ASSET MANAGEMENT PLAN

Warrnambool City Council
Waste Management

Document Control	AMP				
Document ID :					
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
1.0	June 2021	Draft plan using IPWEA template and new quantities and values using asset register	M. Mousavi	J. Finnerty	EMT
1.1	Jan 2022	Edits made from EMT	M. Mousavi	B. McDonald	

This AMP may be used as a supporting document to inform an overarching Strategic AMP.

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AMP) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 15 year planning period. The AMP will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that are used in waste management.

This plan comprises:

- Closed Landfill Site (Warrnambool City Council does not have any operating landfill)
    - Monitoring equipment
- Kerbside collection bins:
    - Recycling
    - Rubbish
    - FOGO
    - Glass

The above kerbside collection bins have total renewal value estimated at $3,942,000.

Other assets used to manage waste that are not included in this plan:

- Kerbside collection trucks (leased and costs built into service contract)
- Council's public place collection truck (Fleet AMP)
- Public place bins (Open space AMP)
- Sheds (Buildings AMP)
- Property fences (Open Space AMP)

Only costs directly related to the management of these assets are included in this plan. Operational costs related to the delivery of the waste management *service*, ie kerbside bin collection, sorting/processing costs and landfill fees are not included in this Plan.

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels over the term of this Plan.

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population growth;
- Land development;
- Changing community expectations;
- Changing regulatory requirements and government policy;
- Identification of ongoing operational and maintenance costs to be aware of where these assets are in their life cycle.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AMP includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AMP may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AMP is the forecast of 15 year total outlays, which for Waste Management is estimated as $6.9M, or $430k on average per year.

1.6 Financial Summary

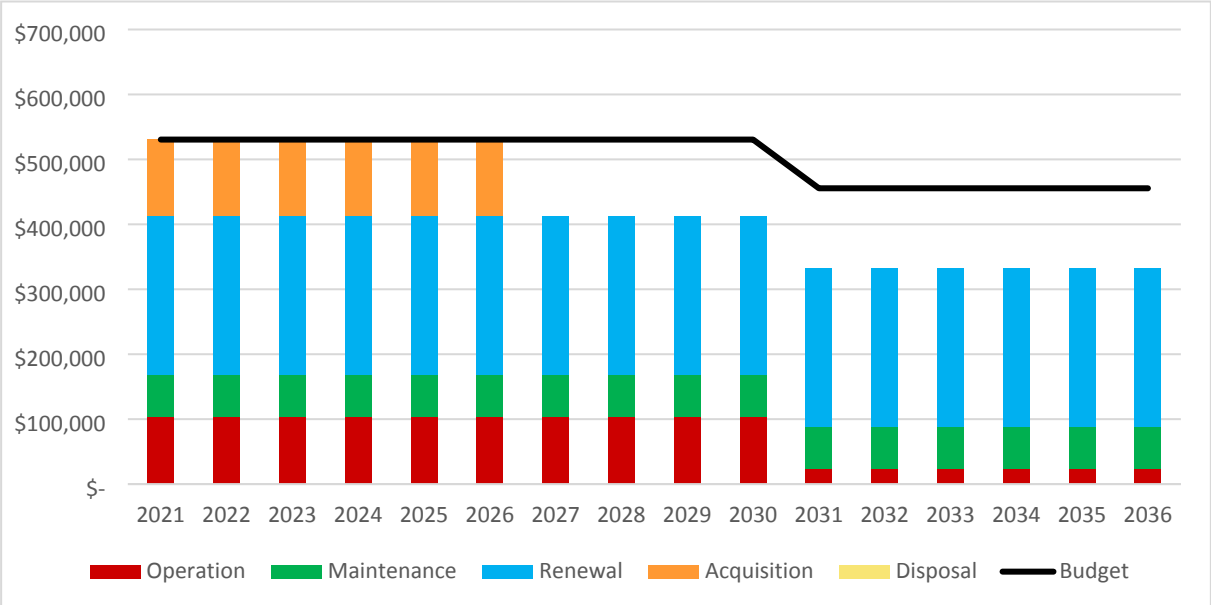
1.6.1 What we will do

Estimated available funding for the 15 year period is $8M or $502K on average per year as per the Long-Term Financial Plan. The cost to sustain the current level of service is fully funded over the planning period. Its recommended to look at the finer level of detail to understand how costs are apportioned.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. Informed decision making depends on the AMP emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Waste leaves no shortfall of the forecast lifecycle costs required to provide services in the AMP compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets



All figure values are in current dollars.

We plan to provide waste management services for the following:

- Operation, maintenance, renewal and acquisition of kerbside collection bins and operation and maintenance of closed landfill site to meet service levels set in annual budgets.

1.6.2 What we cannot do

We currently allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought in the long term. The reduction in 2031 is due to the end of the requirement to maintain the closed of landfill site (Braithwaite St).

1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the long term.

The main risk consequences are:

- Increased asset maintenance and replacement costs due to climate change impacts
- Environmental contamination if monitoring of closed landfill site ceases

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

- Continuing regular inspection and monitoring of closed landfill to comply with EPA requirements

1.7 Asset Management Planning Practices

Our systems to manage assets include:

- Finance System: TechnologyOne
- Asset Management System: Conquest

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs this is done using the acquisition year and the useful life;
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

The Asset Register was used to forecast the renewal life cycle costs for this AMP.

1.8 Monitoring and Improvement Program

The next steps resulting from this AMP to improve asset management practices are:

- Determine the final costs to fully remediate and remove monitoring infrastructure from the closed landfill site
- Further investigate opportunities for climate change resilience
- Ensure register of kerbside collection bins is complete and maintained

2.0 Introduction

2.1 Background

Council provides domestic kerbside collection and disposal / processing services for Warrnambool, Allansford, Woodford, Bushfield, Yangery, Illowa and Dennington, for nearly 16,000 customers. The collection transport, disposal and processing operations are undertaken by contractors. Council also manages the licensed closed landfill site at Braithwaite St, Warrnambool. This site also contains a number of structures and other components including landfill cap, fencing, sheds, groundwater and leachate bores, landfill gas bores and vents, biofilters, leachate sump and solar leachate pumps, leachate irrigation areas, remote sump depth sensor. The environmental monitoring at the closed landfill site is undertaken by contractors.

This AMP communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AMP is to be read with the Warrnambool City Council planning documents. This should include the Asset Management Policy and Asset Management Strategy, along with other key planning documents:

- Council Plan 2021-2025
- Growth Area Structure and Development Plans
- Warrnambool 2040
- Green Warrnambool 2018
- Resource Recovery and Waste Minimisation Strategy 2017-2021

Council has over $830 million across all asset classes under its management. These assets are predominately used to provide services and amenity to the Warrnambool community and visitors. The standard to which these assets are maintained, and the extent of expansion and improvement, are key considerations in setting and delivering our Council Plan.

The assets covered by this AMP include the closed landfill site and kerbside collection bins in the Warrnambool City Council area. Table 2.1.1 shows a detailed summary of the assets covered in this AMP. These assets are used in waste management services.

The infrastructure assets included in this plan have a total replacement value of $3,942,000.

Table 2.1.1: Assets covered by this plan

Functional Type	Asset Components
Landfill	Landfill cap
	Groundwater and leachate bores
	Leachate irrigation area
	Bio filters
	Leachate sump and solar leachate pumps
	Remote sump depth sensor
Kerbside collection bins	Recycling

Functional Type	Asset Components
	Rubbish
	FOGO
	Glass

Assets not included in this plan:

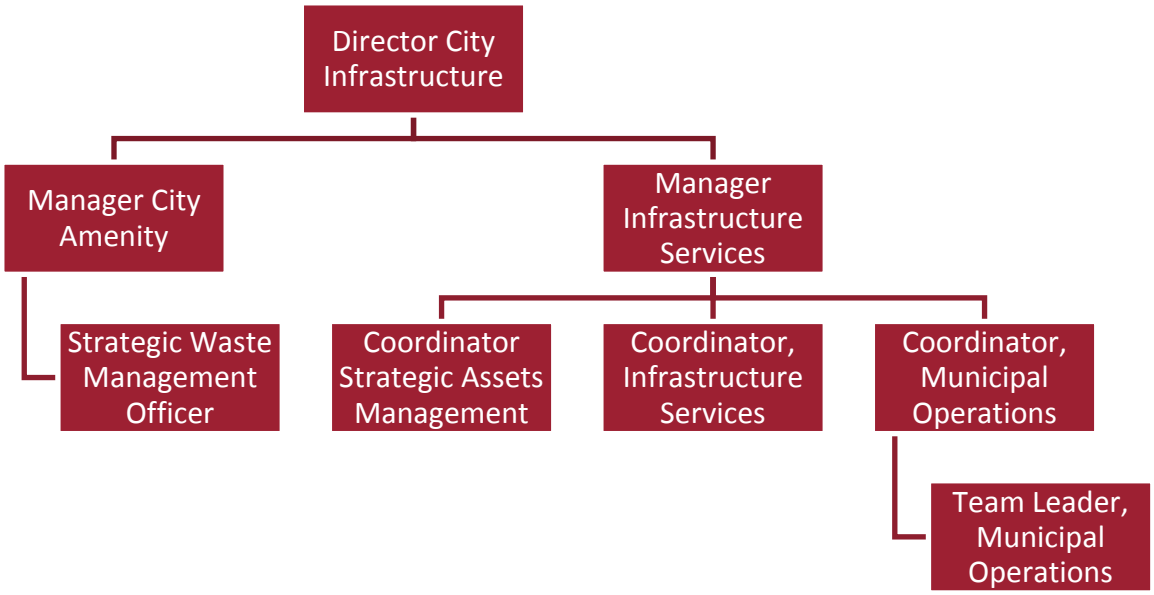
- Kerbside collection trucks (outsourced)
- Council's public place collection truck (Fleet AMP)
- Public place bins (Open space AMP)
- Sheds (Buildings AMP)
- Fences (Open Space AMP)

Key stakeholders in the preparation and implementation of this AMP are shown in Table 2.1.2.

Table 2.1.2: Key Stakeholders in the AMP

Key Stakeholder	Role in AMP
Strategic Waste Management Officer	Demand management, asset register, management of closed landfill site (Braithwaite St)
Strategic Asset Management	Development of the waste management AMP
Manager Financial Services	Development of long term financial plan informed by AMP
Executive Management Team	Corporate review, resourcing and ensuring implementation of the Waste Management AMP.
Councillors	Adoption of the Waste Management AMP and associated levels of service. Approval of annual budgets
Coordinator Municipal Operations	Internal service delivery for public place bin collection
The general community	Inform desired level of service. Service level recipients.
Contractors and suppliers	Interested party regarding supply of goods and resources to provide services
Council's Insurer	Interested party to ensure auditing, maintenance and reporting are undertaken

Our organisational structure for service delivery from infrastructure assets is detailed below,



2.2 Goals and Objectives of Asset Ownership

Our goal for 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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Risk Management,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to 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 – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 6th Edition (2020)
- ISO 55000 Overview, principles and terminology

The process for developing an AMP:

(IIMM 2020 figure 3.6.2.1)

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This AMP is prepared to facilitate consultation prior to adoption of levels of service by the Warrnambool City Council. Future revisions of the AMP will incorporate customer consultation on service levels and costs of providing the service. This will assist the Warrnambool City Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

Table 3.1 summarises the results from our Customer Satisfaction Survey.

Table 3.1: Customer Satisfaction Survey 2020

	Importance Level						Performance					
	2015	2016	2017	2018	2019	2020	2015	2016	2017	2018	2019	2020
Warrnambool City Council	78	77	77	80	81	**79**	74	70	70	67	68	**66**
Regional Average	80	79	79	81	80	**82**	71	69	69	70	68	**66**
State Average	79	80	79	81	81	**82**	72	70	71	70	68	**65**

The 2020 Community Consultation survey identified that among the more influential service areas (high importance score), waste management had a relatively high performance index (66) and one of the few service areas which didn't see a significant decline in performance. Improving this positive result should remain a focus of Council.

Although Council performs in line with the Regional Centres group and State-wide averages in this service area, there is a disparity between perceived importance and performance (-13 points), which suggests there is room for improving the delivery of this service.

3.2 Strategic and Corporate Goals

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

Council's vision is:

A thriving city at the heart of coast and country

Council's goals are:

- Warrnambool will be a city where all people thrive
- Warrnambool will be Australia's most resilient and thriving regional economy
- Warrnambool will be Australia's most liveable regional city
- Warrnambool will be Australia's most sustainable city

Strategic goals have been set in Warrnambool City Council Plan. The relevant goals and objectives and how these are addressed in this AMP are summarised in Table 3.2.

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

Goal	Objective	How Goal and Objectives are addressed in the AMP
A sustainable environment	Council will encourage innovation and initiatives that minimise Warrnambool's environmental impact	Improving management of waste streams including food organics, garden organics (FOGO) and glass collection across the whole municipality to reduce reliance on landfill
	Council will pursue programs to minimise waste throughout the community, industry and promote the benefits of reduction, reuse and recycling of materials.	This Plan outlines the community expectations and costs to provide various service levels (ie, waste streams)
An effective Council	Council will ensure ongoing community engagement to identify changing needs and priorities when developing and delivering services and programs	The AMP is reviewed annually and updated with any changes in investment or service level decisions made.
	Council will continue to develop a program of Council services that are delivered to the community's satisfaction	This AMP results from other strategic planning which undergoes thorough community consultation.
	Council will ensure organisational and financial sustainability through the effective and efficient use of Councils resources and assets.	Identify and regularly monitor condition of asset classes Review and update the Long Term Financial Plan to ensure Council remains financially sustainable into the future

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the waste management service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Description
Local Government Act 2020	Sets out the role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by infrastructure and AMPs for sustainable service delivery.
Environment Protection Act 1970	Relates to the discharge, emissions, or deposits especially within drainage systems and at the point of discharge to water ways.

Environment Protection (Industrial Waste Resource) Regulations 2009	Prescribes requirements for assessing, categorising and classifying industrial waste and prescribed industrial waste for the purposes of the Environment Protection Act 1970.
Recycling Victoria Policy 2020	Represents the Victorian government's action plan of reform to establish a recycling system that Victorians can rely on. It transforms how the economy uses materials and how the state reuses, repairs and recycles- setting up a more sustainable future for the state.
Sustainability Victoria Act 2005	Promotes throughout Victoria waste avoidance, waste reduction and recovery, re-use, recycling of resources and best practices in waste management.
Waste Authority Act	Oversees the performance of the waste and recycling sector. Also ensures that waste and recycling services are reliable and meet community expectations, and contribute to Victoria's waste and recycling goals.
Waste Management Policy (E-Waste)	Ensures the appropriate management of e-waste in Victoria, to complement the diversion of e-waste from landfill as set out in the Waste Management Policy (Siting, Design and Management of Landfills) No. S264 2004), to eliminate or reduce, so far as reasonably practicable, the risk to the environment and human health from e-waste, to maximise the recovery of materials from e-waste and to ensure records are kept and made available to assess compliance with this policy.
Closed Landfill Guidelines 2018	Ensures that the environmental risks posed by closed landfill sites are appropriately quantified and managed by issuing owners of closed landfill sites with pollution abatement notices that require the gathering of necessary information and data, the development of rehabilitation plans and aftercare management and monitoring programs.
PCPAN for Braithwaite St Closed Landfill	Issued by EPA for rehabilitation and aftercare management of the site to prevent or remedy actual or likely pollution, environmental hazards and a range of non- compliances with the EP Act.
Barwon South West Waste and Resource Recovery Group Regional Implementation Plan 2017 –	Plans for future waste and resource recovery infrastructure and service needs for the region. How much waste and what type of material are currently managed, which material go to landfill and what waste and recycling infrastructure will be needed in the future?

3.4 Customer Values

Service levels are defined in three ways: customer values, customer levels of service and technical levels of service.

Customer Values indicate:

- what aspects of the service is important to the customer,
- whether they see value in what is currently provided and,
- the likely trend over time based on the current budget provision.

Table 3.4: Customer Values

Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Access to waste services for domestic properties	Provision of kerbside collection bins	All residential properties have the bins	No change
Zero recoverable waste to landfill.	Diversion from landfill	64% of recoverable waste include glass, FOGO and recycling is being diverted from landfill	Increase in diversion from landfill to 80-90% due to recycling system available and increased use of the FOGO system.
No littering or pollution to our environment	Provision (Quantity) of bins in open spaces	Bins are provided in all requested areas	Very low number of requests for new public place bins
Regular kerbside collection	Frequency of collection of FOGO, rubbish, recycling and glass	Fortnightly collection	No change
Sustain, enhance and protect the natural environment	Compliance to closed landfill site (Braithwaite St) PAN	Compliant	Compliant
Warrnambool has developed a framework for a closed loop economy	Diversion of recyclable products from landfill	Glass collection implemented	All glass is diverted from landfill
Responsiveness to customer requests	Requests and complaints are responded to timely	20/21 responses provided within Customer Charter timeframe 60% of the time	No change

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition How good the service is … what is the quality of the service?

Function Is it suitable for its intended purpose? Is it the right service?

Capacity/Use Is the service over or under used? Do we need more or less of these assets?

The current and expected customer service levels are detailed in Tables 3.4 and 3.5.

Table 3.5: Customer Level of Service Measures

Type of Measure	Service Demands	Level of Service	Performance Measure	Current Performance	Target Performance
Condition	Amenity of kerbside collection bins	Kerbside bins are not unsightly or terribly damaged	Bins replaced at the end of their useful life and when damaged	Bins replaced every 15 years	Bins replaced every 15 years
	Confidence levels			High	Medium
Function	Environmental Standards	Closed Landfill is monitored and managed appropriately to reduce risks to the environment	Contamination levels of groundwater leachate and gas extraction	All gas and groundwater levels within EPA tolerance	Compliance with EPA guidelines
	Confidence levels			High	High
Capacity	Bin sizes or collection frequencies meet users requirements	Bin sizes and collection frequencies meet users requirements	Size of bins provided Frequency of bin collections	240L FOGO & recycling 140L rubbish 80L glass Fortnightly collection	Existing bin capacities Fortnightly collection
	Confidence levels			High	High

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleaning, mowing grass, energy, inspections, etc.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

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

Table 3.6 shows the activities expected to be provided under the current 15 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AMP.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
Acquisition	Providing bins to new properties	Number of bins provided over life of contract	Covered by contract (operational cost)	Per the contract life-(2019-2026)
	Providing a new collection stream	Number of new streams implemented	Glass collection	Glass collection (legislated)
		Budget	$118k annually	$118k annually
Operation	EPA Requirement	Compliance to PAN	Compliant	Compliant
	Customer request responses	Compliance to customer charter timeframes	60% compliance with customer charter	100% compliance with customer charter
		Budget	$86k annually	$103k annually
Maintenance	Bin Repair & Replacement	Customer request	Not measured	Not measured
		Budget	$83k annually	$66k annually
Renewal	Replacement of kerbside collection bins	Renewal of collection bins: rubbish and recycling	Rollout completed June 2021	Rollout completed June 2021
		Renewal of collection bins: FOGO & glass	Not yet required	Not yet required
		Budget	$244k	$244k
Disposal	Closed Landfill Site Restoration	Budget Allocation	None	To be determined
		Budget	$0	$0

Note: * Current activities related to Planned Budget.
** Forecast required performance related to forecast lifecycle costs.

Improvement Action 1: Determine the future use of the closed landfill site, and potential remediation costs to remove monitoring infrastructure

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time. Review and establishment of the agreed position which achieves the best balance between service, risk and cost is essential.

4.0 FUTURE DEMAND

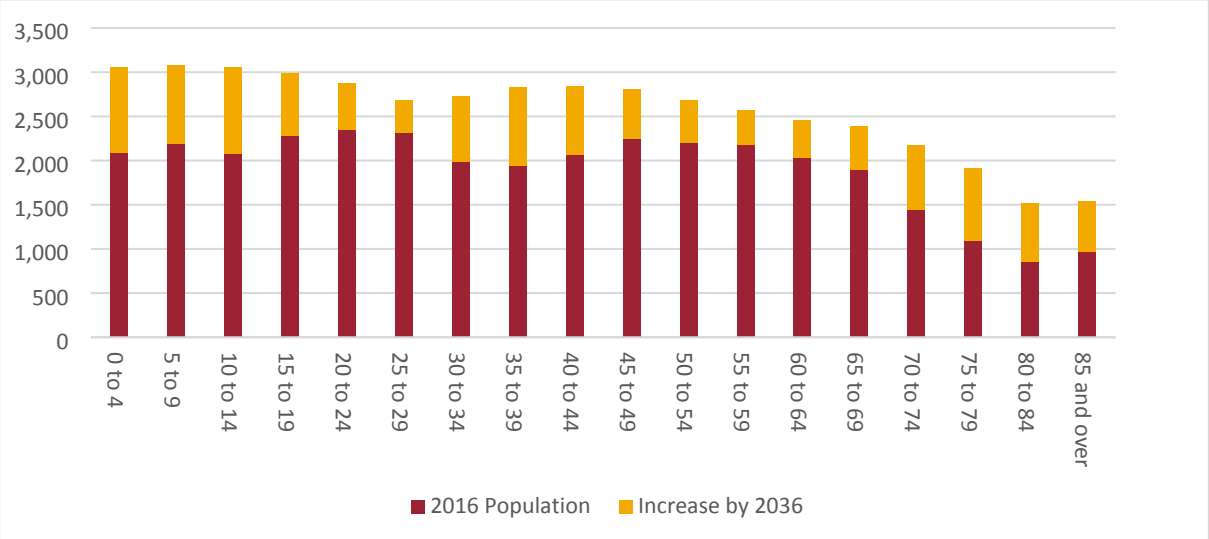
4.1 Demand Drivers

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

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

Figure 4.2: Population Growth between 2016 and 2036



4.3 Demand Impact and Demand Management Plan

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

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 can include non-asset solutions, insuring against risks and managing failures.

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

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Land Use	Dwelling density increasing	The Warrnambool City-Wide Housing Strategy recommends that housing densities should be expected to increase in many parts of Warrnambool.	Areas of increased housing density increase the demand of collection bins and also operation costs	Ensure all developments provided with collection bins and operated as per collecting schedule. As handover of assets occurs, this AMP, alongside Council's asset management system and processes becomes the primary means of management.

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population growth	Warrnambool's population is growing annually by 1%	This growth trend is likely to continue into the future	This will require a greater number of bins, and management of collection services	To be monitored
Changes to Community Expectations	The community want to see a greater diversion of recoverable waste from landfill with a goal Zero recoverable waste to landfill.	The aspirational target of 0% recoverable waste to landfill is likely to remain	This may require additional waste collection streams, additional auditing and oversight, and management of contamination	To be monitored
Technology	Technology Improvement and Utilisation	Increases in available technology in recycling and using reusable waste in construction industry	Using recycled glass as a replacement for quarried materials in construction activities like road construction and general paving works.	Continue to monitor developments in this space such that Council may adopt available new and improved technology in a timely manner with the vision of improving this operating environment
Climate change	The extreme climate change causes flooding, damages infrastructure and increases global emissions.	Greenhouse gasses from waste are a key contributor to climate change and global emissions generated from solid waste management is increasing.	Moving toward sustainable waste management that requires lasting efforts and a significant cost	Continue to improve waste management practices including operating FOGO, collecting glass and achieving a reasonable percentage of recycling and reuse rate that leads to a sustainable and healthy city and community.

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit Warrnambool City Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the asset management planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts. As a minimum, we consider how to manage our existing assets given potential climate change impacts for our region.

Opportunities identified to date for management of climate change impacts on existing assets are shown in Table 4.5.1

Table 4.5.1 Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Increased Rainfall	More severe storms	The increased frequency of heavy rain directly affects leaching behaviours of constituents in landfill, causing more fluctuation in leachate concentrations and level.	Continue to control the landfill to comply with the requirements in the PCPAN. Appropriate actions may need to be taken to account for these effects in aftercare leachate monitoring program to prevent or remedy an actual or likely non-compliance
Flooding	As above		
Severe winds	Stronger winds and more severe storm events	Bins blown over are currently managed by contractors, these may become variations resulting in additional costs if they become prevalent.	Bin clips as a resistance to opening and dispersion.
Temperature	Increasing average temperatures and greater extremes	Leads to significantly more landfill gas, an increase in odours and leachate volumes	Controlling all sources of offensive odours, managing leachate level and taking all practicable measures to prevent contaminants from being discharged beyond the boundary of the site.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint.

Table 4.5.2 summarises some asset climate change resilience opportunities.

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
New Bin	UV degradation of plastic bins	Source bins made from UV resistant materials

Improvement Action 2: Further investigate opportunities for climate change resilience

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AMP.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AMP are shown in Table 5.1.1. These includes the closed landfill site and kerbside collection bins in the Warrnambool City Council area.

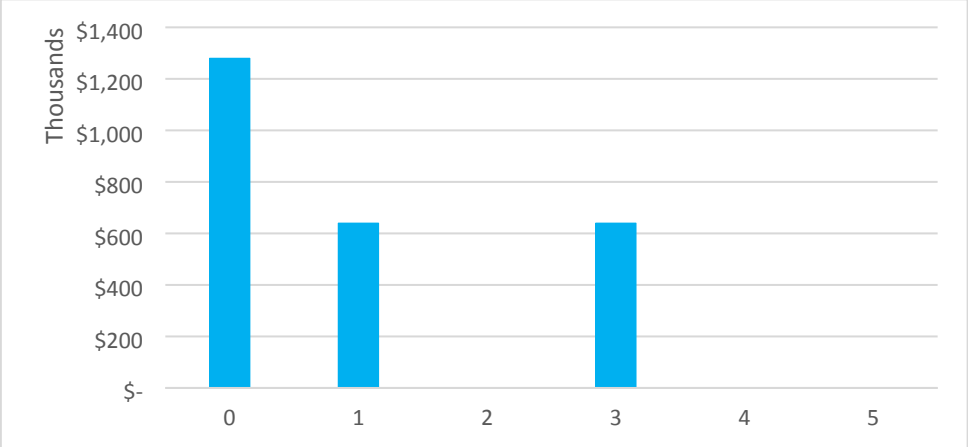
The age profile of the assets included in this AMP are shown in Figure 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Quantity	Replacement Value
Closed landfill site	1	$0 *
Rubbish bins	16,000	$640k
Recycling bins	16,000	$640k
FOGO bins	16,000	$640k
Glass bins	16,000	$560k
Total	**64,000**	**$2,480,000**

* While the closed landfill does not have a replacement value it does have ongoing operations and maintenance costs, these are included in the budget.

Figure 5.1.1: Asset Age Profile



All figure values are shown in current day dollars.

Bins are a significantly shorter lived asset than other classes such as roads or drainage. They are also replaced as cohorts. The entire portfolio of bins has been replaced over the last couple of years, therefore there are no bins older than 3 and they should not exceed 15 years age in future. The graph above provides an illustration of the age of the kerbside collection bins aligning with the rollouts. Rubbish and glass bins are still less than one year old. FOGO were done from 2018 and recycling bins between Nov 2020 to Mar 2021.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there have been no deficiencies identified in this asset class. 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
Nil	

Requests for larger bins to meet household demands are managed per customer request.

5.1.3 Asset condition

Condition is measured using a 1 – 5 grading system as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AMP results are translated to a 1 – 5 grading scale for ease of communication.

Table 5.1.3: Condition Grading System

Condition Grading	Description of Condition
1	**Very Good**: free of defects, only planned and/or routine maintenance required
2	**Good**: minor defects, increasing maintenance required plus planned maintenance
3	**Fair**: defects requiring regular and/or significant maintenance to reinstate service
4	**Poor**: significant defects, higher order cost intervention likely
5	**Very Poor**: physically unsound and/or beyond rehabilitation, immediate action required

Condition is not currently monitored in a formal way. Kerbside collection bins are replaced at a standard life of 15 years or due to sustaining significant damage before this time.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include waste disposal and complying with EPA requirements (Braithwaite St).

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. Examples of typical maintenance activities include collection bins repair and replacement, monitoring infrastructure repair and maintenance.

The trend in maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget
2019-20	$47,000
2020-21	$82,500
2021-22	$82,500

Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. The increase in maintenance budget coincides with older assets having more failures, prior to their renewal/ rollout of replacement bins. Where maintenance budget allocations are

such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AMP and service risks considered in the Infrastructure Risk Management Plan.

Reactive maintenance is carried out in accordance with response levels of service detailed in Appendix C.

Asset hierarchy

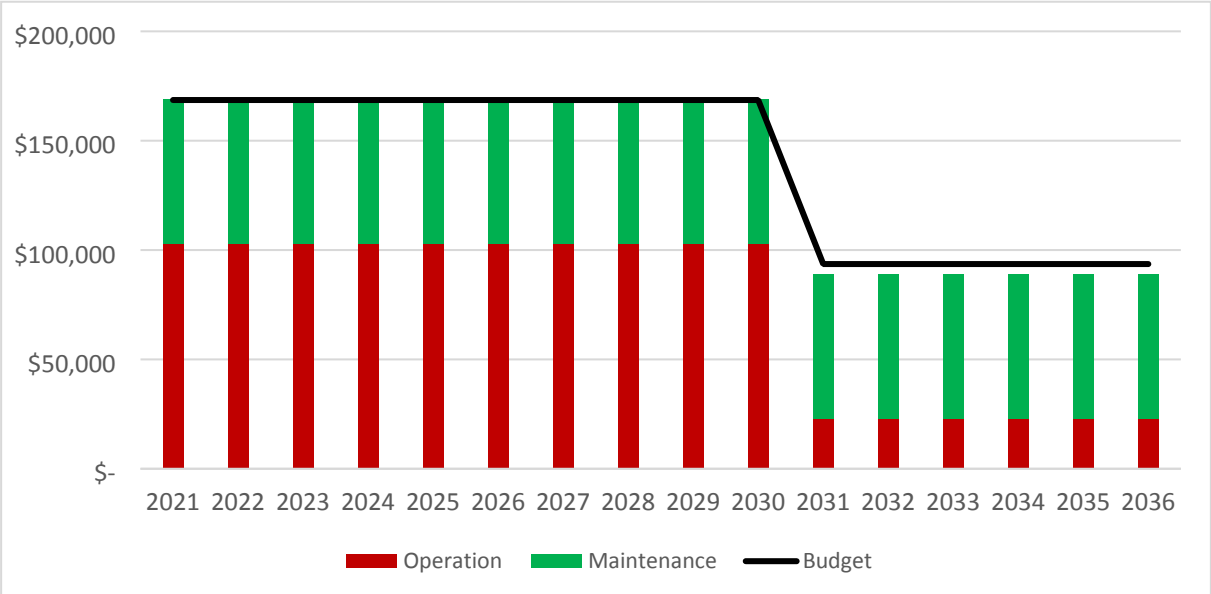
An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for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

Most of the assets included in this plan are kerbside collection bins and do not require an asset hierarchy.

Summary of forecast operations and maintenance costs

If additional assets are acquired at a greater rate than the contract allows, the future operations and maintenance costs may increase through contract variations. Both the operations and maintenance costs are covered by contracts, this includes the leasing of required fleet however all fleet management responsibility sits with the contractor. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

Operational costs are estimated to decrease in 2031 due to the end of the requirement to maintain and monitor the closed of landfill site (Braithwaite St).

Maintenance activities are undertaken to a standard that attempts to retain or returns the asset to a safe condition. Maintenance cost including bin repair and replacement slightly decreased or expected no significant increase due to new bins rollout.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Typically, work over and above restoring an asset to original service potential is an upgrade. New bins at new properties are considered to be an acquisition resulting in additional future operations and maintenance costs.

Asset renewal generally involves the replacement of an asset at the end of its life. For collection bins it includes replacement around 15-20 years from their installation date. These replacements are covered by the service contract and amortised over the life of the contract, therefore no capital outlay is required for their replacement.

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Kerbside Collection Bins	15 – 20 years

The estimates for renewals in this AMP were based on the Asset Register information.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate
    - e.g. replacing a bridge that has a 5t load limit
    - e.g. rehabilitate a road that is extremely cracked and potholed.
- To ensure the infrastructure is of sufficient quality to meet the service requirements
    - e.g. condition of a playground.

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.3.1.

Table 5.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
End of useful life	100%
Total	**100%**

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1a. The actual demand has been amortised over the term of the contract rather than requiring Council to fund the entire portfolio replacement within one budget cycle. A breakdown by waste stream is provided in Figure 5.4.1b. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4.1a: Forecast Renewal Requirement and Budget

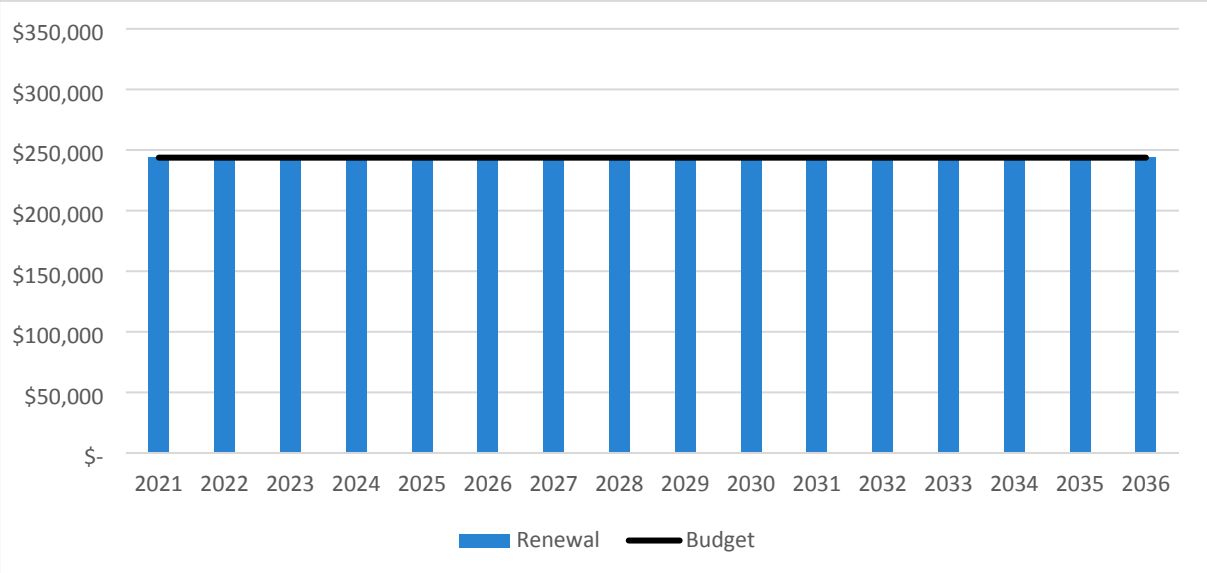
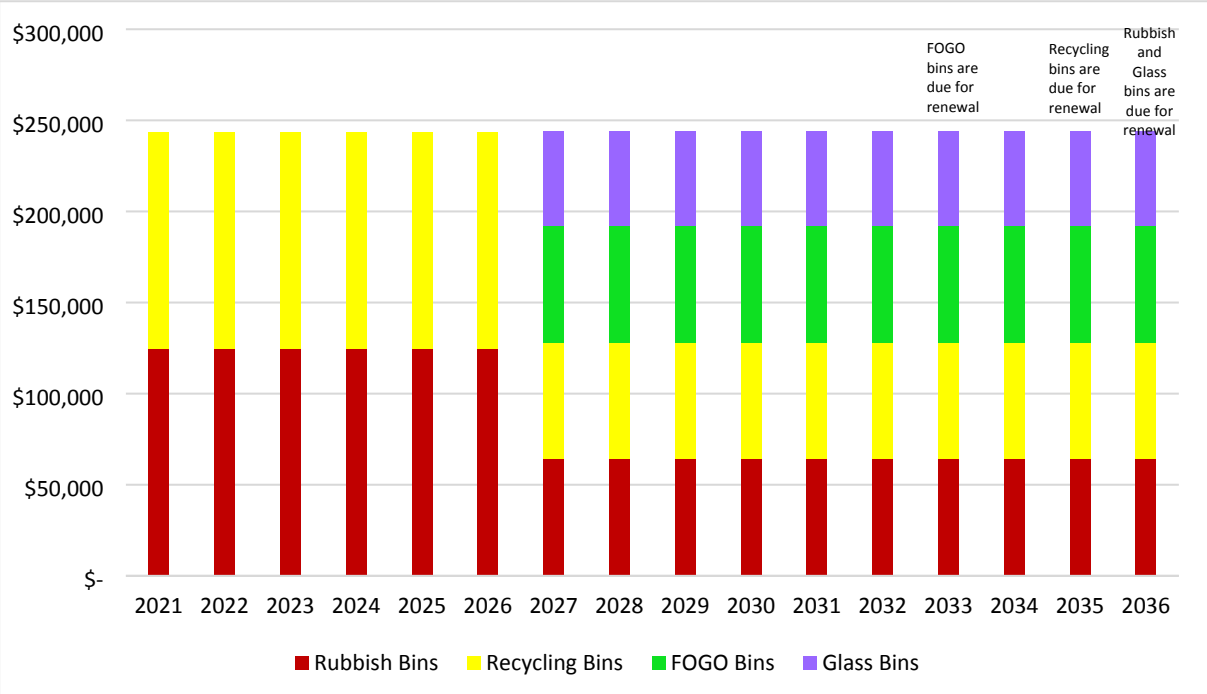


Figure 5.4.1a: Forecast Renewal Requirements by waste stream



All figure values are shown in current day dollars.

A bin replacement program occurs waste stream-by-waste stream at the end of the cohorts' life and typically takes 12 months to complete. These costs are amortised over the contract, typically of 7 years, as to avoid peaks in the renewal requirement. In 2036, rubbish and glass bins will be due for replacement again. It is assumed that the costs will remain similar for future contracts over the planning period. Consideration should be made for budget allocation according to this approach.

5.5 Acquisition Plan

Acquisition reflects are new assets that did not previously exist (or works which will upgrade or improve an existing asset beyond its existing capacity). They may result from growth, demand, social or environmental needs. Assets may also be donated or gifted to the Council, however this is rare for waste management assets.

5.5.1 Selection criteria

Proposed acquisition of new assets are identified from various sources such as community requests, proposals identified by strategic plans, partnerships with others, or more recently a change to recycling legislation. Potential new works should be reviewed to verify that they are essential to Council's needs. A works direction hierarchy is used in place of weighted criteria, this is detailed in Table 5.4.1.

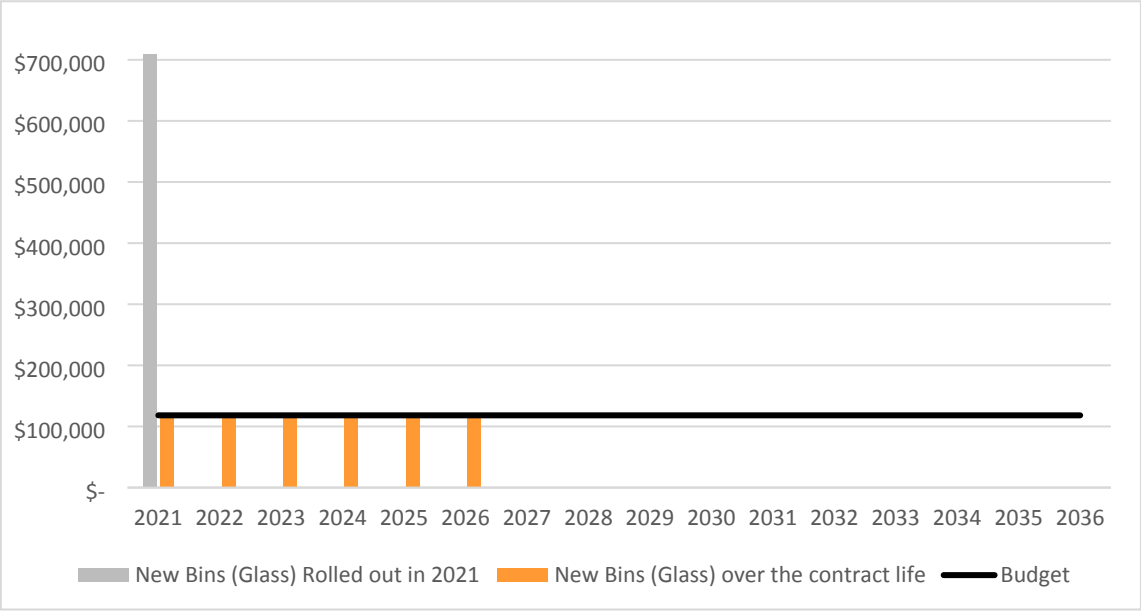
Table 5.5.1: Acquired Assets Priority Ranking Criteria

Works Direction	Priority
Legislated	1
Customer Request	2

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised in Figure 5.5.1 and shown relative to the proposed acquisition budget. Currently, these capital costs are spread (amortised) over the life of the contract ending 2026 (orange) as to reduce the impact on Council's cash flow, however the assets are all received upfront (grey). The forecast acquisition capital works program is shown in Appendix A.

Figure 5.5.1: Acquisition (Purchase) Summary



All figure values are shown in current day dollars.

When Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. Acquisitions arising from new properties is absorbed by the contract arrangements and shown under operations. Only significant acquisitions, such as a new waste stream (e.g. glass) is shown. Glass bins have been rolled out in April 2021. However, these capital costs are spread over the life of the contract.

Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan.

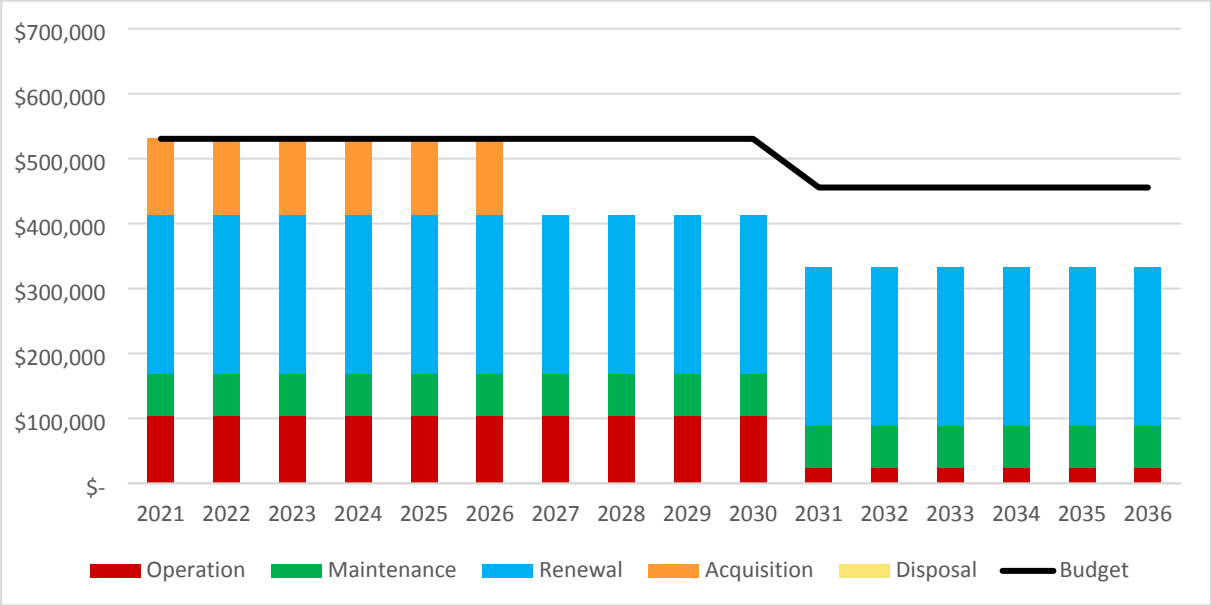
Acquiring these new assets will commit the funding of ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. Forecast acquisitions fully meet the community's required level of service.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

The long-term level of service can be managed within the proposed budget.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Table 5.6: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Landfill	Closure	2031	Not yet determined, refer to Improvement Action 1	$80,000

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and Guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are typically defined as those which have a high consequence of failure causing significant loss or reduction of service. Failure modes may include physical failure, collapse or essential service interruption. Under Council's Risk Management Framework, no critical assets have been identified which would cause significant impact on service delivery.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Nil		

By identifying critical assets and failure modes, an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

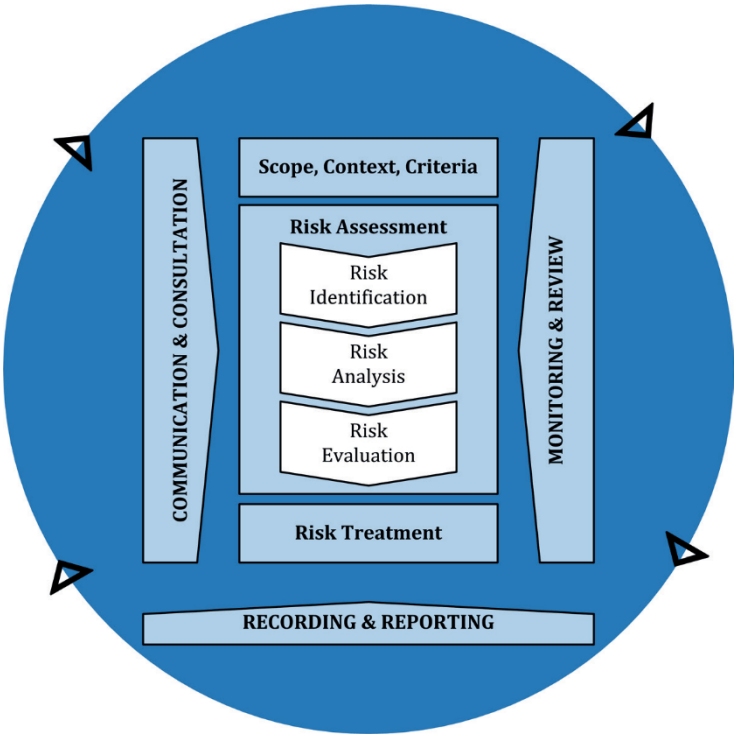


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management and the Council.

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Likelihood	Consequence	Risk Rating (VH, H)	Risk Treatment Plan	Likelihood	Consequence	Residual Risk *	Treatment Costs
Closed Landfill site	Flood waters at Braithwaite St infiltrate sump and risk of leachate contamination	Possible	Moderate	Medium	Construction of bund wall. Installation of Fire Pump	Rare	Moderate	Low	$1,000
	Leachate and run off could enter groundwater or waterways	Likely	Major	High	Groundwater monitoring at site	Unlikely	Major	Medium	$80,000
	Release of GHG (methane, carbon dioxide, nitrogen, sulphur) from anaerobic decomposition of organic matter	Possible	Major	High	Gas monitoring at site	Rare	Major	Medium	Included in $80k above
	Flood waters damage infrastructure at Braithwaite St.	Possible	Moderate	Medium	Construction of bund wall	Rare	Moderate	Low	$0 (asset built), only maintenance inspections required
	Automatic pump under capacity for flood events	Likely	Moderate	Medium	Installation of Fire Pump	Unlikely	Insignificant	Low	$1,000
Kerbside Collection Bins	Strong winds blow open/over kerbside collection bins	Likely	Minor	Medium	Installation of clips on new recycling bins Clips for other bins can be purchased by residents	Unlikely	Insignificant	Low	$60,000 added to recycling bin replacement contract

Service or Asset at Risk	What can Happen	Likelihood	Consequence	Risk Rating (VH, H)	Risk Treatment Plan	Likelihood	Consequence	Residual Risk *	Treatment Costs
	Improper disposal of corrosive materials which would damage bins	Unlikely	Minor	Low	Education and awareness programs	Rare	Minor	Low	$40k Public education reduces likelihood but does not change consequences

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

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service.

Resilience recovery planning, financial capacity, climate change risk assessment and crisis leadership.

Our current measure of resilience is shown in Table 6.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 6.3: Resilience Assessment

Threat / Hazard	Current Resilience Approach
Not Assessed	Not Assessed

We do not currently measure our resilience in service delivery. This will be included in future iterations of the AMP.

Improvement Action 3: Assess infrastructure resilience of waste management assets.

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AMP are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

There have been no operations or maintenance activities, or capital projects that are unable to be undertaken within the next 15 years based on the planned budget.

6.4.2 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- Dumping of household waste
- Illegal dumping where kerbside collection bins are inadequate (bin size, quantity or collection frequency)

6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Increased asset maintenance and replacement costs due to climate change impacts
- Environmental contamination if monitoring of closed landfill site ceases

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

7.0 FINANCIAL SUMMARY

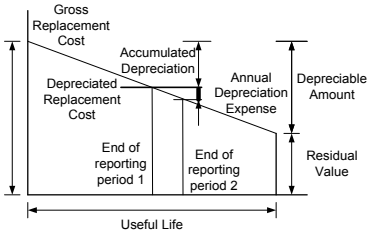
This section contains the financial requirements resulting from the information presented in the previous sections of this AMP. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this AMP are shown below. These assets are valued using the Capital Replacement Method:

Current (Gross) Replacement Cost	$606,371
Depreciable Amount	$606,371
Depreciated Replacement Cost	$558,169
Annual Depreciation	$41,413



These values were taken from the AMIS (Conquest) as of 1 January 2021. It was identified that only the recently added FOGO bins are captured. All kerbside collection bins will be recognised at completion of their rollout.

Improvement Action 4: Ensure register of kerbside collection bins is complete and maintained

7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AMP for this service area. The two indicators are the:

- Asset renewal funding ratio (proposed renewal budget for the next 15 years / forecast renewal costs for next 15 years), and;
- Medium term forecast costs/proposed budget (over 10 years of the planning period) which also includes all recurrent operational and maintenance costs.

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio 100%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 100% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

This AMP identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal requirements over the 10 year planning period is $446K on average per year.

The proposed (budget) operations, maintenance and renewal funding is $446K on average per year giving no shortfall. This indicates that 100% of the forecast costs needed to provide the services documented in this AMP are accommodated in the proposed budget. It should be noted that these calculations exclude acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays 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 Long-Term Financial Plan.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2021	$118,195	$103,020	$66,091	$243,702	$0
2022	$118,195	$103,020	$66,091	$243,702	$0
2023	$118,195	$103,020	$66,091	$243,702	$0
2024	$118,195	$103,020	$66,091	$243,702	$0
2025	$118,195	$103,020	$66,091	$243,702	$0
2026	$118,195	$103,020	$66,091	$243,702	$0
2027	$0	$103,020	$66,091	$243,702	$0
2028	$0	$103,020	$66,091	$243,702	$0
2029	$0	$103,020	$66,091	$243,702	$0
2030	$0	$103,020	$66,091	$243,702	$0
2031	$0	$23,020	$66,091	$243,702	$0
2032	$0	$23,020	$66,091	$243,702	$0
2033	$0	$23,020	$66,091	$243,702	$0
2034	$0	$23,020	$66,091	$243,702	$0
2035	$0	$23,020	$66,091	$243,702	$0
2036	$0	$23,020	$66,091	$243,702	$0

7.2 Funding Strategy

The proposed funding for assets is outlined in Warrnambool City Council's annual budget and Long-Term financial plan.

The financial strategy of Warrnambool City Council determines how funding will be provided, whereas the AMP communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this AMP, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AMP and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AMP are:

- The standard useful life of 15 years was used for determining replacement timing of kerbside bins
- A cost of $40 per bin was used in determining the replacement cost

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 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 ± 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 ± 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 ± 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 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment	Comment
Demand drivers	B	Change in demographics is known, but impact of climate change is yet to be understood.
Growth projections	A	Based on census data and analysis from profile.id
Acquisition forecast	A	Determined by existing contract and legislative requirements
Operation forecast	A	Determined by existing contract and meeting service level requirements
Maintenance forecast	C	Based on trend data, however may be impacted by renewal program
Renewal forecast - Asset values	A	Determined by existing contract which provides asset quantities and cost
- Asset useful lives	C	Based on industry benchmark, limited local data impact of Warrnambool environment is not known
- Condition modelling	N/A	Not applicable
Disposal forecast	E	Remediation costs are to be determined (Refer to Improvement Action1)

The estimated confidence level for and reliability of data used in this AMP is considered to be ‘A’. The areas of uncertainty, being the disposal cost to end the monitoring of Braithwaite St, is less critical to forecast demands.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices

8.1.1 Accounting and financial data sources

This AMP utilises accounting and financial data. Cost estimates for the replacement program are provided by the Development team.

8.1.2 Asset management data sources

This AMP also utilises asset management data. The source of the data is Conquest.

8.2 Improvement Plan

The asset management improvement plan generated from this AMP is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Section	Task	Responsibility	Timeline
1	3.6	Determine the future use of the closed landfill site, and potential remediation costs to remove monitoring infrastructure	Manager City Amenity	Medium-term
2	4.5	Further investigate opportunities for climate change resilience	Manager City Amenity	Long-term
3	6.3	Assess infrastructure resilience of waste management assets	Manager Infrastructure Services	Long-term
4	7.1	Ensure register of kerbside collection bins is complete and maintained	Coordinator Strategic Asset Management	Medium-term

8.3 Monitoring and Review Procedures

This AMP will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AMP will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AMP has a maximum life of 4 years and is due for complete revision and updating every 4 years from the date of adoption.

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this AMP are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AMP,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

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- Warrnambool 2040
- Resource Recovery and Waste Minimisation Strategy 2017-2021
- Warrnambool City council Annual Budget

10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions and Source

Kerbside collection bins acquisition arise from glass bins roll up with the cost remain the same over life of contract and not exist for next contract.

A.2 – Acquisition Project Summary

Project	Timing
New Bins (Glass)	2021-2026

A.3 – Acquisition Forecast Summary

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Planned Budget
2021	$118,195	$0	$118,195
2022	$118,195	$0	$118,195
2023	$118,195	$0	$118,195
2024	$118,195	$0	$118,195
2025	$118,195	$0	$118,195
2026	$118,195	$0	$118,195
2027	$0	$0	$118,195
2028	$0	$0	$118,195
2029	$0	$0	$118,195
2030	$0	$0	$118,195
2031	$0	$0	$118,195
2032	$0	$0	$118,195
2033	$0	$0	$118,195
2034	$0	$0	$118,195
2035	$0	$0	$118,195
2036	$0	$0	$118,195

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions and Source

It's assumed that the monitoring of Braithwaite Street closed landfill will end in 2031.

B.2 – Operation Forecast Summary

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2021	$103,020	$0	$103,020
2022	$103,020	$0	$103,020
2023	$103,020	$0	$103,020
2024	$103,020	$0	$103,020
2025	$103,020	$0	$103,020
2026	$103,020	$0	$103,020
2027	$103,020	$0	$103,020
2028	$103,020	$0	$103,020
2029	$103,020	$0	$103,020
2030	$103,020	$0	$103,020
2031	$23,020	$0	$23,020
2032	$23,020	$0	$23,020
2033	$23,020	$0	$23,020
2034	$23,020	$0	$23,020
2035	$23,020	$0	$23,020
2036	$23,020	$0	$23,020

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions and Source

There is no change assumed for bin repair and replacement.

C.2 – Maintenance Forecast Summary

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Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2021	$66,091	$0	$66,091
2022	$66,091	$0	$66,091
2023	$66,091	$0	$66,091
2024	$66,091	$0	$66,091
2025	$66,091	$0	$66,091
2026	$66,091	$0	$66,091
2027	$66,091	$0	$66,091
2028	$66,091	$0	$66,091
2029	$66,091	$0	$66,091
2030	$66,091	$0	$66,091
2031	$66,091	$0	$66,091
2032	$66,091	$0	$66,091
2033	$66,091	$0	$66,091
2034	$66,091	$0	$66,091
2035	$66,091	$0	$66,091
2036	$66,091	$0	$66,091

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

Replacement cost will remain the same over life of contract.

D.2 – Renewal Project Summary

The rollout of replacement bins has recently commenced. The cost of this is built into the service contract and will be incurred by Council over the coming years.

D.3 – Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget	Cumulative Renewal Gap
2021	$243,702	$243,702	$0
2022	$243,702	$243,702	$0
2023	$243,702	$243,702	$0
2024	$243,702	$243,702	$0
2025	$243,702	$243,702	$0
2026	$243,702	$243,702	$0
2027	$243,702	$243,702	$0
2028	$243,702	$243,702	$0
2029	$243,702	$243,702	$0
2030	$243,702	$243,702	$0
2031	$243,702	$243,702	$0
2032	$243,702	$243,702	$0
2033	$243,702	$243,702	$0
2034	$243,702	$243,702	$0
2035	$243,702	$243,702	$0
2036	$243,702	$243,702	$0

D.4 –Renewal Plan

Refer to Council's Asset Management System for the full 15-year renewal plan.

Appendix E Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2021	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2022	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2023	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2024	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2025	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2026	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2027	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2028	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2029	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2030	$118,195	$86,100	$82,500	$243,702	$0	$530,497
2031	$118,195	$11,100	$82,500	$243,702	$0	$455,497
2032	$118,195	$11,100	$82,500	$243,702	$0	$455,497
2033	$118,195	$11,100	$82,500	$243,702	$0	$455,497
2034	$118,195	$11,100	$82,500	$243,702	$0	$455,497
2035	$118,195	$11,100	$82,500	$243,702	$0	$455,497
2036	$118,195	$11,100	$82,500	$243,702	$0	$455,497