City of
Mount Gambier

Caroline
Asset Management Plan
2022-2031

February 2021

Document Control	

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Rev No	Date	Revision Details	Author	Reviewer	Approver
1	February 2019	Creation of separate asset management plan for Caroline Landfill	KR	DM	NS
2	January 2021	Updated in preparation for FY2022 budget process	CM	JZ	

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1 INTRODUCTION

1.1 Background

Caroline Landfill Infrastructure and Asset Management Plan is to be read in conjunction with Council's Asset management Policy, Asset management Strategy and the following associated planning documents:

- Community Plan
- Long Term Financial Plan (LTFP)
- Annual Business Plan and Budget (ABP&B)
- Landfill Environmental Management Plan
- Cell Layout and construction plans

The Landfill components covered by this Infrastructure and Asset Management (AM) Plan are shown in Table 1.

Table 1 : Landfill assets covered by this Plan at 30 June 2020

Asset Category	Number	Net Fair Value ($) $'000
Caroline Landfill Existing (incorporates future restoration of cells 1 and 2)	2	$1.000M
Caroline Landfill Cell 3 including capping and future restoration	1	$1.705M
TOTAL		**$1.805M**
Remaining Caroline Landfill Cells yet to be constructed, filled and capped (refer Attachment 1)	13	

1.2 Assumptions

This Landfill AM Plan is based on current service levels.

It is assumed that the current financing approach will continue.

Key stakeholders in the preparation and implementation of this Infrastructure and Asset Management Plan are shown in Table 2.

Key Stakeholder	Role in AM Plan
Councillors	• Represent needs of the community and stakeholders • Set targeted sustainability ratios
Executives	• Adopt Infrastructure and Asset Management Plan • Annual budget approvals • Portfolio sponsor

Customers	• End users of service/assets
Insurers and Lessors	• Partner with Council to mutually cover risk exposure • Partner with Council to provide alternate financial solutions
Engineering Business Unit	• Plan and facilitate asset construction and capping in accordance with this plan • Establish service levels • Mitigate risk exposure • Monitor assets (including condition) • Coordinate planned and reactive maintenance with Council staff • Management of operational requirements • Ensure compliance with legislative requirements
Strategic Finance & Accountability Business Unit Finance Business Unit	• Council's LTFP • Asset valuation and depreciation • Procurement facilitation

1.3 Goals and Objectives of Asset Management

The Council exists to provide services to its community; one of these services is Waste Management. Caroline Landfill is the only engineered landfill site located in the South East of South Australia and began operations in 1997. Council's goal in managing building and structure assets is to meet the agreed level of service in the most cost-effective manner for present and future consumers. The key elements of landfill asset management are:

- Taking a life cycle approach to developing cost-effective management strategies for the long term
- Providing a defined level of service and monitoring performance in line with stakeholder needs
- Managing risks associated with asset failures and disasters
- Continuous improvement in asset management practices.[1]

A 'bottom up' approach has been used to develop organisational requirements for sustainable service delivery and long term financial planning and reporting. This is mainly due to the key drivers that influence when and how construction and capping of landfill cells is required. The key drivers are:

- The amount (in tonnes) of waste to be entombed

- The strict legislative requirements surrounding waste management practices and landfill operations.

[1] IIMM 2006 Sec 1.1.3, p 1.3

This plan is prepared to facilitate community consultation and in line with section 122(6) and 122(7) of the Local Government Act the draft plan is made available to the public at our principal office for feedback prior to adoption by Council.

Future revisions may include greater community consultation on service levels and costs of provision to assist Council and the community in balancing the level of service needed and/or desired with the community's ability and willingness to pay for the service(s) incorporating a wider view of all waste management services.

1.4 Plan Framework

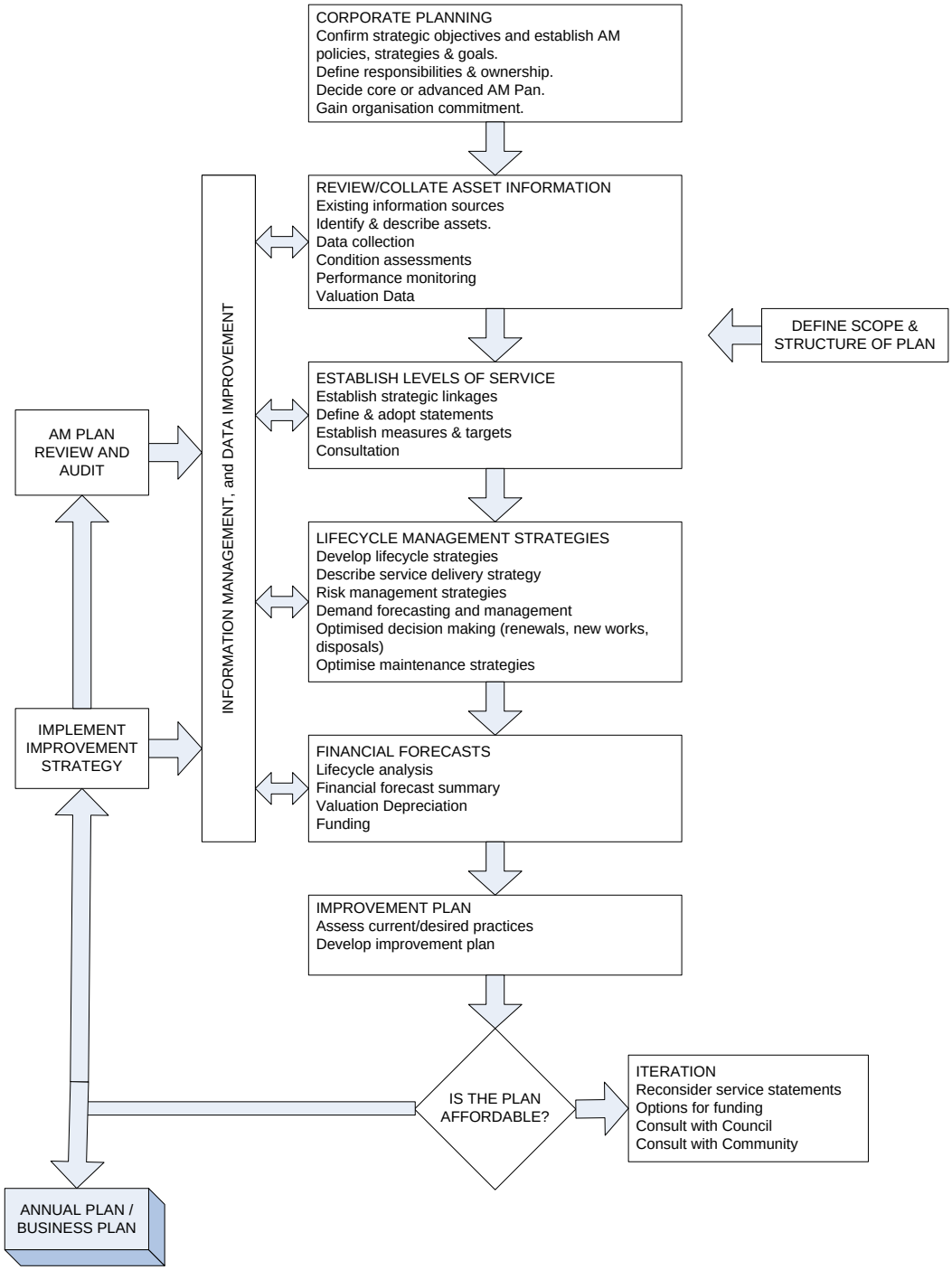
Key elements of the Plan are

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

A road map for preparing an Infrastructure and Asset Management Plan is shown below.

Figure 1: Road Map for preparing an Infrastructure and Asset Management Plan

Source: IIMM Fig 1.5.1, p1.11



2.1 Legislative Requirements

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

Table 3: Legislative Requirements

Legislation	Requirement
Local Government Act, 1999	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long-term financial plan supported by Infrastructure and Asset Management Plans for sustainable service delivery.
Development Act and subordinate legislation (example Development Plan and Building Code)	Provides Council with the legislative framework to guide the preservation and enhancement of its landfill.
Environment Protection Act	To guide the development and operation of Caroline Landfill
State Records Act, 1997	Set out responsibilities and requirement in relation to the management of Council records.
Work Health and Safety Act, 2012	Sets out roles and responsibilities to secure the health, safety and welfare of persons at work

2.2 Current Levels of Service

Council has defined service levels in two terms:

1. Community Service Levels

   These relate to how the community receives the service in terms of safety, quality, function, quantity, reliability, responsiveness and cost/efficiency.

2. Operational or Technical Service Levels

   These measures relate to the allocation of resources to service activities that the Council undertakes to best achieve the desired community outcomes, whilst meeting all legislative requirements.

Community Levels of Service relate to how the community receives the service in terms of safety, quality, function, quantity, reliability, responsiveness, cost/efficiency and legislative compliance.

Supporting the community service levels are operational or technical measures of performance developed to ensure that the minimum community levels of service are met. These technical measures relate to service criteria such as:

Operations - the regular activities to provide services such as opening hours, compacting and covering of waste.

Maintenance - the activities necessary to retain assets as near as practicable to their original condition for example repairing weather damage.

Renewal - the activities that return the service capacity of an asset up to that which it had originally, for example, frequency and cost of new landfill cell construction.

Upgrade - upgrading the activities to provide a higher level of service for example, extending opening hours, introducing a new initiative such as gas collection and utilisation facilities, installing a weighbridge at the landfill site.

Quantity - ability to accept varying volumes of waste.

Safety - protection of person(s) from injury and accidents, for example, safe work method statements.

Council's current service levels are detailed in Table 4.

Table 4: Current Service Levels

Key Performance Measure	Level of Service	Performance Measure Process	Performance Target
COMMUNITY LEVELS OF SERVICE			
Quality	Landfill is tidy and accessible	customer complaints	1 complaint per year
Function	Tip face is compacted and covered with appropriate cover material each day it is operational	Manager to review	100%
Safety	Public and customer access is clearly monitored and signed	Reported accidents and incidents	zero
TECHNICAL LEVELS OF SERVICE			
Condition	1) Site is managed to legislative requirements/ best practice standards 2) Machinery is reliable and well maintained	1) EPA Reports and responses, customer complaints 2) Machine availability	1) Zero 2) 100% of scheduled time
Safety	Site is safe and meets all legislative requirements	reported accidents/ incidents	Zero
Cost Effectiveness	Landfill is operated within budget	$/% amount over/underspent of the budget	Expense within 5% of budget and does not exceed income generated

3 FUTURE DEMAND

3.1 Demand Forecast

Drivers affecting demand include population change, changes in demographics, seasonal factors, consumer preferences and expectations, technological advances, economic factors, environmental awareness, changing legislative requirements, risk management practices, etc.

Demand factor trends and impacts on service delivery are summarised in Table 5.

Table 5 : Demand Factors, Projections and Impact on Services

Demand factor	Present position	Projection	Impact on services
Population	26,276 *(census 2016))*	1% growth 32,000 people by 2027 (aspiration target noted in feasibility study)	Should the aspirational target projection be met filling rates at the landfill would increase. It is expected that these would be offset by increased rates and user pays revenue.
Demographics	Ageing population Already servicing wider District Council of Grant area	2 to 3% growth	Demographic factors unlikely to have significant impact on waste management facilities as Council is already servicing a much wider region.
Climate change	susceptible to el nino conditions periods of intense rainfall can have adverse effects on leachate contamination at the landfill site	Once in every 10 years	Large impact on budget to manage contamination in line with EPA requirements
Legislative changes	Landfill Environmental Management Plan (LEMP) Meeting all EPA requirements	Continuation of LEMP and meeting all EPA requirements	No significant impacts to services

3.2 Changes in Technology

Technology changes are forecast to have little effect on the delivery of services covered by this Plan, but will likely improve monitoring, customer feedback and advice to Council.

Technology changes forecast to affect the delivery of services covered by this plan are detailed in Table 6.

Table 6 : Forecast changes in technology and effect on service delivery

Technology Change	Effect on Service Delivery
Introduction of weighbridge of landfill site	At present customers weigh in at the Waste Transfer Centre before driving to Caroline Landfill to deposit their load of waste. This requires the site operator to check all tickets before allowing the load to be unloaded. A weighbridge onsite has potential to: • automate gate opening and security over site • mobile technology to automatically deliver results to landfill operator and officers located offsite to the Landfill • provide more accurate data • provide increased control • reduces risk of customers collecting rubbish after they have weighed in at the Waste Transfer Station
CCTV Cameras	Council are in the process of implementing CCTV systems and this may be able to be utilised in asset management, assessment and surveillance to assist in reduction of damage to infrastructure and machinery.
Gas Utilisation and Collection	Council is currently seeking tenders for the provision of landfill gas management services utilising automated technology to monitor and provide data.

3.3 Demand Management Plan

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

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets, such as leasing arrangements or providing services from existing infrastructure which may be located in another community area. They also include managing expectations in relation to service standards and service failures.

4 LIFECYCLE MANAGEMENT PLAN

The Lifecycle Management Plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in the section “Levels of Service”) while optimising life cycle costs.

4.1 Background Data

4.1.1 Physical Parameters

The assets covered by this plan are shown in Table 1.

4.1.2 Asset Capacity and Performance

Council’s services are generally provided to meet design and environmental standards where these are available. Areas targeted for improvement are detailed in Table 8.

Table 8 : Areas targeted for improvement

Service	Improvement
Cover Material	Identification of alternative cover materials from stockpiles of concrete, brick and limestone to meet EPA requirements. Aim to reduce stockpiles and utilise as cover due to the diminishing levels of cover material available.
Litter	Reduction of windblown litter and digestion from nearby livestock.
Critical machinery	Alternative solutions should the landfill compactor be out of action Consideration of insurance to cover loss of production.
Leachate Ponds	Alternative solutions to vetiver grasses include covering leachate ponds to reduce increase in volume due to rainfall. Consideration of alternate options should the vetiver grass trial not be successful.

4.1.3 Asset Condition

The condition profile of Council’s Landfill Cell’s is not a key driver for renewal. The capacity used in the cell is a key driver as this relates to the amount of airspace remaining for waste to be entombed.

The buildings and structures, plant and machinery currently used at Caroline Landfill are captured under their own category of asset management plans. Asset condition is a key driver for the buildings located at the landfill site but is not a key driver for renewal of the critical plant and machinery required used to operate the site.

4.1.4 Asset Valuations

The value of Caroline Landfill assets in this IAMP related to cell construction and capping only. Landfill remediation and cell development assets are amortised on a consumption basis over the individual landfill cell's capacity to receive waste. At the time of construction of a cell, Council includes the present value of estimated costs to cap and close the cell into the landfill cell. This estimate is offset by the recognition of a provision. This recognition of the capping costs is amortised in line with the consumption of the landfill cell's capacity used in any one year. Unwinding of present values are completed annually to bring values into alignment with present day.

As at 30 June 2020 the value of these assets was:

Total value (at cost & fair value)	$9.931M
Accumulated depreciation	$8.125M
Carrying amount	$1.806M
Annual depreciation expense	$0.721M

4.2 Routine Maintenance Plan

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

4.2.1 Maintenance Plan

Maintenance includes reactive, planned and cyclic 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.

Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle and may include painting, re-roofing, replace occasional window etc.

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

4.2.2 Standards and Specifications

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

- Current Australian and Industry Standards
- Environmental Guidelines
- Work Health Safety Act and Regulations
- Council Standards and Specifications

4.3 Renewal / Replacement Plan

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

4.3.1 Renewal Plan

Assets requiring renewal are identified from one of three methods:

Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful to determine the renewal year

Method 2 uses capital renewal expenditure projections from external condition/usage modelling systems

Method 3 uses a combination of average network renewals plus defect repairs.

Method 2 was used for this Plan using in-house engineering construction plans and modelling.

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

4.3.2 Renewal Standards

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

- Current Australian and Industry Standards
- Environmental Guidelines
- Work Health Safety Act and Regulations
- Best Industry Practice Standards
- Planning and scheduling renewal projects to meet defined service levels in the most efficient and effective manner.

4.3.3 Summary of Future Renewal Expenditure

Projected future renewal expenditures are forecast to increase over time as the cost of contractors, materials and employees increases. The costs are summarised in Figure 1.

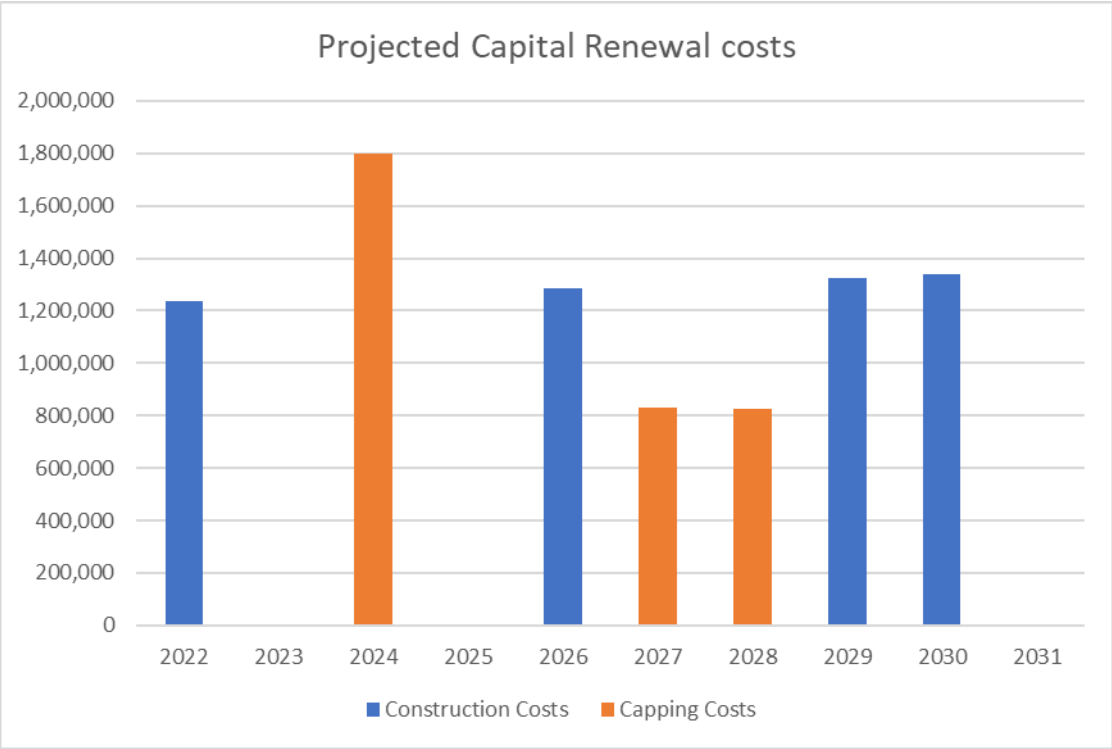


Figure 1 : Projected Capital Renewal costs

Renewals are to be funded from Council's capital works program and grants where available.

FINANCIAL SUMMARY

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

4.4 Financial Statements and Projections

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

4.4.1 Sustainability of Service Delivery

There are two key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs and medium-term costs over the 10 year financial planning period.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include maintenance and asset consumption (depreciation expense). The landfill annual life cycle cost for the services covered in Part 2 of this Infrastructure and Asset Management Plan is $750

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure at the start of the plan (2020) is $864

A gap between life cycle costs and life cycle expenditure gives an indication as to whether present consumers are paying their share of the assets they are consuming each year. The purpose of this Infrastructure and Asset Management Plan is to identify levels of service that the community needs and can afford and develop the necessary long term financial plans to provide the service in a sustainable manner.

Medium term - 10 Year Financial Planning Period

This AMP identifies the estimated maintenance and capital expenditures required to provide an agreed level of service to the community over a 20 year period for input into a 10 year financial plan and funding plan to provide the service in a sustainable manner.

This may be compared to existing or planned expenditures in the 20 year period to identify any gap. In a core AMP, a gap is generally due to increasing asset renewals or underfunding of capital renewal programs.

4.5 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets. The funding strategy is detailed in the Council's Long Term Financial Plan.

4.6 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council. Depreciation expense values are forecast in line with estimated capacity of use.

The depreciated replacement cost (current replacement cost less accumulated depreciation) will vary over the forecast period depending on the consumption and renewal of existing assets. However,

4.7 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this Infrastructure and Asset Management Plan and in preparing forecasts of required operating and capital expenditure and asset values. 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 Infrastructure and Asset Management Plan are:

- Units of Production method of depreciation which results in a charge based on the expected use or output of the asset. In the case of the Caroline Landfill, it refers to the expected use of airspace.
- The construction of a new cell is considered renewal expenditure as Council is renewing its capacity to receive waste and operate.
- Dollars are in real terms and no indexation has been applied.
- This Infrastructure and Asset Management Plan was put together based on the information at hand at the time of preparing the Plan. As asset information is updated and more accurate information becomes available, the Infrastructure and Asset Management Plan will become more accurate.

Accuracy of future financial forecasts may be improved in future revisions of this Infrastructure and Asset Management Plan by the following actions:

- Full cost attribution on future works programs through more sophisticated accounting measures.
- Improved data collection and assessment of assets and recording of this data in AIM program through centralised asset management and data analysis.

4.8 Improvement and Monitoring

4.8.1 Accounting and financial systems

Council uses Civica Authority as its accounting and financial system. This system integrates with Council's asset management system another module of the Civica Authority suite.

The Australian Accounting Standards provide the benchmark against which Council reports on asset accounting. Council's current capitalisation threshold is $5,000.

The link between asset management and the financial system includes:

- The assumed works programs and trends
- The resulting budget, valuation and depreciation projections
- Useful life analysis (including renewal projections)
- Inputs to Council's LTFP and ABP&B

5 REFERENCES

City of Mount Gambier Community Plan – The Futures Paper 2016-2020

City of Mount Gambier Annual Report and Budget

DVC, 2006, 'Asset Investment Guidelines', 'Glossary', Department for Victorian Communities, Local Government Victoria, Melbourne

IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au

6 Appendices

6.1 Caroline Asset Management Plan

Caroline Asset Management Plan - 2022-2031										
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Renewal	2,009,087	0	0	0	2,090,664	0	0	2,154,013	2,187,152	0