2) Outfall Structure (4)	\$2,259,212
Drains	Concrete Pipe (973m) Plastic Pipe (6,162m) Box Culvert (1050m) Headwalls (102) Spoon Drains (6958m) Open Drains (1286m)	\$9,128,284
Pumping, Reuse and Storage	Pumps Tanks Storage Dams	\$715,518
TOTAL		\$12,103,014

Key stakeholders in the preparation and implementation of this AMP are shown in Table 2.1.1.

Table 2.1.1: Key Stakeholders in the AMP

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none">• Represent needs of community,• Allocate resources to meet the organisation's objectives in providing services while managing risks,• Ensure Council is financially sustainable.
Corporate Management Team	Endorse the development of AMPs and provide resources required to complete

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

	this task. Set high level priorities for asset management development in Council and raise the awareness of this function among Council staff and contractors. Support the implementation of actions resulting from this plan and be prepared to make changes to a better way of managing assets and delivering services. Support for an asset management driven budget and LTFP.
Assets & Infrastructure Services Staff	Manage the infrastructure with resources provided by Council within the allocated budget.

2.2 Goals and Objectives of Asset Management

Council exists to provide services to its community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by 'purchase', by contract, construction by our staff and by donation of assets constructed by developers and others to provide Stormwater services.

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

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

2.3 Plan Framework

Key elements of the plan are

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

2.4 Core and Advanced Asset Management

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

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

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

³ IPWEA, 2011, IIMM.

2.5 Community Consultation

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

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

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

3.2 Strategic and Corporate Goals

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

Our vision is:

We will foster opportunities to support and enhance Yorke Peninsula which is valued for its natural beauty, rich agriculture, spectacular coastline and unique blend of seaside and rural lifestyles.

Relevant organisational goals and objectives and how these are addressed in this AMP are:

Table 3.2: Organisational Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in AMP
Community Connected through Infrastructure	Develop and deliver on Asset Management Plans for all asset classes	Stormwater AMP developed and adopted by Council
Community Connected through Infrastructure	Explore Provision of new infrastructure	New infrastructure provided as per an adopted Stormwater AMP

3.3 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and regulations. These include:

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act	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.
SA Public Health Act and Regulations	Promote and to provide for the protection of the health of the public of South Australia and to reduce the incidence of preventable illness, injury and disability.
Environment Protection Act and Regulations	Provides for the protection of the environment.
Water Industry Act and Regulations	To facilitate planning in connection with water demand and supply.
Work Health and Safety Act and Regulations	To provide for the health, safety and welfare of persons at work.
Office of the Technical Regulator	Monitors compliance with legislation and applicable technical standards in the electricity, gas and water industries.

Council will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan linked to this AMP. Management of risks is discussed in Section 5.2.

3.4 Community Levels of Service

Service levels are defined in two terms, community levels of service and technical levels of service.

Community Levels of Service measure how the community receives the service and whether the Council is providing community value.

Community levels of service measures used in the AMP are:

Quality	How good is the service?
Function	Does it meet users' needs?
Capacity/Utilisation	Is the service over or under used?

The Council's current and expected community service levels are detailed in Tables 3.4 and 3.5. Table 3.4 shows the agreed expected community levels of service based on resource levels in the current long-term financial plan and community consultation/engagement.

Table 3.4: Community Level of Service

Service Attribute	Service Objective	Performance Measure Process	Current Performance	Expected position in 10 years based on current LTFF
COMMUNITY OUTCOMES				
Provide safe and effective disposal of Stormwater to industry standards.				
COMMUNITY LEVELS OF SERVICE				
Quality	Provide an efficient method of collection and disposal/reuse of stormwater.	Customer Service Requests relating to Stormwater maintenance.	<100 per year	<50 per year
	Organisational measure Confidence levels	High	High	High
Function	Stormwater network is appropriately maintained. Meets relevant legislative requirements.	Customer Service Requests relating to Stormwater maintenance. Complies with legislative requirements.	<100 per year Complies with legislative requirements.	<50 per year Continuing to comply with legislative requirements.
	Organisational measure Confidence levels	High	High	High
Capacity/Utilisation	Stormwater network is able to convey all flows in normal rainfall events.	Customer Service Requests relating to inadequate capacity.	Network capacity is adequate to convey all flows in normal rainfall events.	Network capacity is adequate to convey all flows in normal rainfall events.
	Organisational measure Confidence levels	Medium	Medium	Medium

3.5 Technical Levels of Service

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 and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as regular condition and defect inspection of the pipe network,
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (eg pipe repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally been (eg frequency and cost of pipeline replacement and storage component replacement),
- Upgrade – the activities to provide a higher level of service (eg replacing a pipeline with a larger size) or a new service that did not exist previously (eg a new pump station or storage facility).

Service and asset managers plan, implement and control technical service levels to influence the customer service levels.⁴

Table 3.5 shows the technical level of service expected to be provided under this AMP. The agreed sustainable position in the table documents the position agreed by the Council following community consultation and trade-off of service levels performance, costs and risk within resources available in the long-term financial plan.

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⁴ IPWEA, 2011, IIMM, p 2.22

Table 3.5: Technical Levels of Service

Service Attribute	Service Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **	Agreed Sustainable Position ***
TECHNICAL LEVELS OF SERVICE					
Operations	Stormwater network meets user and regulatory requirements.	Inspections of network.	Annual condition and defect inspection of the Stormwater network.	Current Performance	Current Performance
		Budget	Budget - Current	Budget - Current	Budget – Current
Maintenance	Stormwater network is well maintained.	Regular maintenance program and Customer Service Requests completed in a reasonable time frame.	Planned maintenance is undertaken as and where required. Customer Service Requests are actioned in a time frame determined by their priority.	Maintenance is undertaken as planned and required.	Current Performance.
		Budget	Budget - Current	Budget - Current	Budget – Current
Renewal	Renewal of Stormwater assets as required and at the optimum time frame.	Assets renewed as per current renewal program and budget.	Planned renewal work is not planned or budgeted.	Identified renewal work funded each year as per adopted Capital Renewal Program.	Identified renewal work funded each year as per adopted Capital Renewal Program.
		Budget	Budget – Nil	Budget – Renewal Program	Budget – Renewal Program
Upgrade/New	Upgrade of Stormwater assets are identified through inspections, design and new technology.	Assets are upgraded as per current upgrade program and budget.	Planned upgrade work is undertaken as per current upgrade program and budget.	Identified upgrade work funded each year as per adopted Capital Upgrade/New Program.	Identified upgrade work is currently funded.
		Budget	Budget - Current	Budget – Current	Budget – Current

Note: * Current activities and costs (currently funded).

** Desired activities and costs to sustain current service levels and achieve minimum life cycle costs (not currently funded).

*** Activities and costs communicated and agreed with the community as being sustainable (funded position following trade-offs, managing risks and delivering agreed service levels).

4. FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecast

The present position and projections for demand drivers that may impact future service delivery and utilisation of assets were identified and are documented in Table 4.3.

4.3 Demand Impact on Assets

The impact of demand drivers that may affect future service delivery and utilisation of assets are shown in Table 4.3.

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
New Development	Growth through small land divisions.	Expected to continue.	Impact on existing collection, transfer, treatment and storage infrastructure.
Stormwater Reuse	Upgrade of infrastructure to capture stormwater for reuse. Currently funded through grants.	Expected to continue.	Impact on existing collection, transfer, treatment and storage infrastructure.
Regulatory changes to Stormwater standards and guidelines.	Regulatory standards are managed by the Infrastructure Manager.	Additional operational and reporting requirements.	Not identified.

4.4 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 and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures⁵. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

Opportunities for demand management will be developed in future revisions of this AMP.

4.5 Asset Programs to meet Demand

The new assets required to meet growth will be acquired free of cost from land developments and constructed/acquired by the Council. New assets constructed/acquired by the Council are discussed in Section 5.5.

Acquiring these new assets will commit the Council to fund ongoing operations, maintenance and renewal costs for the period that the service provided by the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs in Section 5.

⁵ IPWEA, 2011, IIMM, Table 3.4.1, p 3|58.

5. LIFECYCLE MANAGEMENT PLAN

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

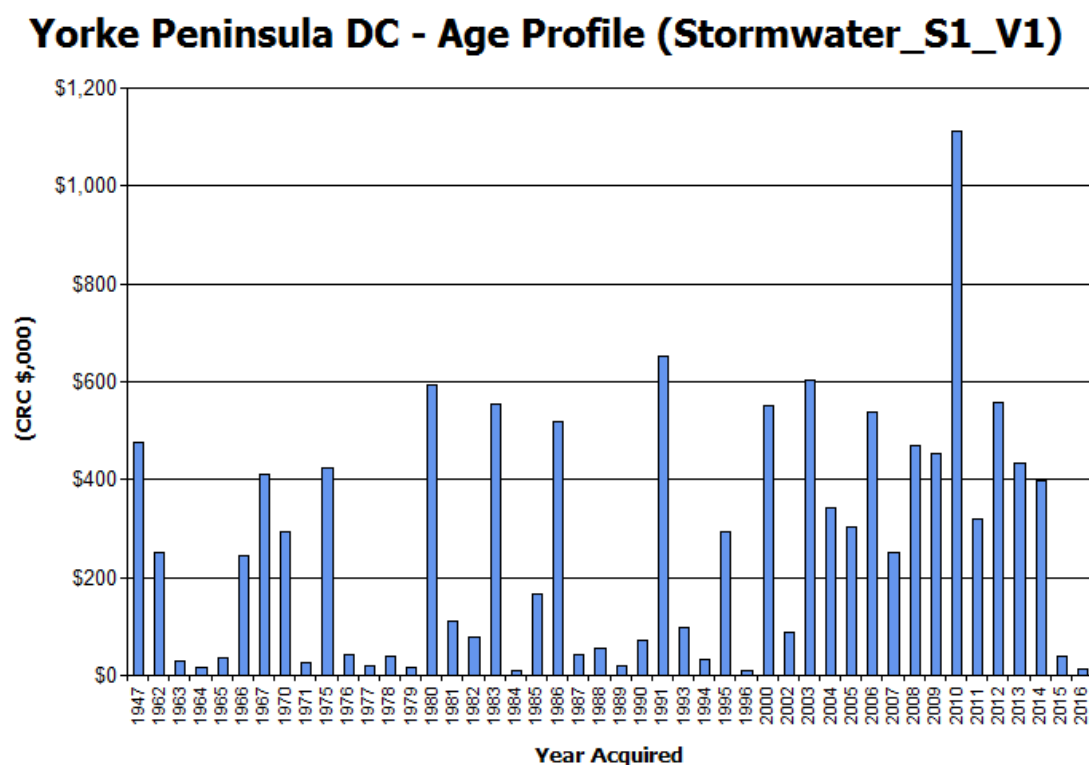
5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AMP are shown in Table 2.1.

The age profile of the assets included in this AMP is shown in Figure 2.

Figure 2: Asset Age Profile



Plans showing the Stormwater assets are:

- Council's GIS
- Records Management System

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
Maitland	Regular blockages (eg Robert Street)
Coobowie, Edithburgh, Parsons	Infrastructure required in various locations

Beach, Point Turton, Stansbury & Wool Bay	
Yorke town	Lack of capacity of current infrastructure in some locations (eg Weaners Street)
Curramulka	Poor design (First and Fourth Street)
Corny Point	Liddiard Road / Dairy Road – design / infrastructure
Port Clinton	Kurilla Street - design / infrastructure
Entire Stormwater Network	Blockages due to not having a regular cleaning schedule

The above service deficiencies were identified from maintenance records and customer service requests.

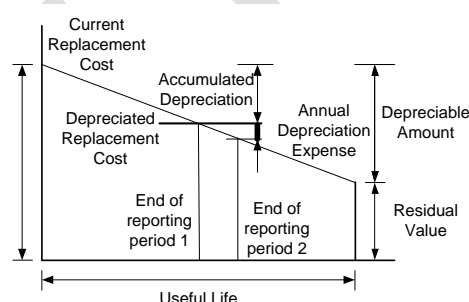
5.1.3 Asset condition

Condition of Stormwater assets is monitored by Council staff but a full condition profile has not yet been developed for the entire Stormwater network. Council have commenced an annual condition and defect inspection of the network and this will be used to develop a condition profile in a future version of this plan.

5.1.4 Asset valuations

The value of assets recorded in the asset register as at **30th June 2016** covered by this AMP is shown below. Assets were last revalued at **1st July 2014**. Assets are valued at Current Replacement Cost (CRC) of an asset minus any accumulated depreciation and impairment losses.

Current Replacement Cost	\$12,103,000
Depreciable Amount	\$12,111,000
Depreciated Replacement Cost ⁶	\$8,685,000
Annual Depreciation Expense	\$164,000



Useful lives were reviewed in **September 2015** by Council staff and consultants. Council value their assets at a component level which enables assets to be assigned an average useful life for each component to determine depreciation rates.

The useful life of Stormwater assets is assumed to be the time that an asset is expected to last before total replacement is required. It is likely that during their useful life, some assets will require maintenance.

The useful life of Stormwater assets is governed by two factors:

- Structural deterioration – i.e. when a pipe or pit or any asset fails due to age/physical deterioration and renewal is required.
- Suitability – when despite being in physically good condition an asset is no longer suitable for purpose, e.g. when a pipe's capacity is exceeded.

The useful lives that are assigned to different Stormwater asset types are based on industry standards.

Major changes from previous valuations are due to the Stormwater Asset Register being updated and the asset group being further componentised and unit rate and useful lives being reviewed.

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

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

Rate of Annual Asset Consumption **1.4%**
(Depreciation/Depreciable Amount)

Rate of Annual Asset Renewal **0%**
(Capital renewal exp/Depreciable amount)

In **2017/18** the Council plans to renew assets at **0%** of the rate they are being consumed and will be increasing its asset stock by **1.6%** in the year.

5.1.5 Historical Data

Historical data, such as construction plans, on Council's Stormwater network are located in Council's offices and records management system.

5.2 Infrastructure Risk Management Plan

An assessment of risks⁷ associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Infrastructure Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational are summarised in Table 5.2. These risks are reported to management and Council.

Table 5.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Pump Failure	No supply.		Telemetry monitoring of systems. Backup pumps available. Staff on call.		Current Budget
Pipe Blockages / Break	Potential flooding of properties, roads and other infrastructure		Regular maintenance		Current Budget
External Party Damage to Pipes	External Party digging through pipes.		Dial Before You Dig (DBYD) Member – notified when external parties intend to undertake excavation works on Council roads, footpaths or land. External parties required to complete SF039 Application to Carry Out Work on Council's Roads or Footpaths prior to laying underground services.		Current Budget

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

5.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety and amenity, eg water quality testing.

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.

⁷ Critical Risks and Treatment have been identified but not assessed

5.3.1 Operations and Maintenance Plan

Operations activities affect service levels including quality and function through water quality testing and regular inspections of the stormwater network.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating, eg water pipe repair. Maintenance may be classified into reactive, planned and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests 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 repairing pits or headwalls, replacement of individual damaged pipes, etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

Actual past and budgeted maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure Trends

Year	Maintenance Expenditure
2014/15	\$111,284
2015/16	\$94,175
2016/17	\$148,618

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

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

5.3.2 Operations and Maintenance Strategies

Council will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities include:

- Scheduling operations activities to deliver the defined level of service in the most efficient manner,
- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes. Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost),
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting 'Very High' and 'High' risks and residual risks after treatment to management and Council,
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs,
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options,
- Maintain a current hierarchy of critical assets and required operations and maintenance activities,
- Develop and regularly review appropriate emergency response capability,

- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

Asset hierarchy

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

The Council's service hierarchy is shown in Table 5.3.2.

Table 5.3.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Nodes	Conveyance of stormwater from source to disposal/reuse
Pipes/Drains	Conveyance of stormwater from source to disposal/reuse
Pumping, Treatment and Storage	Conveyance of stormwater from storage to disposal/reuse Treatment and storage of stormwater for reuse in accordance with regulatory standards

Critical Assets

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

Operations and maintenance activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities will be developed in future versions of this AMP.

Standards and specifications

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

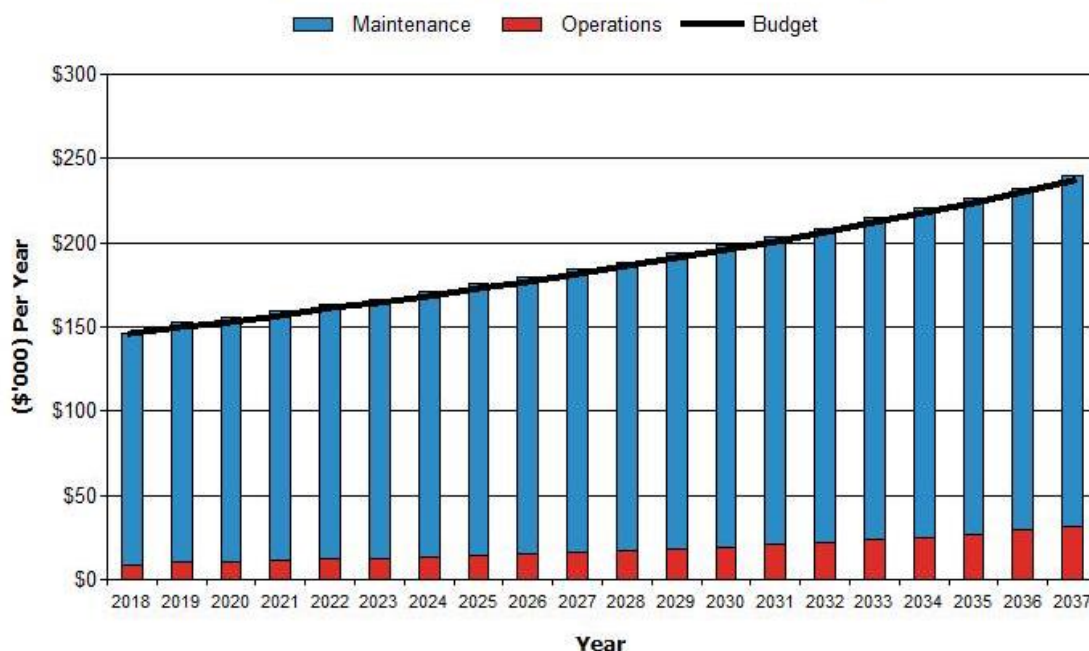
- AS/NZS 3500: Plumbing and drainage.
- AS/NZS 2031: Water quality - Sampling for microbiological analysis (ISO 19458:2006, MOD).
- AS/NZS ISO 3100: Risk management - Principles and Guidelines.
- The National Construction Code (NCC) Volume 3 Plumbing Code of Australia (PCA) including South Australian Variations and/or Additional Provisions as listed in Appendix A.

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 4. Note that all costs are shown in current **2017/18** dollar values (ie real values).

Figure 4: Projected Operations and Maintenance Expenditure

Yorke Peninsula DC - Projected Operations & Maintenance Expenditure (Stormwater_S1_V1)



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

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

5.4 Renewal/Replacement Plan

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

5.4.1 Renewal plan

Assets requiring renewal/replacement are identified from one of three methods.

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, 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 AMP.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed on **September 2015**.⁸

⁸ Stormwater Infrastructure Asset Valuation & Methodology 1 July 2014

Table 5.4.1: Useful Lives of Assets

Asset (Sub)Category	Useful life
Nodes	25 to 75 years
Pipes/Drains	30 to 100 years
Pumping, Storage and Treatment	15 to 100 years

5.4.2 Renewal and Replacement Strategies

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

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

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (eg tank storage capacity), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (eg water quality).⁹

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

- Have a high consequence of failure,
- Have a high utilisation and subsequent impact on users would be greatest,
- The total value represents the greatest net value to the Council,
- Have the highest average age relative to their expected lives,
- Are identified in the AMP as key cost factors,
- Have high operational or maintenance costs, and
- Where replacement with modern equivalent assets would yield material savings.¹⁰

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

⁹ IPWEA, 2011, IIMM, Sec 3.4.4, p 3 | 60.

¹⁰ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3 | 66.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria Guide

Criteria
Blockages / Breakages
Customer Service Requests
Available Budget

Renewal and replacement standards

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

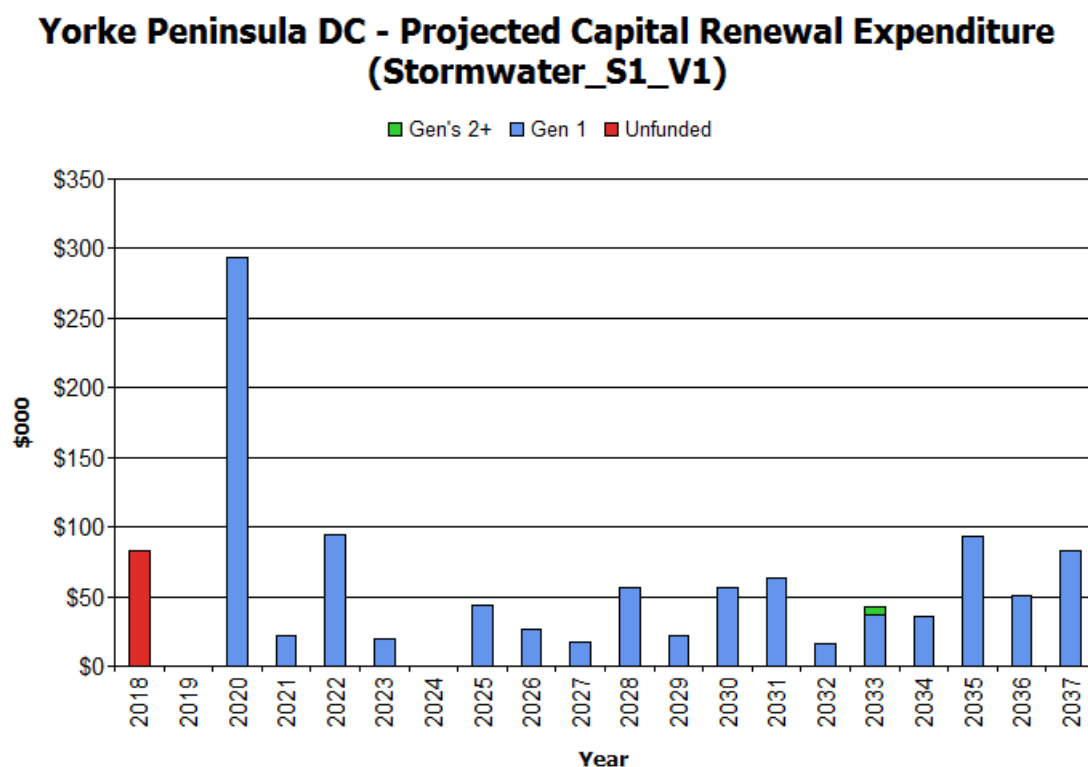
- AS/NZS 3500: Plumbing and drainage.
- AS/NZS 2031: Water quality – Sampling for microbiological analysis (ISO 19458:2006, MOD).
- AS/NZS ISO 3100: Risk management – Principles and Guidelines.
- The National Construction Code (NCC) Volume 3 plumbing Code of Australia (PCA) including South Australian Variations and/or Additional Provisions as listed in Appendix A.

5.4.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditure is forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Figure 5. Note that all amounts are shown in real values. Gen 2 assets shown in Figure 5 are assets with a useful life of less than 20 years, which means they will be replaced twice during the reporting period.

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

Figure 5: Projected Capital Renewal and Replacement Expenditure



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

Renewals and replacement expenditure in the Council's capital works program will be accommodated in the LTFP. 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, officer 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 renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria guide is detailed below.

Table 5.5.1: New Assets Priority Ranking Criteria

Criteria
Cost benefit analysis
Service Deficiency
Usage
Customer Service Requests
Available Budget

5.5.2 Capital Investment Strategies

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

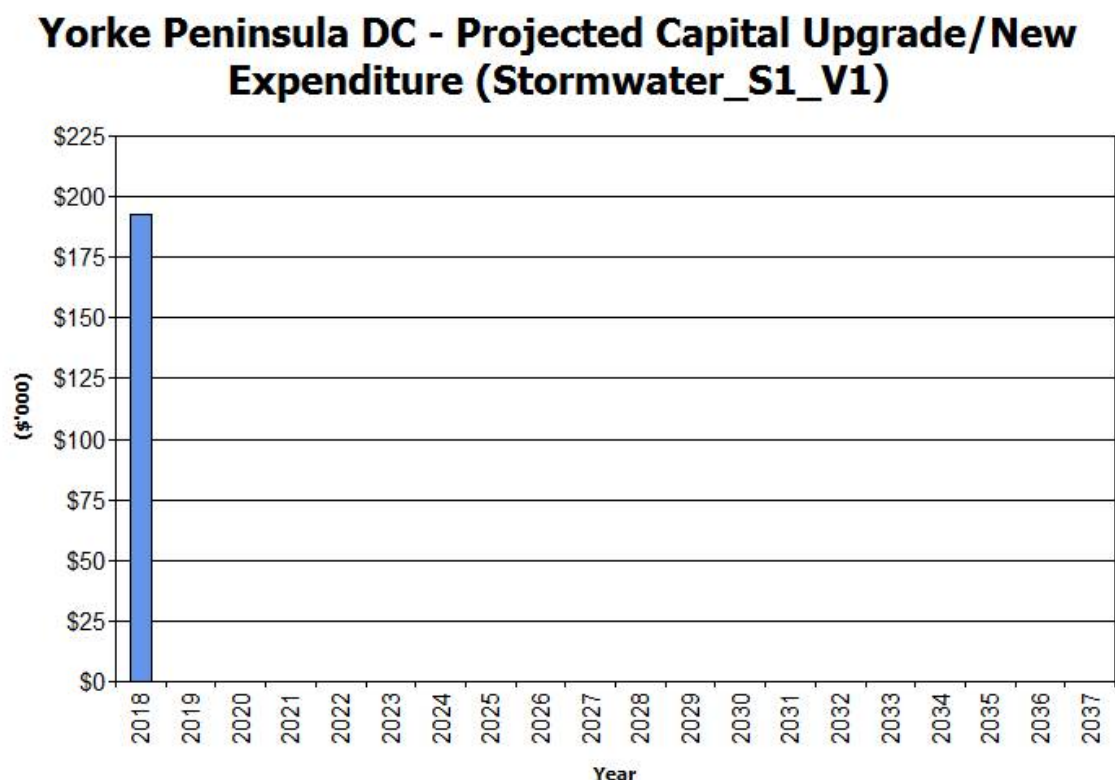
- Planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner,
- Undertake project scoping for all capital upgrade/new projects to identify:
 - the service delivery 'deficiency', present risk and required timeline for delivery of the upgrade/new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

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

5.5.3 Summary of future upgrade/new assets expenditure

Projected upgrade/new asset expenditure is summarised in Figure 6. Newly identified upgrade/new projects will be presented to Council for consideration during the budget process each year.

Figure 6: Projected Capital Upgrade/New Asset Expenditure



Expenditure on new assets and services in the Council's capital works program will be accommodated in the LTFP. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal, together with estimated annual savings from not having to fund operations and maintenance of the assets are not known at this stage. Any revenue gained from asset disposals is accommodated in Council's LTFP.

Where cashflow projections from asset disposals are not available, these will be developed in future revisions of this AMP.

5.7 Service Consequences and Risks

The Council has prioritised decisions made in adopting this AMP to obtain the optimum benefits from its available resources. Decisions were made based on the development of 3 scenarios of AMPs.

Scenario 1 - What we would like to do based on asset register data

Scenario 2 – What we should do with existing budgets and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position). This may require several versions of the AMP.

Scenario 3 – What we can do and be financially sustainable with AMPs matching long-term financial plans.

The development of scenario 1 and scenario 2 AMPs provides the tools for discussion with the Council and community on trade-offs between what we would like to do (scenario 1) and what we should be doing with existing budgets (scenario 2) by balancing changes in services and service levels with affordability and acceptance of the service and risk consequences of the trade-off position (scenario 3).

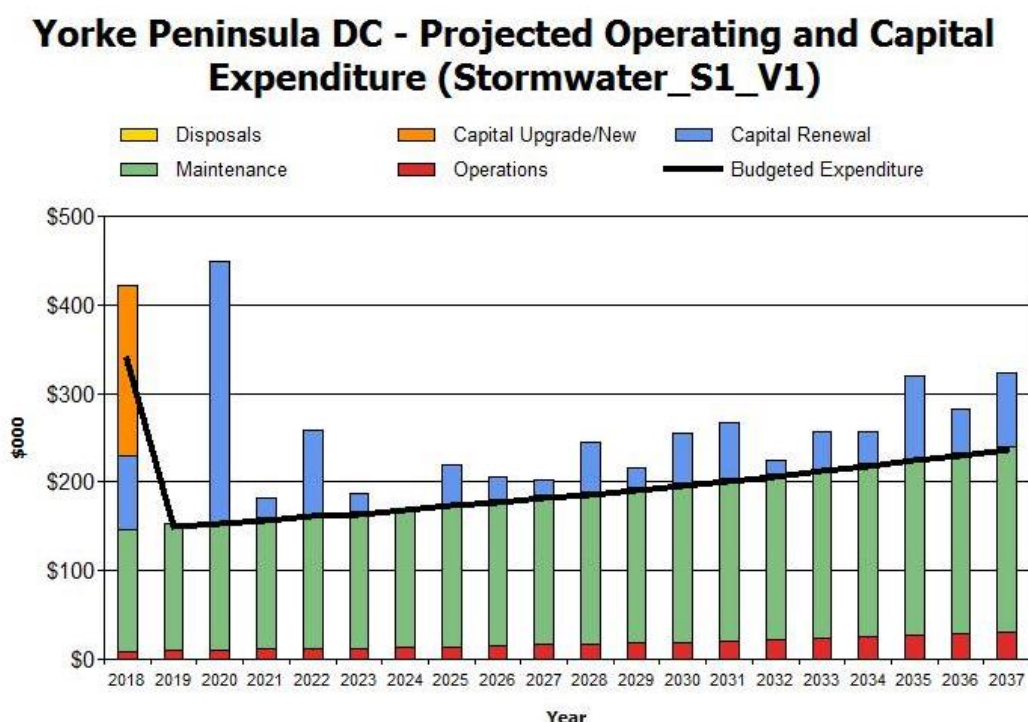
6. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this AMP. 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 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are shown in real values.

Figure 7: Projected Operating and Capital Expenditure



6.1.1 Sustainability of service delivery

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio¹¹ **0%**

The Asset Renewal Funding Ratio is the most important indicator and reveals that over the next 10 years, Council is forecasting that it will have **0%** of the funds required for the optimal renewal and replacement of its assets.

¹¹ AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this AMP is **\$329,000** per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure over the 10 year planning period is **\$163,000** per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by this AMP is **\$166,000** per year.

Life cycle expenditure is **50%** of life cycle costs.

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 Council in providing services to their communities in a financially sustainable manner. This is the purpose of the AMPs and LTFP.

Medium term – 10 year financial planning period

This AMP 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 AMP, 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 **\$225,000** on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is **\$163,000** on average per year giving a 10 year funding shortfall of **\$62,000** per year. This indicates that Council expects to have **72%** of the projected expenditures needed to provide the services documented in the AMP.

Medium Term – 5 year financial planning period

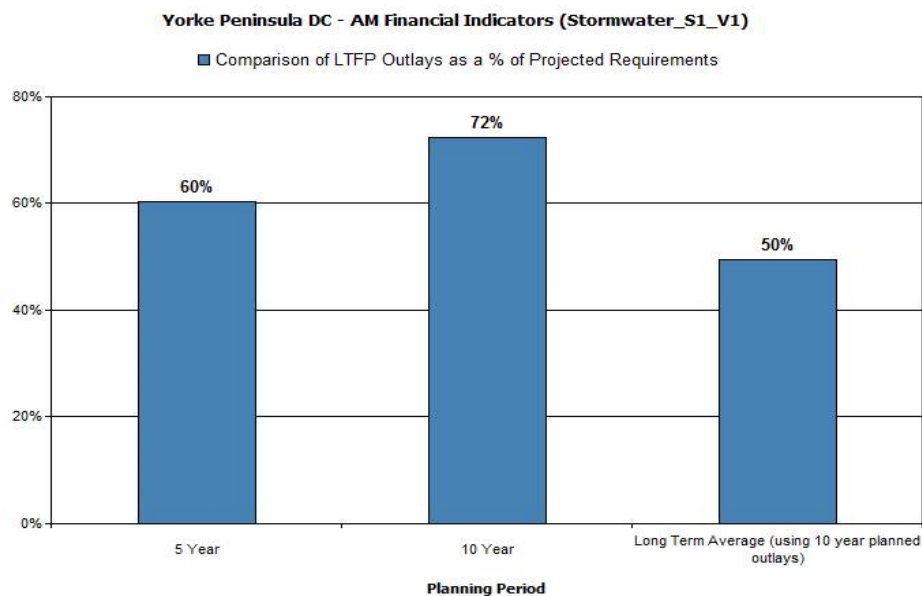
The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is **\$254,000** on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is **\$153,000** on average per year giving a 5 year funding shortfall of **\$101,000**. This indicates that Council expects to have **60%** of projected expenditures required to provide the services shown in this AMP.

Asset management financial indicators

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

Figure 7A: Asset Management Financial Indicators



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

Figure 8 shows the projected asset renewal and replacement expenditure over the 20 years of the AMP. The projected asset renewal and replacement expenditure is compared to renewal and replacement expenditure in the capital works program, which is accommodated in the LTFP.

Figure 8: Projected and LTFP Budgeted Renewal Expenditure

Yorke Peninsula DC - Projected & LTFP Budgeted Renewal Expenditure (Stormwater_S1_V1)

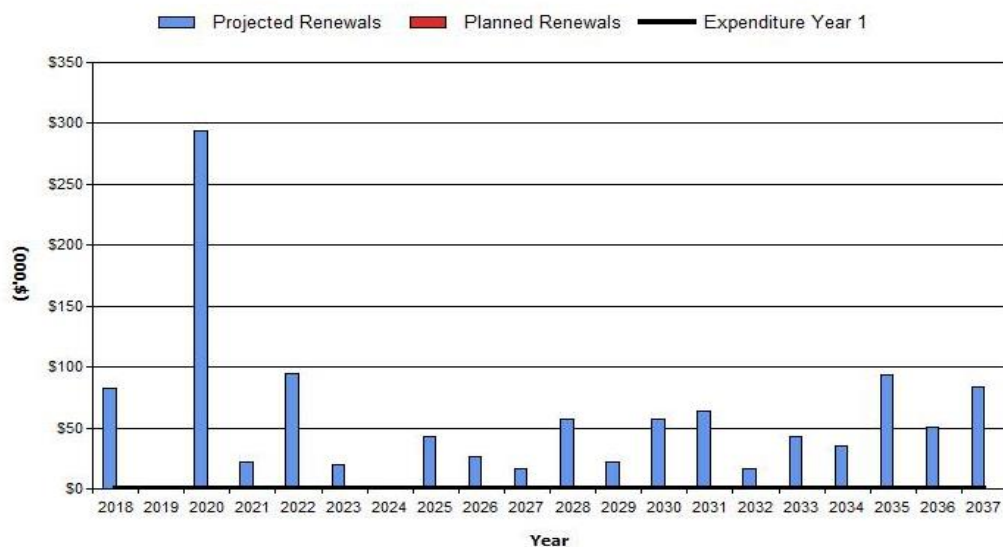


Table 6.1.1 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in the LTFP. Budget expenditures accommodated in the LTFP or extrapolated from current budgets are shown in Appendix D.

Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected Renewals (\$000)	LTFP Renewal Budget (\$000)	Renewal Financing Shortfall (\$000) (-ve Gap, +ve Surplus)	Cumulative Shortfall (\$000) (-ve Gap, +ve Surplus)
2018	\$83	\$0	\$-83	\$-83
2019	\$0	\$0	\$0	\$-83
2020	\$294	\$0	\$-294	\$-377
2021	\$22	\$0	\$-22	\$-399
2022	\$94	\$0	\$-94	\$-494
2023	\$20	\$0	\$-20	\$-514
2024	\$0	\$0	\$0	\$-514
2025	\$43	\$0	\$-43	\$-557
2026	\$26	\$0	\$-26	\$-584
2027	\$17	\$0	\$-17	\$-601
2028	\$57	\$0	\$-57	\$-657
2029	\$22	\$0	\$-22	\$-680
2030	\$57	\$0	\$-57	\$-737
2031	\$64	\$0	\$-64	\$-800
2032	\$16	\$0	\$-16	\$-817
2033	\$43	\$0	\$-43	\$-860
2034	\$35	\$0	\$-35	\$-895
2035	\$93	\$0	\$-93	\$-988
2036	\$50	\$0	\$-50	\$-1,039
2037	\$83	\$0	\$-83	\$-1,122

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

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

A gap between **projected asset renewal/replacement expenditure and amounts accommodated in the LTFP** indicates that **further work is required on reviewing service levels in the AMP (including possibly revising the LTFP)** before finalising the AMP to manage required service levels and funding **to eliminate any funding gap**.

We will manage the 'gap' by developing this AMP to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community.

6.1.2 Projected expenditures for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year LTFP.

Expenditure projections are in **2017/18** real values.

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

Year	Operations (\$000)	Maintenance (\$000)	Projected Capital Renewal (\$000)	Capital Upgrade/ New (\$000)	Disposals (\$000)
2018	\$9	\$137	\$83	\$193	\$0
2019	\$10	\$142	\$0	\$0	\$0
2020	\$10	\$145	\$294	\$0	\$0
2021	\$11	\$148	\$22	\$0	\$0
2022	\$12	\$151	\$94	\$0	\$0
2023	\$12	\$154	\$20	\$0	\$0
2024	\$13	\$157	\$0	\$0	\$0
2025	\$14	\$161	\$43	\$0	\$0
2026	\$15	\$164	\$26	\$0	\$0
2027	\$16	\$168	\$17	\$0	\$0
2028	\$17	\$171	\$57	\$0	\$0
2029	\$18	\$175	\$22	\$0	\$0
2030	\$19	\$179	\$57	\$0	\$0
2031	\$21	\$182	\$64	\$0	\$0
2032	\$22	\$186	\$16	\$0	\$0
2033	\$24	\$190	\$43	\$0	\$0
2034	\$25	\$195	\$35	\$0	\$0
2035	\$27	\$199	\$93	\$0	\$0
2036	\$29	\$203	\$50	\$0	\$0
2037	\$31	\$208	\$83	\$0	\$0

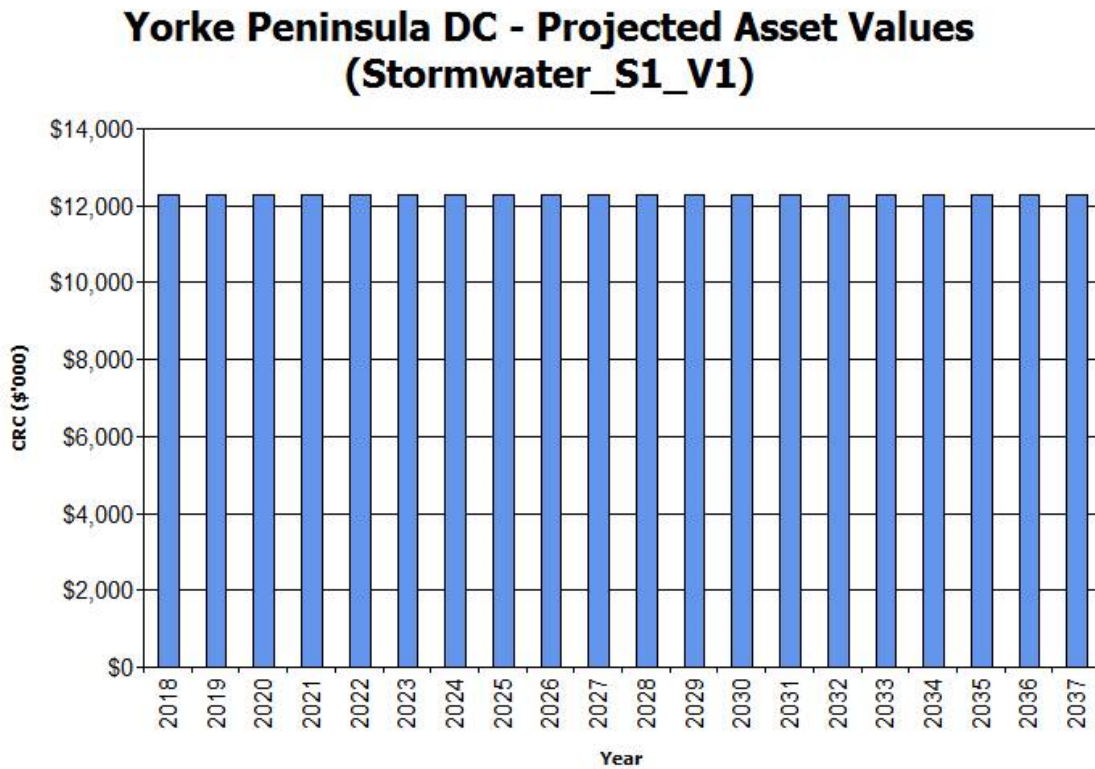
6.2 Funding Strategy

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

6.3 Valuation Forecasts

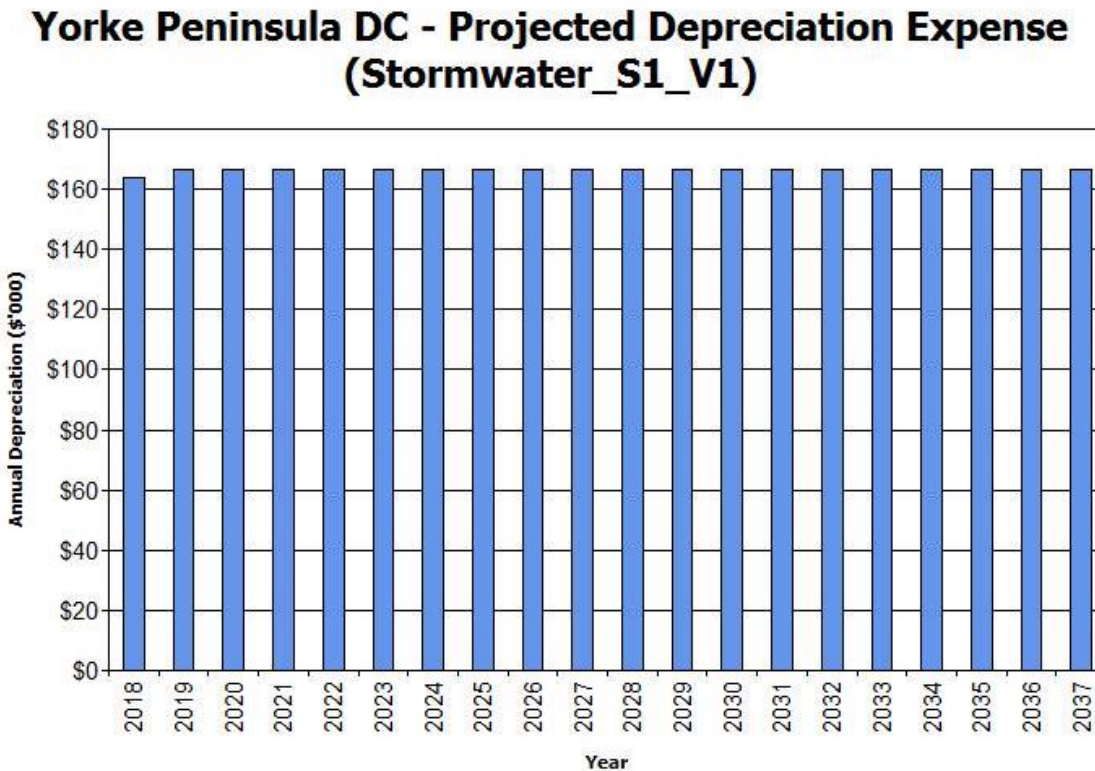
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 9 shows the projected replacement cost asset values over the planning period in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

Figure 9: Projected Asset Values



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

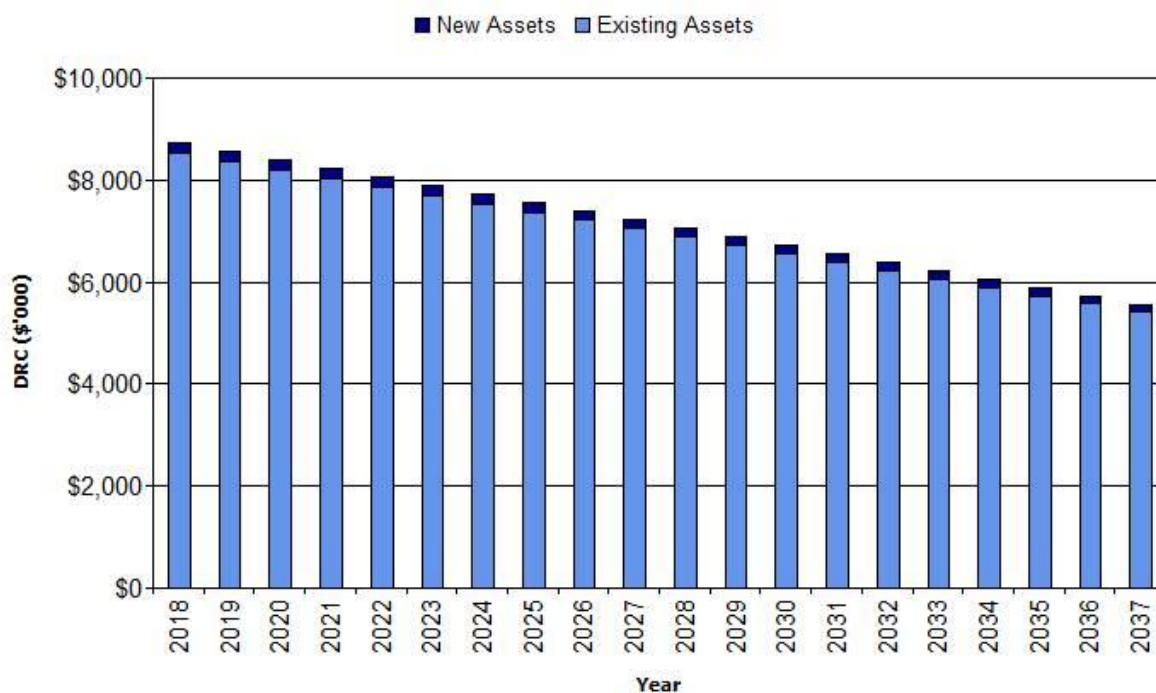
Figure 10: Projected Depreciation Expense



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

Figure 11: Projected Depreciated Replacement Cost

Yorke Peninsula DC - Projected Depreciated Replacement Cost (Stormwater_S1_V1)



6.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this AMP 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 AMP and risks that these may change are shown in Table 6.4.

Table 6.4: Key Assumptions made in AMP and Risks of Change

Key Assumptions	Risks of Change to Assumptions
Asset data is completed and reliable	Discovery of assets not recorded in the asset register will increase capital renewal expenditure and depreciation expense projections.
Legislative compliance will remain constant	Changes in legislation and regulation may increase operating and maintenance expenditure projections.
Average useful lives are based on current knowledge	A review of useful lives has the potential to vary future cost predictions.

6.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this AMP are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale¹² in accordance with Table 6.5.

Table 6.5: Data Confidence Grading System

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

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

Table 6.5.1: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment	Comment
Demand drivers	E	Not developed
Growth projections	E	Not used
Operations expenditures	B	Current and previous budget information
Maintenance expenditures	B	Current and previous budget information
Projected Renewal exps. - Asset values	B	Generated from CONQUEST. Data reviewed and updated for the implementation of CONQUEST and a Stormwater valuation.
- Asset residual values	B	Generated from CONQUEST. Data reviewed and updated for the implementation of CONQUEST and a Stormwater valuation.
- Asset useful lives	B	Generated from CONQUEST. Data reviewed and updated for the implementation of CONQUEST and a Stormwater valuation.
- Condition modelling	E	Not used / developed
- Network renewals	B	Generated from CONQUEST. Data reviewed and updated for the implementation of CONQUEST and a Stormwater valuation.
- Defect repairs	C	Generated from Assets & Infrastructure Services
Upgrade/New expenditures	C	Generated from Assets & Infrastructure Services
Disposal expenditures	B	Generated from Assets & Infrastructure Services – No disposals identified by staff.

Over all data sources the data confidence is assessed as **reliable (B)** confidence level for data used in the preparation of this AMP.

¹² IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Improvement Plan

The asset management improvement plan generated from this AMP is shown in Table 7.1.

Table 7.1: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Collect condition data on the Stormwater network	Infrastructure Manager	Annual Budget Allocation	Ongoing
2	Define Levels of Service	Director A & I	In house	Ongoing
3	Develop the Capital Works program in alignment with the Asset Management System	Infrastructure Manager / Asset Manager	In house	2018/19 Budget
4	Continual review of Asset Register	Infrastructure Manager / Asset Manager	In house	Ongoing
5	Continue development of Council's Asset Management System (Conquest) and Geospatial Information System (MapInfo)	Asset Manager	In house	Ongoing
6	Conduct a risk assessment workshop to further develop the critical risk and treatment plans	Risk Management Officer	In house	Ongoing
7	Review Future Demand and develop a Demand Management Plan if required.	Asset Manager / Manager Financial Services / Manager Development Service	In house	Ongoing
8	Develop Priority Ranking Criteria for <i>Renewal and Replacement</i> and <i>New/Upgrade</i> of assets	Infrastructure Manager / Asset Manager	In house	Ongoing

7.2 Monitoring and Review Procedures

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

The AMP will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the Council's LTFP.

The AMP has a life of 4 years (Council election cycle) and is due for complete revision and updating within two years of each Council election.

7.3 Performance Measures

The effectiveness of the AMP can be measured in the following ways:

- The degree to which the required projected expenditures identified in this AMP are incorporated into Council's LTFP,
- 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 AMP,
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the Council's Strategic Plan and associated plans,
- **The Asset Renewal Funding Ratio achieving the target of 1.0.**

- The Asset Sustainability Ratio (*Per LGA 'Financial Sustainability' Information Paper No. 9: Financial Indicators - Revised May 2015*) is to achieve capital outlays on renewing/replacing assets at greater than 90% but less than 110% of the level proposed in the AMP.

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8. REFERENCES

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9. APPENDICES

Appendix A Maintenance Response Levels of Service

Appendix B Projected 10 year Capital Renewal and Replacement Works Program

Appendix C Abbreviations

Appendix D Glossary

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Appendix A Maintenance Response Levels of Service

To be developed in future revisions of this plan.

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Appendix B Projected 10 year Capital Renewal and Replacement Works Program

Yorke Peninsula DC - Report 6 - Appendix B 10 year Renewal & Replacement Program (Stormwater_S1_V1)								
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
24937	Transfer Pump 10kW	Maitland SW Reuse Pump Shed 2 Main Transfer Pump		Maitland SW Reuse Pump Shed 2	-9	2009	\$6,271	15
Subtotal							\$6,271	
23728	2000mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00043) in East Terrace	East Terrace	Ardrossan	-5	2013	\$14,680	50
23729	2000mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00044) in East Terrace	East Terrace	Ardrossan	-5	2013	\$13,724	50
Subtotal							\$28,405	
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
23734	1800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00041) in Second Street	Second Street	Ardrossan	-4	2014	\$10,884	50
24943	Foot Valve Screen 100mm	Maitland SW Reuse Pump Shed 2 Foot Valve Screen 100mm SS		Maitland SW Reuse Pump Shed 2	-4	2014	\$914	20
Subtotal							\$11,798	
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
23780	1300mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00056) in Alice Street	Alice Street	Maitland	-3	2015	\$7,824	50
23733	5000mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00042) in North Terrace	North Terrace	Ardrossan	-3	2015	\$28,686	50
Subtotal							\$36,510	

Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
24002	1000mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00266) in Marno Street	Marno Street	Yorketown	2	2020	\$2,978	50
24016	1100mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00261) in Warooka Road	Warooka Road	Yorketown	2	2020	\$5,653	50
23762	1200mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00095) in Edith Street	Edith Street	Edithburgh	2	2020	\$8,336	50
23763	1200mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00096) in O'Halloran Parade	O'Halloran Parade	Edithburgh	2	2020	\$6,412	50
24001	1200mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00267) in Marno Street	Marno Street	Yorketown	2	2020	\$4,185	50
23972	1400mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00175) in St Vincent Street	St Vincent Street	Stansbury	2	2020	\$12,166	50
23970	1400mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00176) in St Vincent Street	St Vincent Street	Stansbury	2	2020	\$12,796	50
23761	1800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00099) in Edith Street	Edith Street	Edithburgh	2	2020	\$12,504	50
23982	1800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00206) in Main Street	Main Street	Warooka	2	2020	\$11,238	50
24959	1m x 2m Concrete Sump	Minlaton SW Reuse Catchment Dam Pump Sump		Minlaton SW Reuse Catchment Dam	2	2020	\$4,114	50
23774	2000mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00098) in Yorketown Road	Yorketown Road	Edithburgh	2	2020	\$13,893	50
23991	400mm Concrete Spoon	Spoon Drain (Yorke-SW-SP00205) in	Sturt Bay Road	Warooka	2	2020	\$1,641	50

	Drain	Sturt Bay Road						
23980	400mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00207) in Fifth Street	Fifth Street	Warooka	2	2020	\$1,609	50
23989	400mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00208) in Oval Avenue	Oval Avenue	Warooka	2	2020	\$1,792	50
23996	500mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00270) in David Street	David Street	Yorke town	2	2020	\$1,662	50
23971	600mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00177) in St Vincent Street	St Vincent Street	Stansbury	2	2020	\$3,894	50
23969	600mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00178) in St Vincent Street	St Vincent Street	Stansbury	2	2020	\$3,882	50
23974	600mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00179) in Towler Street	Towler Street	Stansbury	2	2020	\$3,751	50
23979	600mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00198) in Central Street	Central Street	Warooka	2	2020	\$2,688	50
23978	600mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00199) in Central Street	Central Street	Warooka	2	2020	\$2,747	50
23757	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00100) in Anstey Terrace	Anstey Terrace	Edithburgh	2	2020	\$3,261	50
23767	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00101) in Park Terrace North	Park Terrace North	Edithburgh	2	2020	\$2,188	50
23966	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00181) in Pioneer Street	Pioneer Street	Stansbury	2	2020	\$4,111	50
23973	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00182) in Stormbird Street	Stormbird Street	Stansbury	2	2020	\$2,899	50

23953	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00183) in Anzac Parade	Anzac Parade	Stansbury	2	2020	\$3,707	50
23965	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00184) in Park Terrace	Park Terrace	Stansbury	2	2020	\$7,205	50
23964	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00185) in Park Terrace	Park Terrace	Stansbury	2	2020	\$3,986	50
23963	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00186) in Park Terrace	Park Terrace	Stansbury	2	2020	\$3,191	50
23962	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00187) in Park Terrace	Park Terrace	Stansbury	2	2020	\$3,442	50
23961	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00188) in Park Terrace	Park Terrace	Stansbury	2	2020	\$3,595	50
23990	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00197) in Second Street	Second Street	Warooka	2	2020	\$2,968	50
24008	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00254) in Stansbury Road	Stansbury Road	Yorkestown	2	2020	\$2,383	50
24006	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00255) in Minlaton Road	Minlaton Road	Yorkestown	2	2020	\$2,216	50
24005	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00256) in Minlaton Road	Minlaton Road	Yorkestown	2	2020	\$3,205	50
24007	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00257) in Minlaton Road	Minlaton Road	Yorkestown	2	2020	\$4,334	50
24011	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00258) in Victoria Street	Victoria Street	Yorkestown	2	2020	\$2,815	50
24012	700mm Concrete Spoon	Spoon Drain (Yorke-SW-SP00259) in	Victoria Street	Yorkestown	2	2020	\$3,442	50

	Drain	Victoria Street						
24010	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00260) in Victoria Street	Victoria Street	Yorketown	2	2020	\$3,749	50
24013	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00262) in Warooka Road	Warooka Road	Yorketown	2	2020	\$1,895	50
24014	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00263) in Warooka Road	Warooka Road	Yorketown	2	2020	\$2,216	50
24015	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00264) in Warooka Road	Warooka Road	Yorketown	2	2020	\$3,609	50
24003	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00265) in Marno Street	Marno Street	Yorketown	2	2020	\$2,355	50
23994	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00268) in David Street	David Street	Yorketown	2	2020	\$3,122	50
23995	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00269) in David Street	David Street	Yorketown	2	2020	\$2,982	50
24000	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00271) in Honner Avenue	Honner Avenue	Yorketown	2	2020	\$2,787	50
23997	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00272) in Elizabeth Street	Elizabeth Street	Yorketown	2	2020	\$2,968	50
23998	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00273) in Elizabeth Street	Elizabeth Street	Yorketown	2	2020	\$3,136	50
23999	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00274) in Honner Avenue	Honner Avenue	Yorketown	2	2020	\$2,188	50
24020	700mm Concrete	Spoon Drain (Yorke-SW-	Waterloo Bay Road	Yorketown	2	2020	\$4,000	50

	Spoon Drain	SP00275) in Waterloo Bay Road						
24019	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00276) in Waterloo Bay Road	Waterloo Bay Road	Yorketown	2	2020	\$2,425	50
24018	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00277) in Waterloo Bay Road	Waterloo Bay Road	Yorketown	2	2020	\$4,223	50
24017	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00278) in Waterloo Bay Road	Waterloo Bay Road	Yorketown	2	2020	\$5,324	50
23993	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00279) in Anderson Terrace	Anderson Terrace	Yorketown	2	2020	\$2,787	50
23968	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00180) in South Terrace	South Terrace	Stansbury	2	2020	\$7,013	50
23976	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00194) in Brentwood Road	Brentwood Road	Warooka	2	2020	\$1,844	50
23977	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00195) in Brentwood Road	Brentwood Road	Warooka	2	2020	\$2,901	50
23984	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00196) in Main Street	Main Street	Warooka	2	2020	\$3,919	50
23992	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00201) in Third Street	Third Street	Warooka	2	2020	\$7,205	50
23988	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00202) in Main Street	Main Street	Warooka	2	2020	\$3,343	50
23983	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00203) in Main Street	Main Street	Warooka	2	2020	\$3,324	50
23986	800mm Concrete	Spoon Drain (Yorke-SW-	Main Street	Warooka	2	2020	\$3,362	50

	Spoon Drain	SP00204) in Main Street						
24009	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00253) in Stansbury Road	Stansbury Road	Yorke town	2	2020	\$6,167	50
23981	800mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00290) in First Street	First Street	Warooka	2	2020	\$4,630	50
23758	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00097) in Anstey Terrace	Anstey Terrace	Edithburgh	2	2020	\$5,317	50
23985	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00200) in Main Street	Main Street	Warooka	2	2020	\$3,156	50
23987	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00209) in Main Street	Main Street	Warooka	2	2020	\$4,453	50
24957	Elevated Concrete Platform 2m x 2m	Minlaton SW Reuse Catchment Dam Concrete Platform		Minlaton SW Reuse Catchment Dam	2	2020	\$4,648	50
24956	Elevated Concrete Walkway 1.2m x 5m	Minlaton SW Reuse Catchment Dam Walkway		Minlaton SW Reuse Catchment Dam	2	2020	\$6,158	50
Subtotal							\$294,097	
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
24027	Bitumen Surface for Swale Drain 2.5m wide	Swale Drain (Yorke-SW-SP00068) in Tiddy Avenue	Tiddy Avenue	Maitland	3	2021	\$11,024	30
24028	Bitumen Surface for Swale Drain 2.5m wide	Swale Drain (Yorke-SW-SP00069) in Tiddy Avenue	Tiddy Avenue	Maitland	3	2021	\$11,286	30
Subtotal							\$22,310	

Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
24574	Concrete Junction Box	Junction Box (Yorke-SW-N00499) in Young Street	Young Street	Yorketown	4	2022	\$2,605	75
24555	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00466) in Weaners Street	Weaners Street	Yorketown	4	2022	\$2,055	75
24559	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00470) in Weaners Street	Weaners Street	Yorketown	4	2022	\$2,055	75
24457	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00478) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,055	75
24565	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00490) in Young Street	Young Street	Yorketown	4	2022	\$2,055	75
24569	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00494) in Edithburgh Road	Edithburgh Road	Yorketown	4	2022	\$2,055	75
24576	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00501) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,055	75
24474	Grated Inlet Pit	Grated Inlet/Outlet Pit (Yorke-SW-N00509) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,055	75
24469	Outlet Pit	Inlet/Outlet Pits (Yorke-SW-N00504) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,055	75

24553	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00464) in Jacobs Street	Jacobs Street	Yorkestown	4	2022	\$2,217	75
24554	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00465) in Jacobs Street	Jacobs Street	Yorkestown	4	2022	\$2,217	75
24556	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00467) in Weaners Street	Weaners Street	Yorkestown	4	2022	\$2,217	75
24557	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00468) in Weaners Street	Weaners Street	Yorkestown	4	2022	\$2,217	75
24558	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00469) in Weaners Street	Weaners Street	Yorkestown	4	2022	\$2,217	75
24560	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00471) in David Street	David Street	Yorkestown	4	2022	\$2,217	75
24561	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00472) in Waterloo Bay Road	Waterloo Bay Road	Yorkestown	4	2022	\$2,217	75
24562	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00473) in Waterloo Bay Road	Waterloo Bay Road	Yorkestown	4	2022	\$2,217	75
24563	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00474) in Waterloo Bay Road	Waterloo Bay Road	Yorkestown	4	2022	\$2,217	75
24454	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00475) in Waterloo Bay Road	Waterloo Bay Road	Yorkestown	4	2022	\$2,217	75
24455	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00476) in Waterloo Bay Road	Waterloo Bay Road	Yorkestown	4	2022	\$2,217	75
24456	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00477) in Waterloo Bay	Waterloo Bay Road	Yorkestown	4	2022	\$2,217	75

		Road						
24458	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00479) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,217	75
24459	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00480) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,217	75
24460	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00481) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,217	75
24461	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00482) in Stansbury Road	Stansbury Road	Yorketown	4	2022	\$2,217	75
24462	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00483) in Stansbury Road	Stansbury Road	Yorketown	4	2022	\$2,217	75
24463	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00484) in Edithburgh Road	Edithburgh Road	Yorketown	4	2022	\$2,217	75
24464	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00485) in Stansbury Road	Stansbury Road	Yorketown	4	2022	\$2,217	75
24465	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00486) in Stansbury Road	Stansbury Road	Yorketown	4	2022	\$2,217	75
24466	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00487) in Stansbury Road	Stansbury Road	Yorketown	4	2022	\$2,217	75
24467	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00488) in Young Street	Young Street	Yorketown	4	2022	\$2,217	75
24564	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00489) in Young Street	Young Street	Yorketown	4	2022	\$2,217	75

24566	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00491) in Young Street	Young Street	Yorketown	4	2022	\$2,217	75
24567	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00492) in Edithburgh Road	Edithburgh Road	Yorketown	4	2022	\$2,217	75
24568	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00493) in Edithburgh Road	Edithburgh Road	Yorketown	4	2022	\$2,217	75
24570	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00495) in Edithburgh Road	Edithburgh Road	Yorketown	4	2022	\$2,217	75
24571	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00496) in Memorial Drive	Memorial Drive	Yorketown	4	2022	\$2,217	75
24572	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00497) in Memorial Drive	Memorial Drive	Yorketown	4	2022	\$2,217	75
24573	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00498) in Memorial Drive	Memorial Drive	Yorketown	4	2022	\$2,217	75
24575	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00500) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,217	75
24577	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00502) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,217	75
24468	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00503) in Minlaton Road	Minlaton Road	Yorketown	4	2022	\$2,217	75
24887	Side Entry Pit - Single	Side Entry Pit (Yorke-SW-N00885) in Warooka Road	Warooka Road	Yorketown	4	2022	\$2,217	75
Subtotal							\$94,422	

Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
24920	Fresh Water Pump 0.3kW	Maitland SW Reuse Pump Shed 1 Stock Tank Transfer Pump		Maitland SW Reuse Pump Shed 1	5	2023	\$2,079	15
24961	Irrigation Pump 2.2kW	Minlaton SW Reuse Catchment Dam Oval Irrigation Transfer Pump 1		Minlaton SW Reuse Catchment Dam	5	2023	\$3,529	15
24962	Irrigation Pump 2.2kW	Minlaton SW Reuse Catchment Dam Oval Irrigation Transfer Pump 2		Minlaton SW Reuse Catchment Dam	5	2023	\$3,529	15
24919	Transfer Pump 30kW	Maitland SW Reuse Pump Shed 1 Main Transfer Pump		Maitland SW Reuse Pump Shed 1	5	2023	\$10,871	15
Subtotal							\$20,007	
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
24941	100mm Gate Valve	Maitland SW Reuse Pump Shed 2 Gate Valves 100mm Cast Iron		Maitland SW Reuse Pump Shed 2	7	2025	\$2,553	20
24938	100mm Non-Return Valve	Maitland SW Reuse Pump Shed 2 Non-Return Valves 100mm Cast Iron		Maitland SW Reuse Pump Shed 2	7	2025	\$1,796	20
23824	1200mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00090) in Maitland Road	Maitland Road	Minlaton	7	2025	\$6,446	50
23731	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00037) in High Street	High Street	Ardrossan	7	2025	\$3,456	50

23831	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00076) in West Terrace	West Terrace	Minlaton	7	2025	\$5,144	50
23814	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00078) in First Street	First Street	Minlaton	7	2025	\$4,712	50
23820	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00079) in Fourth Street	Fourth Street	Minlaton	7	2025	\$3,956	50
23816	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00080) in Fourth Street	Fourth Street	Minlaton	7	2025	\$4,020	50
23819	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00081) in Fourth Street	Fourth Street	Minlaton	7	2025	\$3,912	50
23818	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00082) in Fourth Street	Fourth Street	Minlaton	7	2025	\$3,307	50
23823	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00088) in Main Street	Main Street	Minlaton	7	2025	\$3,977	50
Subtotal							\$43,280	
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
23730	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00045) in East Terrace	East Terrace	Ardrossan	8	2026	\$3,637	50
23809	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00085) in East Terrace	East Terrace	Minlaton	8	2026	\$2,704	50
23945	700mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00231) in Wauraltee Road	Wauraltee Road	Port Vincent	8	2026	\$2,648	50
23821	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00086) in Main Street	Main Street	Minlaton	8	2026	\$4,604	50
23822	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00087) in Main Street	Main Street	Minlaton	8	2026	\$4,107	50

23829	900mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00089) in West Terrace	West Terrace	Minlaton	8	2026	\$4,388	50
24918	Stock Pump 3.0kW	Maitland SW Reuse Pump Shed 1 Stock Pump		Maitland SW Reuse Pump Shed 1	8	2026	\$4,336	15
Subtotal							\$26,423	
Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
23827	1000mm Concrete Spoon Drain	Spoon Drain (Yorke-SW-SP00073) in Tilbrook Avenue	Tilbrook Avenue	Minlaton	9	2027	\$6,028	50
24985	Transfer Pump 5.5kW	Minlaton SW Reuse Storage Dam Main Transfer Pump 1		Minlaton SW Reuse Storage Dam	9	2027	\$5,486	15
24986	Transfer Pump 5.5kW	Minlaton SW Reuse Storage Dam Main Transfer Pump 2		Minlaton SW Reuse Storage Dam	9	2027	\$5,486	15
Subtotal							\$16,999	
Program Total							\$600,521	

Appendix C Abbreviations

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

Appendix D Glossary

Annual service cost (ASC)

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

Asset

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

Asset category

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

Asset class

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

Asset condition assessment

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

Asset hierarchy

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

Asset management (AM)

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

Asset renewal funding ratio

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

Average annual asset consumption (AAAC)*

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

Borrowings

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

Capital expenditure

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

Capital expenditure - expansion

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

Capital expenditure - new

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

Capital expenditure - renewal

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

Capital expenditure - upgrade

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

Capital funding

Funding to pay for capital expenditure.

Capital grants

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

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

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

Carrying amount

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

Class of assets

See asset class definition

Component

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

Core asset management

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

Cost of an asset

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

Critical assets

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

Current replacement cost (CRC)

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

Deferred maintenance

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

Depreciable amount

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

Depreciated replacement cost (DRC)

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

Depreciation / amortisation

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

Economic life

See useful life definition.

Expenditure

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

Expenses

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

Fair value

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

Financing gap

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

Heritage asset

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

Impairment Loss

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

Infrastructure assets

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

Investment property

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

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

Key performance indicator

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

Level of service

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

Life Cycle Cost *

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

Life Cycle Expenditure

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

Loans / borrowings

See borrowings.

Maintenance

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

- **Planned maintenance**

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

- **Reactive maintenance**

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

- **Specific maintenance**

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

- **Unplanned maintenance**

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

Maintenance expenditure *

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

Materiality

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

Modern equivalent asset

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

Net present value (NPV)

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

Non-revenue generating investments

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

Operations

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

Operating expenditure

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

Operating expense

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

Operating expenses

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

Operations, maintenance and renewal financing ratio

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

Operations, maintenance and renewal gap

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

Pavement management system (PMS)

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

PMS Score

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

Rate of annual asset consumption *

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

Rate of annual asset renewal *

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

Rate of annual asset upgrade/new *

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

Recoverable amount

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

Recurrent expenditure

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

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

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

Renewal

See capital renewal expenditure definition above.

Residual value

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

Revenue generating investments

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

Risk management

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

Section or segment

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

Service potential

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

Service potential remaining

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

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *

Specific Maintenance

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

Strategic Longer-Term Plan

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

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

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

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

Value in Use

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