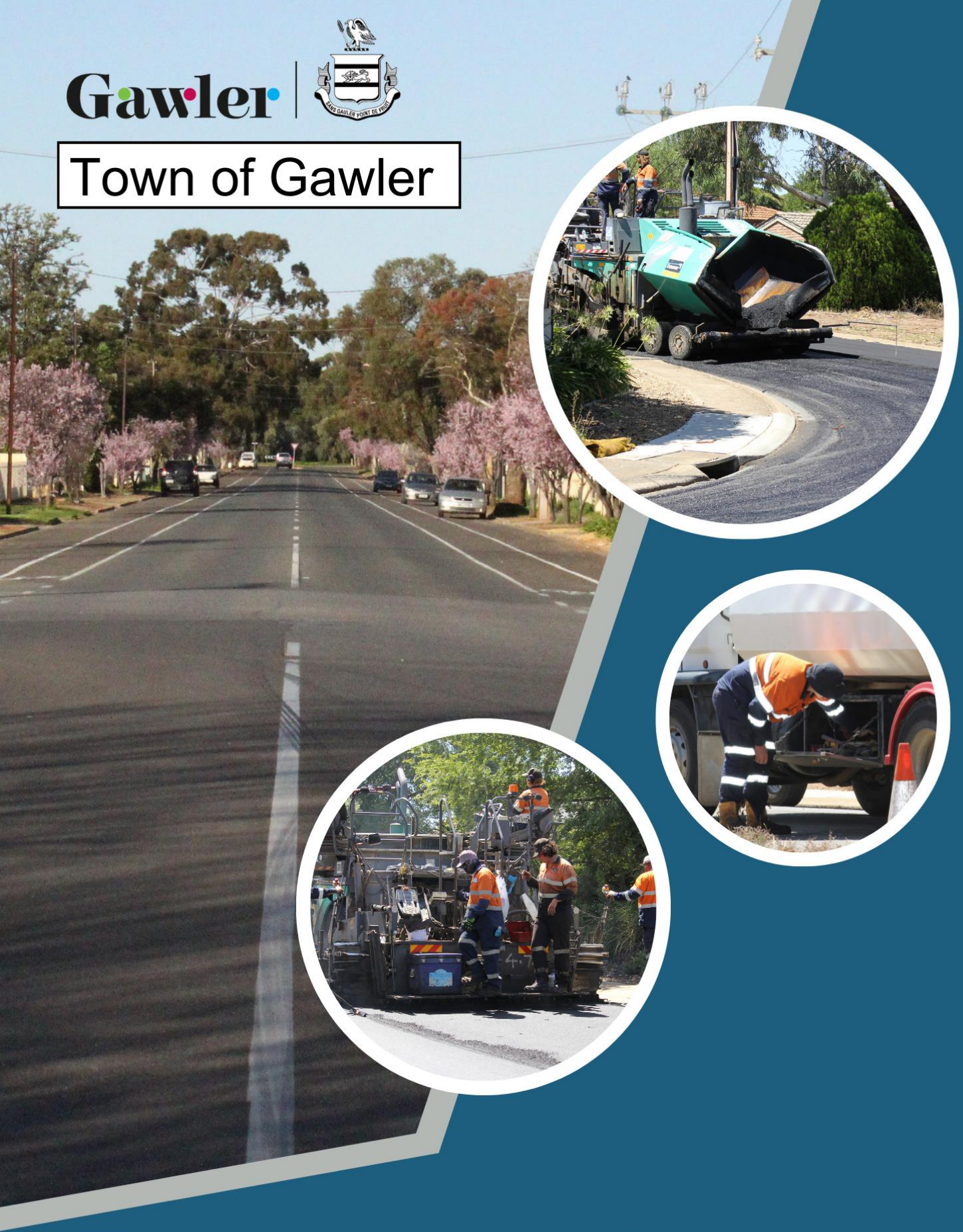
Gawler

Town of Gawler



Transport Asset Management Plan

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

Asset management provides strategic guidance in the planning, acquisition, operation and maintenance, renewal and disposal or assets. Its objective is to maximise asset service delivery potential, manage related risks and costs over the asset life cycle.

This Asset Management Plan (AM Plan) details information about transport infrastructure assets with actions required to provide an agreed level of service to the community in the most cost-effective manner while outlining associated risks and future improvement actions. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2020-2039 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

This plan covers transport assets under the care, control and ownership of the Town of Gawler and outlines expenditure required in order to effectively manage network service levels into the future to facilitate the safe movement of vehicles and pedestrians on its extensive road network.

The Transport Asset Management Plan is also required to support Council's Long Term Infrastructure and Asset Management Plan (LTIAMP), meet regulatory requirements of the Local Government Act 1999 and deliver growth goals identified in the Town of Gawler Community Plan 2030+.

The Asset Management Plans have been prepared using NAMS Plus financial modelling and reporting provided by Institute of Public Works Engineers of Australasia (IPWEA), which is considered to be best industry practice. The Asset Management Plans have also been prepared in 2021 following the latest audited financial statements of the Council as recommended by NAMS Plus financial modelling and therefore financial year 2020/21 is considered the first year of the Asset Management Plans.

1.2 Asset Description

The Transport Assets network comprises:

- Sealed Roads – 194km
- Unsealed Roads – 20km
- Footpaths – 150km
- Shared paths – 12km
- Bridge and Culverts – 30 nos.
- Roundabouts – 23 nos.
- Kerb and water tables -332km

The above infrastructure assets have significant total renewal value estimated at $202m.

1.3 Levels of Service

Council's present funding levels in the Long Term Financial Plan (LTFP) are sufficient to continue to provide existing services at current service levels over the next 10-year period by renewing and maintaining existing assets and maintaining contributed assets being received from new land developments, however, are not enough for new and upgrade works and operation and maintenance cost arising from new and upgrade works.

The main service consequences from reducing the Planned Budget are:

- Unable to provide equity of service in some areas such as new footpaths for an extended period.

- Delay creating new walking and cycling network assets.
- Postpone upgrades which would improve / increase assets function / capacity.
- Curtail maintenance activities / practices / frequency which lower the assets' level service to the community.

1.4 Future Demand

The main demands for new services are created by:

- Population Growth of 1% to 2% per annum
- Demographic Change
- Population density increase
- Changes to land use
- Legislative requirements
- Actions on climate change
- Implementation of Strategic Plans

These future demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions to assist in managing risks and assets failures. These non-asset solutions include:

- Ensure new land developments are delivered with appropriate transport assets.
- Use of appropriate asset renewal treatments.
- Prioritise and upgrade existing transport networks.
- Identify current issues and create new assets on a priority basis.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years.

A summary output from the AM Plan is the forecast of 10 year total outlays, which for the Transport Assets network service is estimated as $98,754,288 or $9,875,429 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is $93,066,992 or $9,306,700 on average per year as allocated in the Council's Long Term Financial Plan (LTFP). This represents 94.24% of the cost to sustain the current level of service at the lowest lifecycle cost.

It is important to note that the funding allocated in the Council's LTFP determines the level of service of infrastructure assets that can be provided by the Council for the community. The emphasis of the Asset Management Plan is to communicate the consequences that the LTFP funding allocations will have on the level of service provided and associated risks to consider so that decision making is 'informed'.

The infrastructure reality is that only what is funded in the LTFP can be provided. The informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

According to LTFP, the Council has an annual financial capacity of approximately $3,000,000 for new asset acquisitions/upgrades across all asset classes. There is an exception that $40 million has been allocated in LTFP for two year period (2027 & 2028) for an iconic project investment (ie Karbeethan Reserve Master Plan implementation). For the purposes of this Plan it is assumed that this is spread across infrastructure classes with $1,600,000 allocated for new and upgrade of transport assets, $400,000 for stormwater assets, $400,000 for open space assets, $300,000 for buildings assets and $300,000 for other plant/equipment and IT assets. These proportions are based on an review of the Council's expenditure on acquisition (new assets and upgrade works) requirements on each asset class in the recent years. Comparatively a bigger portion of $1.6m has been allocated for transport asset class because more funding is needed for new footpaths, walking & cycling paths and kerb & water table and upgrading of old road pavements and bridge structures, noting this is the largest asset class also.

However, the LTFP allows for some flexibility in allocating $3m on any asset class based on the priority of new and upgrade works for any given financial year.

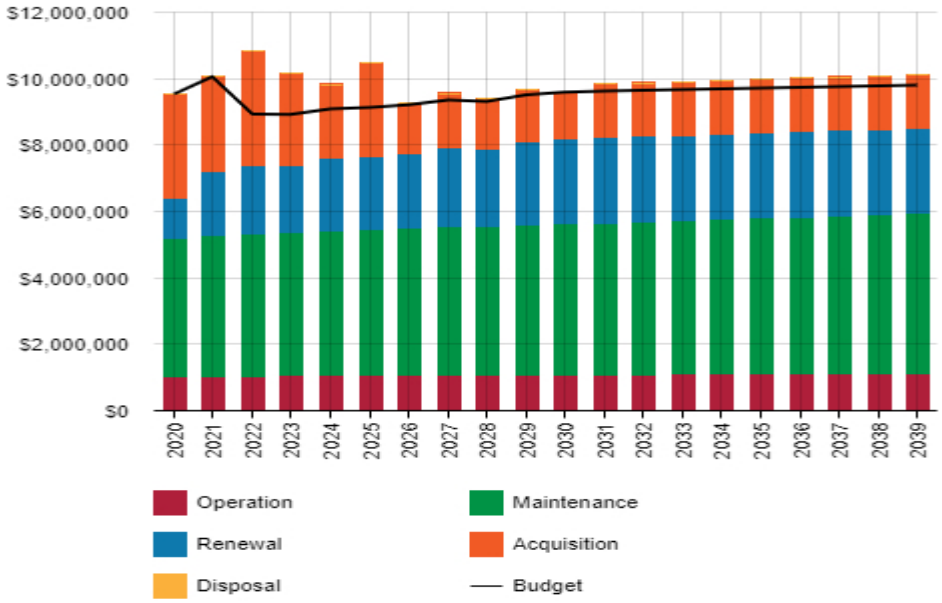
The anticipated Planned Budget for Transport Asset Group leaves a shortfall of $568,729 average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

There are non-discretionary asset acquisitions and upgrades in the LTIAMP for transport assets . These are road safety improvements, disability access improvements and fulfilling council commitments under land development deeds and external funding requirements, the remainder is discretionary.

Priority funding from $3million will be on non-discretionary capital projects and the rest on the discretionary projects on a priority basis as determined by the Council.

Creation of new assets results in additional O&M costs. For existing asset upgrades, O&M cost increase is expected to be low.

Forecast Lifecycle Costs and Planned Budgets



Note: All Figure values are shown in 2021 dollars.

Transport Assets network services funding will provide for the following:

- Operation, maintenance, renewal of roads, roundabouts, bridges, Culverts, footpaths and kerb and water tables to meet current service levels set in annual budgets.
- Adelaide Road between Gawler Mill Inn Bridge and Twelfth Street, Upgrade Dalkeith Road, Jane Street reconstruction, the Barossa Trail to Stuart O'Grady Bike Track, a portion of identified new footpaths and kerb and gutter within the 10 year planning period.

1.6.2 What we cannot do

We currently do **not** allocate enough funding in Council's LTFP (i.e. black budget line in the above figure) budget to provide these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

Key underfunded projects:

- Tiver Road and Bentley Road upgrade identified in the SUA deed.
- All required New footpath and kerb & gutter construction,
- Upgrade of some old road pavements that do not have engineered pavement structures unless there is reprioritisation of planned capital works (e.g. Nineteenth Street, Dalkeith Road & Chamberlain Road).

The current level of planned expenditure in the LTFP is low to provide all new and upgrade work of transport infrastructure required.

Works and services that cannot be provided under current levels of expenditure include:

- New footpath construction over $350,000 per year (i.e. approx. 1.6km),
- New kerb and water table construction over $223,000 (i.e. approx. 1km),
- Completion of walking and cycling network linkages within the next 10 year period,

Key unfunded projects are:

- Upgrade Goose Island footbridge,
- Sealing urban unsealed roads – urban and rural,
- Eighteenth Street upgrade,
- Works that have not been included in the LTIAMP unless reprioritise planned works including contributions to Infrastructure Deeds.

There are non-discretionary transport asset acquisitions in the LTIAMP, for example the recent Gawler East Link Road funding contribution required by the State Government ($2.4m), Blackspot funding projects, disability access improvements.

Priority funding allocated from the $3 million will be on non-discretionary capital projects and the remainder allocated on the discretionary projects on a priority basis as determined by the Council.

There are new assets which need additional O&M costs. For existing asset upgrades, O&M cost increase is less significant.

1.6.3 Managing the Risks

The current level of expenditure in the LTFP is sufficient to continue to manage risks over the next 10-year period, however if expenditure in the LTFP is reduced it would increase risk to the Council with the following consequences noted:

The main risk consequences are:

- Delay asset renewal works and reducing level of service to the community,
- Postpone upgrades that would improve/ increase assets function/ capacity,

- Delay the creation of new transport assets.
- Delays with implementation of Strategic Management Plan actions.

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

- Inspecting critical assets frequently including prioritising and repairing defects in accordance with inspection schedules to ensure they are safe for the community,
- Reprioritising current new asset and asset renewal work programs,
- Effecting repairs and safety improvements identified by assets audits (e.g. bridge repairs),
- Adopting sustainable asset maintenance practices,
- Balancing allocation of planned asset renewal budget for new and upgrade during annual budget process against renewal requirements.

1.7 Asset Management Practices

The Town of Gawler manages its assets using the following systems:

- AssetMaster software for transport and stormwater infrastructure asset management,
- Civica Authority software for financial management and property and open space asset management,
- Tree Plotter software for tree management,
- Microsoft Office software also for open space infrastructure asset management,
- Uniqco software for Plant & Equipment Fleet Management,
- Content Manager Software for record management,
- Skytrust software for risk management.

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 and timing this occurs using the acquisition year and the useful life,
- Alternatively, an estimate of renewal costs and timing is projected from external condition modelling systems (i.e. Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

The Alternate Method based on condition modelling systems was used to forecast the renewal costs for this Asset Management Plan.

1.8 Monitoring and Improvement Program

AM Plans are considered to be living documents and where improvements to asset management practices are identified these should be documented in the Council's AM Plans. The following items have been identified in the development of the Transport Asset Management Plan in order to improve asset management practices:

- Review and agree to an affordable Customer Level of Service,
- Review the Demand Management Plan, Risk Management Plan and Infrastructure Resilience Approach,
- Review asset renewal ranking criteria and new asset priority ranking criteria,
- Review capital expenditure during the Council annual budget preparation and amend to recognise any changes in service levels and/or resources available to provide those services,

- Value assets annually with a book value adjustment and five yearly with a unit rate review consistent with financial auditor requirements,
- Financial Statements and projections to be reviewed and revised based on cost updates after periodical asset financial valuation,
- Review transport assets mapped on the corporate GIS system and update layer data where required,
- Schedule next transport assets condition audit based on a four year cycle,
- Schedule next update the Council's Transport Asset Management Plan based on a four year cycle.

2.0 Introduction

2.1 Background

This AM Plan 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 long term planning period.

It is to be read with reference to the other strategic documents including but not limited to:

- Gawler Community Plan 2030+
- Long Term Financial Plan update 2021
- Long Term Infrastructure and Asset Management Plan 2020-2029
- Annual Business Plans 2021-2022
- Gawler (CT) Development Plan July 2019
- Gawler Traffic and Transport Management Plan (in progress)
- Gawler East Traffic Interventions Assessment Report 2018
- Local Area Traffic Management Plans (Gawler South, Willaston)
- Walking and Cycling Plan 2018-2028
- Gawler River Open Space Strategy 2009
- Gawler Urban Rivers Master Plan 2013
- Environmental Management Plan 2016
- Climate Emergency Action Plan (in progress)
- Asset Management Policy
- Asset Capitalisation Policy
- Risk Management Policy

Current status of Asset Management in the Organisation

The Council's existing Transport Assets Management Plan was adopted by the Council in 2013 and is required to be reviewed and updated.

The infrastructure assets covered by this AM Plan include roads, pathways, bridges & culverts, roundabouts and kerb & gutter. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

These assets are used to provide vehicular, walking and cycling movement services.

The infrastructure assets included in this AM Plan have a total replacement value of **$201,704,676**.

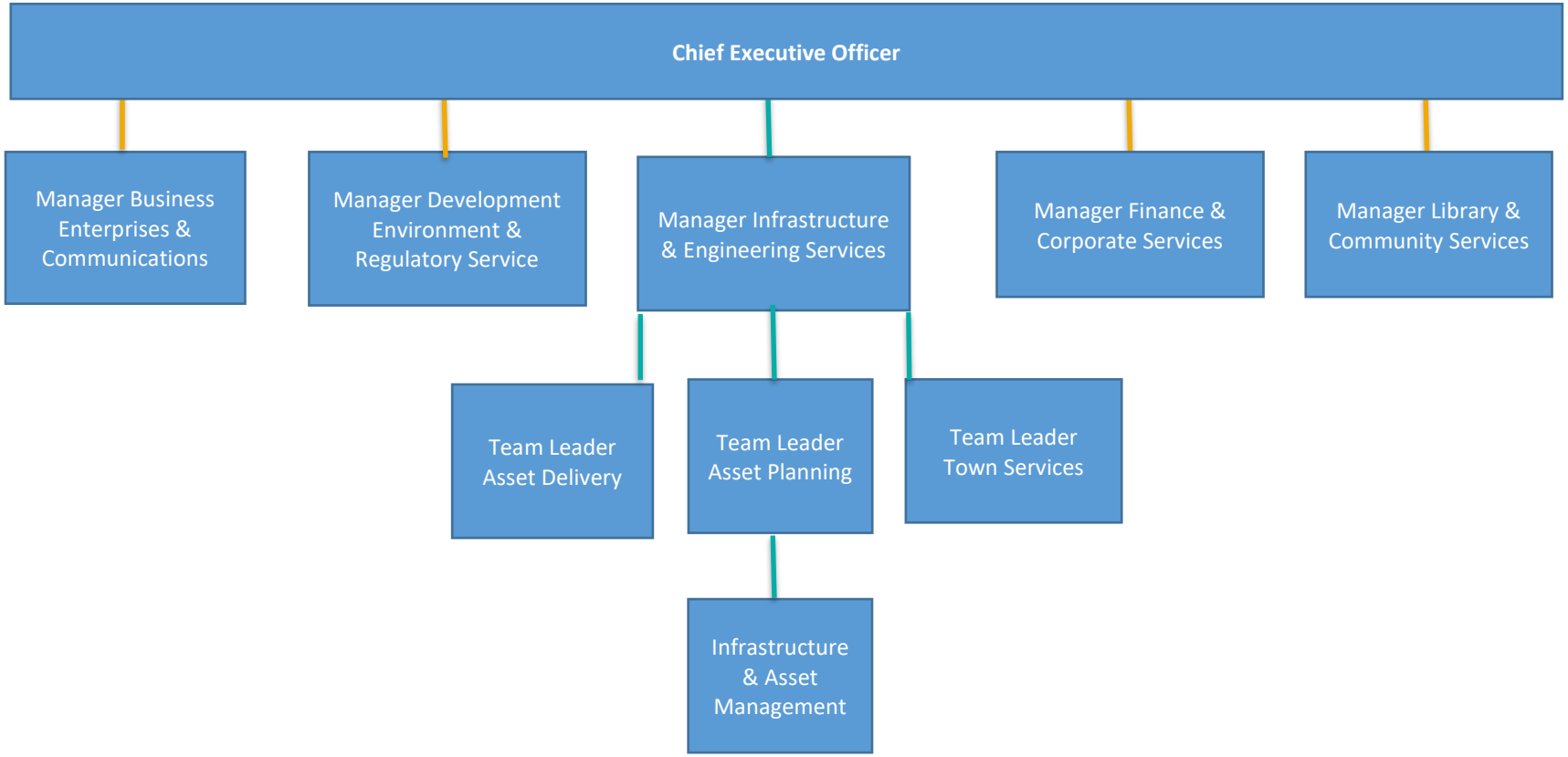
Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Council Members	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service provided by assets are sustainable, ■ Approval of the AM Plan.
Executive Management	■ Allocate required funds for the implementation of this AM Plan. ■ Oversee implementation of infrastructure planning, delivery and maintenance.
Council Engineering Staff	■ Programming and implementing capital works and making application for funds to meet standards set and assist deliver key projects, within budget constraints.
Council Operation Staff	■ Programming and implementing maintenance works to meet standards set, within budget constraints.
Department for Infrastructure & Transport	■ Interface agreement with the State Government for managing its road network under Operational Instruction 20.1 of *Highways Act 1926*
Developers	■ Vesting of new transport assets in the Council.
External Parties	■ Service level expectations by ▪ Community residents & businesses; ▪ Tourist and Visitors (as occasional users); ▪ Neighbouring Council's; ▪ Emergency services; ▪ Developers & Utility companies; ▪ Local Businesses and; ▪ Federal and State Government authorities & agencies (i.e. Environmental Protection Agency, Department for Environment and Water and others).

Council's organisational structure for service delivery from infrastructure assets is shown below.

Town of Gawler Organisational Structure for Service Delivery from Infrastructure Assets



2.2 Goals and Objectives of Asset Ownership

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

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- 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,
- 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:

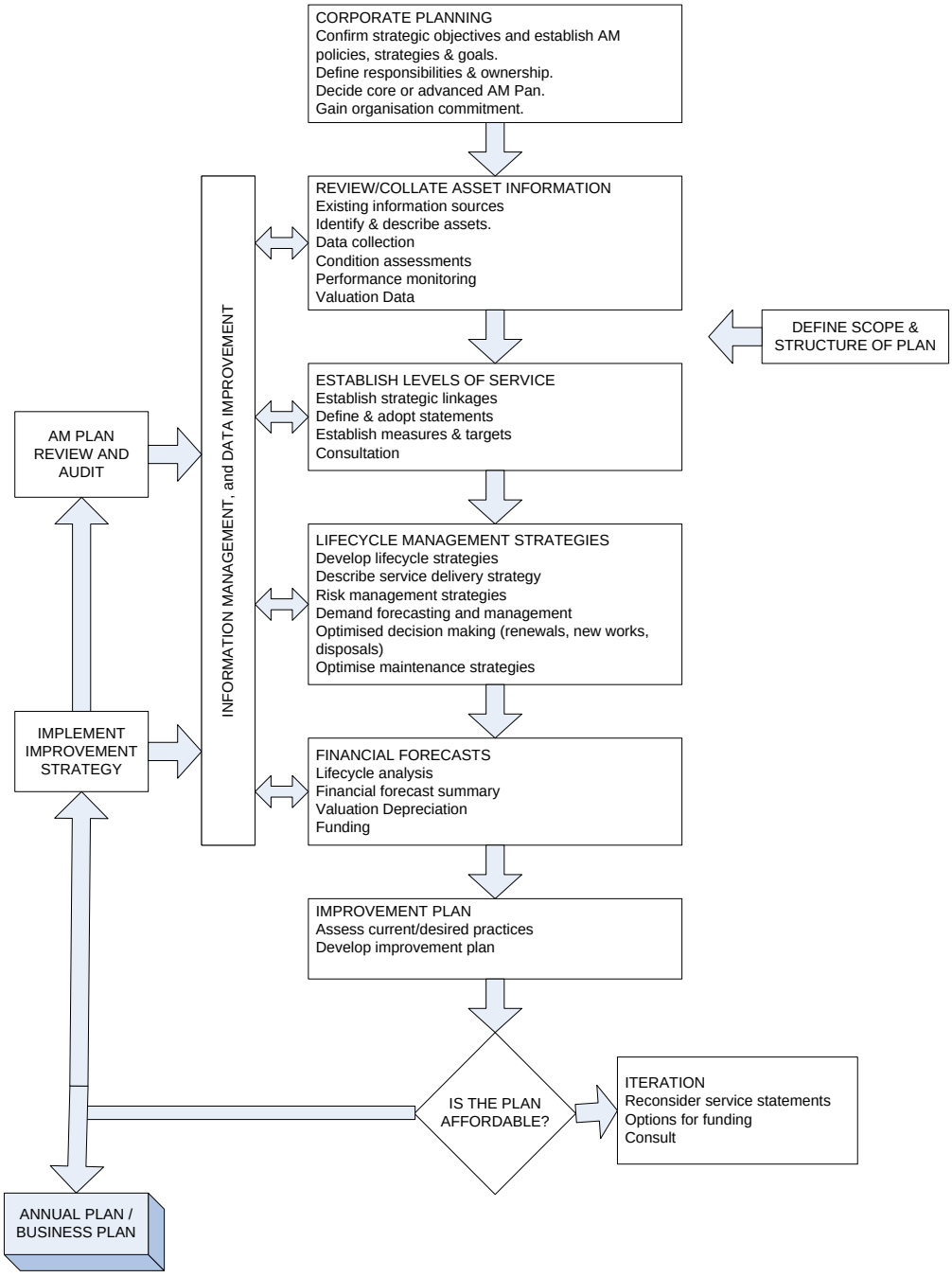
- International Infrastructure Management Manual 2015 [1]
- ISO 55000[2] - Asset Management

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles and terminology

A road map for preparing an AM Plan is shown below.

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the Town of Gawler. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Town of Gawler 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.

We currently have no research on customer expectations. This will be investigated by conducting Customer Satisfaction Survey as a part of public consultation on this AM Plan.

Table 3.1 will summarise the results from our future Customer Satisfaction Survey.

Table 3.1: Customer Satisfaction Survey Levels

Performance Measure	Satisfaction Level				
	Very Satisfied	Fairly Satisfied	Satisfied	Somewhat satisfied	Not satisfied
How satisfied are you on the condition of the local roads under the care and control of Council?					
How satisfied are you with the condition of arterial roads in the Town of Gawler under the care and control of the State Government?					
Do sealed roads function adequately to maintain traffic movements and access to properties?					
Council is timely in responding to sealed roads maintenance issues					
Do unsealed roads function adequately to maintain traffic movements and access to properties?					
Council maintains its unsealed roads in an appropriate manner through grading periodically?					
Council's responds to unsealed roads maintenance issues in timely manner?					
Condition of Council's footpaths provides an acceptable standard					
Condition of Council's kerbing provides an acceptable standard					
Council's responds to footpath maintenance issues in timely manner?					
Council's responds kerbing maintenance issues in timely manner?					

3.2 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Town of Gawler vision, mission, goals and objectives.

Our vision is:

A liveable, cohesive, active, innovative and sustainable community.

Our mission is:

The Town of Gawler is committed to fostering a liveable urban environment, taking advantage of the area's natural beauty and accessibility to both Adelaide and the Barossa Valley. We enjoy a cohesive and active local community which Council is proud to support. Moving forward, the Town of Gawler recognises the serious impacts associated with Climate Change on our environment and are committed to more sustainable practices and enduring innovation in this regard.

Our values are:

Teamwork, integrity, inclusion, creativity and happiness.

Strategic goals have been set by the Town of Gawler. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in Table 3.2 below. These goals and objectives are based on the Town of Gawler Community Plan 2030.

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

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
A Uniquely Identifiable Township	Protect and promote Gawler's unique heritage	Maintain historic and unique transport network assets for the appreciation of the community and visitors.
Managed, Protect and Sustainable Growth	Physical and social infrastructure to service our growing population and economy	Prepare plans for demand management, programs for new and renewal of transport assets.
To Respect and Nurture the Environment	Sustainable use of materials from natural resources for construction works	Balance service demand with sustainable and appropriate use of available resources, adapting circular economy, use of recycled materials.
A Strong, Vibrant Community	Create a safe community environment	Reduce risks from transport related hazards for the community. Identify and Implement local area traffic management plans.

3.3 Legislative Requirements

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

Table 3.3: 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 and long term infrastructure and asset management plan supported by other asset management plans for sustainable service delivery.

Local Government (Financial Management and Rating) Amendment Act 2005	Impetus for the development of a Strategic Management Plan, comprising an (Infrastructure) Asset Management Plan and Long-term Financial Plan.
Environmental Protection Act SA 1993	An Act to provide for the protection of the environment, and for related purposes.
Planning, Development and Infrastructure Act 2016	An Act to provide for matters that are relevant to the use, development and management of land and buildings, including by providing a planning system to regulate development within the State, rules with respect to the design, construction and use of buildings, and other initiatives to facilitate the development of infrastructure, facilities and environments that will benefit the community.
Landscape SA Act 2019	Set the key framework for managing the state's land, water, pest plants and animals, and biodiversity across the state.
Highways Act 1926	Provides for the appointment of a Commissioner of Highways, and to make further and better provision for the construction and maintenance of roads and works.
Road Traffic Act 1961	Have consideration of, adhere to and fulfil the requirements relating to road traffic; and other purposes.
Roads (Opening and Closing) Act 1991 & Regulations (2006)	Have consideration of, adhere to and fulfil the requirements for the opening and closing of roads.
Rail Safety Act 2007	Have consideration of, adhere to and fulfil the requirements for the management of interfaces between road and rail assets.
Disability Discrimination Act 1992 (DDA)	The responsibilities and powers of the Council in providing equitable access for persons with a disability.
Work Health and Safety Act (2012) & Work Health and Safety Regulations (2012)	The Act and Regulations' objectives include: to secure the health, safety and welfare of persons at work.

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

Service Objective:			
Customer Values	**Customer Satisfaction Measure**	**Current Feedback**	**Expected Trend Based on Planned Budget**
Easy Access	Customer surveys & Complaints	Moderate number of complaints related to walking accessibility.	Without major capital expenditure this situation is not expected to improve
Comfortable Travel	Customer surveys & Complaints	Minimal number of complaints	Remain reasonably constant
Safe Environment	Customer surveys & Complaints	Minimal number of complaints	Not anticipated to change

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service … what is the condition or 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?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Condition of Asset categories	Condition rating of the assets	Most Assets are in condition 3 (fair) or better	Likely to stay as current
	Confidence levels		Medium Professional judgement supported by data sampling	Medium Professional judgement supported by data sampling
Function	Measure of whether the Asset is appropriate for its intended use.	The proportion of the assets (by quantity) that are "fit for purpose"	Most assets are fit for purpose, however there is an increasing proportion not meeting expectations due to age profile.	Anticipated to increase as with more assets created under new land developments & capital works
	Confidence levels		Medium Professional judgement supported by data sampling	Low Professional Judgement with no data evidence
Capacity	Whether the capacity of the Transport network assets is sufficient.	The proportion of not having assets which should be created	60% of the total requirement of footpaths	Anticipated to increase slowly over a long term
	Confidence levels		Medium Professional judgement supported by data sampling	Medium Professional judgement supported by data sampling

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, cleansing, 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),

Asset managers should plan, implement and control technical service levels to influence the service outcomes.[3]

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

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Transport infrastructure meets demand and current standards that matches usages	Budget Allocation	Limited by the existing Budget in LTFP	As recommended in the Long Term Infrastructure & Asset Management Plan
	Expand walking and cycling facilities	Budget Allocation	Limited by the existing budget	As recommended in the Long Term Infrastructure & Asset Management Plan
		Budget	$1,881,000 (ten year average from LTFP estimate)	$2,344,800 (ten year average from LTIAMP)
Operation	Roads are safe for users' need	Condition and defect survey frequency	Five yearly inspections	Due to ageing frequent monitoring is required for some assets
	Streets are clean	Sweeping Frequency	Local Roads - 10 weekly. Murray Street – 3 sweeps per week. Town Centre Precinct – Weekly some Fortnightly. Town Centre access Roads – Three weekly.	Service level review as part of Street sweeping contract procurement in 2021/22.
	Engineering Management	Expenditure	Annual Cost	Will increase as additional assets are constructed and require management
		Budget	$1,043,555	$1,064,541 (ten year average forecast from NAMS+ modelling)
Maintenance	Maintain sealed road	Maintenance and minor repair cost	Annual Cost	Likely to increase due to additional assets being

[3] IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	infrastructure to achieve long service life	e.g. patch work, edge repairs		created and the ageing of existing assets
	Maintain unsealed roads to achieve long life	Grading frequency	Planned frequency (generally 4 visitations)	Likely to stay as current
	Maintain bridge & culvert structures to achieve long life	Maintenance and minor repair cost e.g. cleaning and painting	Currently reactive to limit of budget	Likely to increase due to additional assets being created and the aging of existing assets
		Budget	$4,271,544 (ten year average from LTFP estimate)	$4,355,487 (ten year average forecast from NAMS+ modelling)
Renewal	Sustain transport Infrastructure that meets users' need	Renewal as assessed in Condition Audit	Currently limited by budget	Significant renewal expenditure is required to address ageing road pavement and kerbing assets
		Budget	$2,110,600	$2,110,600 (LTIAMP)
Disposal	Disposal of assets no longer in use	Identified assets and cost of disposals after investigations	Frequency or annual amount spent on Activity	Optimal frequency or annual amount spent on Activity
		Budget	No disposals Planned. Zero Total for the 10 years	No disposals Planned. Zero Total for the 10 years

Note: * Current activities related to the annual Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

Following completion of the transport assets condition audit in 2017, the Council supported the funding of asset renewal works to maintain current network condition for the next 10 year period. In addition, the Council supported the funding of bridge and culvert structure repairs for 4 years and this work is included in current LTFP. Funding for operation and maintenance of contributed new assets due to new land development growth have also been included in the LTFP. There is an increase in asset operation and maintenance costs expected over the next 10 year period due to Council's new and upgrade capital works.

It is important to monitor the service levels provided regularly to ensure sustainable ongoing performance of transport assets. The current performance is influenced by work efficiencies, technology, and customer priorities, which may all change over time. Review and establishment of the agreed position that achieves a 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 (urban growth), regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices and environmental awareness.

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.

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 AM Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population growth	Increased from 17,800 in 2001 to 23,583 persons in 2016	1% to 2% annual increase	Asset capacity & function issues. Demand for upgrades/ new assets is likely to increase	Combination of managing existing assets, upgrading existing assets and providing new assets funded by various parties
Demographic change	Greater number of residents aged between 0-24 years and over 65 years old. (49%)	Further increase with population growth	Asset capacity & function issues. Demand for more pathways, pedestrian crossings, signage etc. for elderly people	Combination of managing existing assets, upgrading existing assets and providing new assets funded by various parties
Population density increase	Create smaller land allotments that have small private open spaces/ backyards	Increase urbanisation	Demand for walking and cycling networks	Combination of managing existing assets, upgrading existing assets and providing new assets funded by various parties
Change of land use	Urbanisation of rural living areas	Increase urbanisation	Demand for more transport infrastructure assets in new urban areas	Developers provide sustainable assets or contribute to upgrade existing assets to current standards
Legislative requirements	Assets do not meet with current DDA compliance & to current Australian Standards	New assets and asset renewals to meet DDA compliance and current	Liability & reputation damage to the Council	Combination of managing existing assets, upgrading existing assets and providing new assets funded by various parties

		Australian Standards		
Action on climate change	Greenhouse gas emission due to traffic congestion, use of traditional materials and work practices	Use of recycled materials, low emission methods and alternative asset treatments	Asset capacity & function issues. Demand for capacity upgrades in existing systems and also new assets	Upgrading existing assets and providing new assets funded by various parties. Use of recycled materials and improved sustainable products
Environmental considerations	Environment pollution due to current practices. Scarcity of natural resources.	Need to control environment pollution. Adapt alternative asset treatments	Network upgrades at cost	Use of recycled materials and lower carbon footprint methods and products, circular economy.

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 the Town of Gawler 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 LTFP (Refer to Section 5).

4.5 Climate Change and Adaption

The impacts of climate change can 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 will impact on assets can vary significantly 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 should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

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

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Hot Weather	Extreme Hot weather for prolonged periods	Change in asset useful life Hot asset surfaces	Ensure appropriate asset renewal materials/ treatments adopted.
Storm Intensity	More extreme weather events	Potentially more localised Flooding on roads	Ensure stormwater drainage system upgrades and maintenance of drains is included in programs

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 will have benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- 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
Transport Network Assets to withstand climate change	More extreme weather events	Require water sensitive design in any new road upgrade works.
Transport Network Assets to withstand climate change	More extreme weather events	Any new drainage works should allow for increased rainfall intensity
Transport Network Assets to withstand climate change	More extreme weather events	Use of sustainable recycled materials and treatments. Create greater tree canopy cover.

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

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Town of Gawler 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 AM Plan are shown in Table 5.1.1.

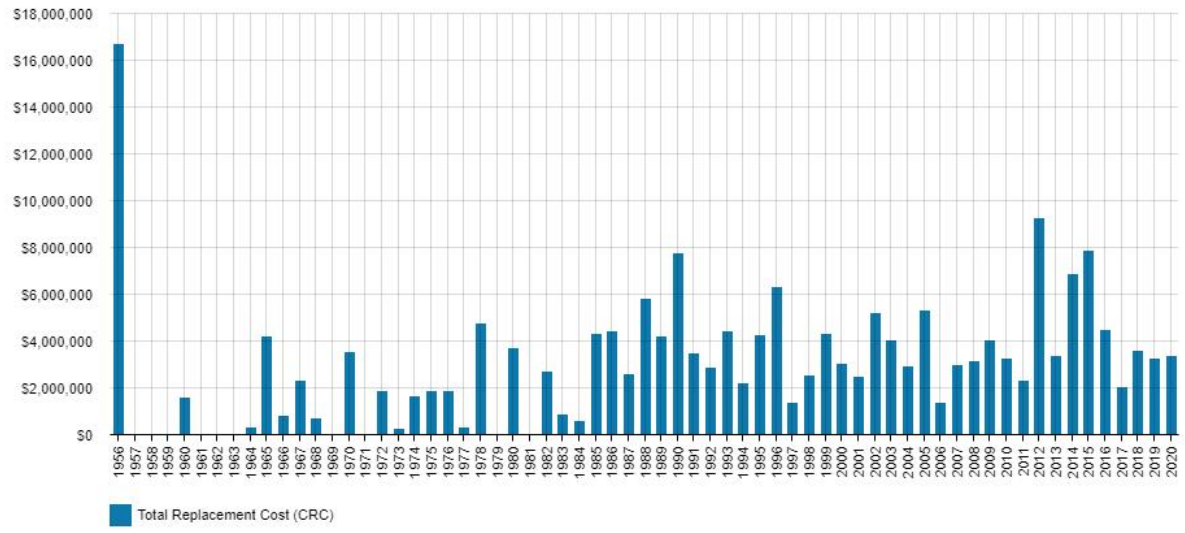
These assets include sealed, unsealed and formed roads, pedestrian and shared paths made out of different materials including concrete, pavers, asphalt and rubble, kerb and water tables which include concrete kerb and gutter, slate kerbs and spoon drains. Also, bridge and culvert structures including vehicular and pedestrian bridges and culverts and Roundabouts.

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

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Sealed Roads	194 km	$96,235,352
Unsealed Roads	20 km	$1,875,803
Footpaths	150 km	$23,137,156
Shared paths	12 km	$4,460,459
Bridges & Culverts	30 Nos.	$12,515,855
Roundabouts	23 Nos.	$1,719,486
Kerb & Water Tables	332 km	$61,760,564
TOTAL		**$201,704,676**

Figure 5.1.1: Asset Age Profile



Note: All figure values are shown in 2021 dollars.

As can be seen in this graph, there is a peak at 1956. There were assets constructed in early part of 1900 and they are indicated as constructed in 1956 in the graph for its clarity on time axis. They are mainly road pavements, the Gawler Mill Inn Bridge and slate kerbing in Church Hill historic State heritage area. These assets will require appropriate funding for renewal in the future. Of note the Gawler Mill Inn Bridge has recently been upgraded by the Council as part of the Murray Street Stage 6 Project. Some assets may need to be upgraded to overcome the capacity deficiencies associated with population growth in future years. Recent peaks shown in the graph represent the new land developments in Gawler since 2000.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. 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
Road Network	Some road widths are not adequate to have cycle lanes, parking facilities in urban area.
Footpath Network	Connectivity between different routes Providing footpaths to meet requirements in the Council Footpath & Cycleways Policy and Walking and Cycling Plan 2018-2028 Identified path widths do not meet current DDA compliance and Australian Standards
Bridges and Culverts	Width of the identified structures does not meet current standards Identified structures do not comply to current standards
Kerb and Water Table	Invert capacity and deformation of kerb channel

The above service deficiencies were identified from inspections undertaken by Town Of Gawler staff and professional engineering consultants as part of the Transport Assets Condition Audit (2017) and the Bridges and Culverts Condition Audit (2017).

5.1.3 Asset condition

Condition is monitored for critical assets frequently and assessed for all assets periodically on a 5 yearly cycle. In 2017, a comprehensive transport assets condition assessment and an asset valuation was completed and the audited assets data have been used for preparing this Asset Management Plan.

The condition assessments have been completed in accordance with best industry practice by independent professional engineering consultants. Different types of defects for each asset category have been inspected and the overall asset physical condition has been assigned a rating based on the severity and extent of defects. The physical condition has informed the remaining useful life of each asset. At the end of the remaining useful life, the asset has been planned for renewal in order for the asset to continue to provide its service level to the community. The condition index has been validated in the field to match with the actual condition of the asset in the field consistent with best industry practice. Based on the condition assessment undertaken, a 10 year transport assets renewal program with associated costings was prepared with the exclusion of bridge and culvert assets.

A repair and safety improvement work program was specifically prepared for Council's bridge and culvert assets as none were identified for renewal within the next 10 year period based on the condition audit undertaken. The 4 year program has been included in the Council's current LTFP in order to maintain Council's bridge and culvert assets over this period until the next condition audit is undertaken.

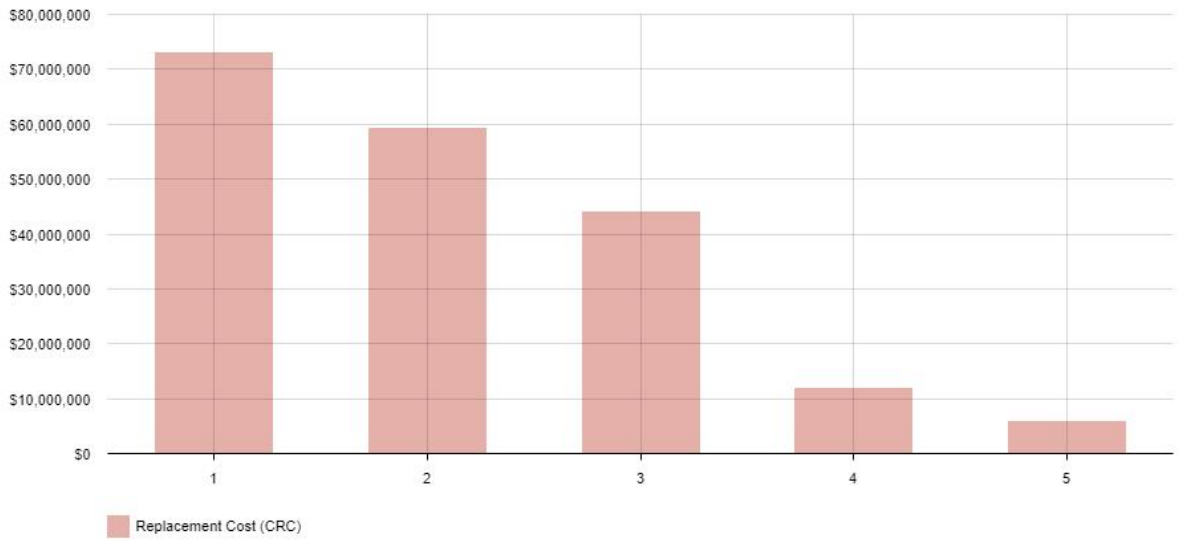
Condition is measured using a 1 – 5 grading system[4] as detailed in Table 5.1.3. It is important that consistent condition grades be used in reporting various assets across an organisation. This supports effective communication. At the detailed level assets may be measured utilising different condition scales, however, for reporting in the AM plan they are all translated to the 1 – 5 grading scale.

Table 5.1.3: Simple Condition Grading Model

Condition Grading	Description of Condition
1	**Very Good**: only planned maintenance required
2	**Good**: minor maintenance required plus planned maintenance
3	**Fair**: significant maintenance required
4	**Poor**: significant renewal/rehabilitation required
5	**Very Poor**: physically unsound and/or beyond rehabilitation

The condition profile of our assets is shown in Figure 5.1.3.

Figure 5.1.3: Asset Condition Profile



Note; All figure values are shown in 2021 dollars.

The condition profile shows that most transport assets are in very good to fair condition (i.e. condition rating 1, 2 and 3). There is approximately 10% of assets in poor to very poor condition (i.e. condition rating 4 and 5) and some will require renewal in next 10 year period. Most of the assets that require renewal within next few years have a condition rating of 4 or 5 and include a combination of resurfacing sealed roads, re-sheeting unsealed roads and renewal of footpaths and kerb and water tables.

Repair works have been planned for Council's bridge and culvert structures for the next four year period in order to maintain their structural integrity and service level to the community.

[4] IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility services (street lighting).

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 asphalt patching, footpath repairs and kerb and gutter repairs.

The trend in operation and maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Operation and Maintenance Budget Trends

Year	Operation and Maintenance Budget
2019/20	$4,803,198
2020/21	$5,187,085
2021/22	$5,439,504

Planned operations and maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. 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 AM Plan and service risks considered in the Infrastructure Risk Management Plan.

The upgrading of existing transport assets is expected to have operations and maintenance budget implications that will require careful consideration in the future as these costs are currently unaccounted for in the Councils LTFP.

Proactive maintenance

Transport assets condition assessment is scheduled on four yearly cycle. Under condition assessment, asset defects are captured and identified for consideration of maintenance scheduling. Remedial actions are effected under planned maintenance program prepared on the basis of priority using the captured defects during condition assessment.

During asset creations and renewals, Council implements 360 degree approach which means for an example, when a road is resealed, all the other assets on that road are inspected, defects such as cracks on footpaths and stormwater pit lids, damaged kerb & gutter sections are identified and necessary repairs are effected to footpaths, kerb & gutter and replacement of stormwater pit lids, upgrade pedestrian crossing pram ramps and tree pruning at the time of road resealing.

Reactive maintenance

The defects that are identified from routine asset inspections and mainly from customer requests are rectified under reactive maintenance programs. Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

Achieving strategic objectives

The Town of Gawler plans to operate and maintain its transport asset network to achieve the following strategic objectives.

- Ensure all council owned infrastructure is managed and maintained in a sustainable manner to provide a quality experience for our community,
- Ensure the transport asset network is maintained at a safe and functional standard as set out in this AM Plan,

- Develop a safe and interconnected network of cycle/walking paths to key everyday destinations such as schools, workplaces, shops, sports and recreation facilities and community services.

Asset hierarchy

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

The service hierarchy is shown is Table 5.2.2.

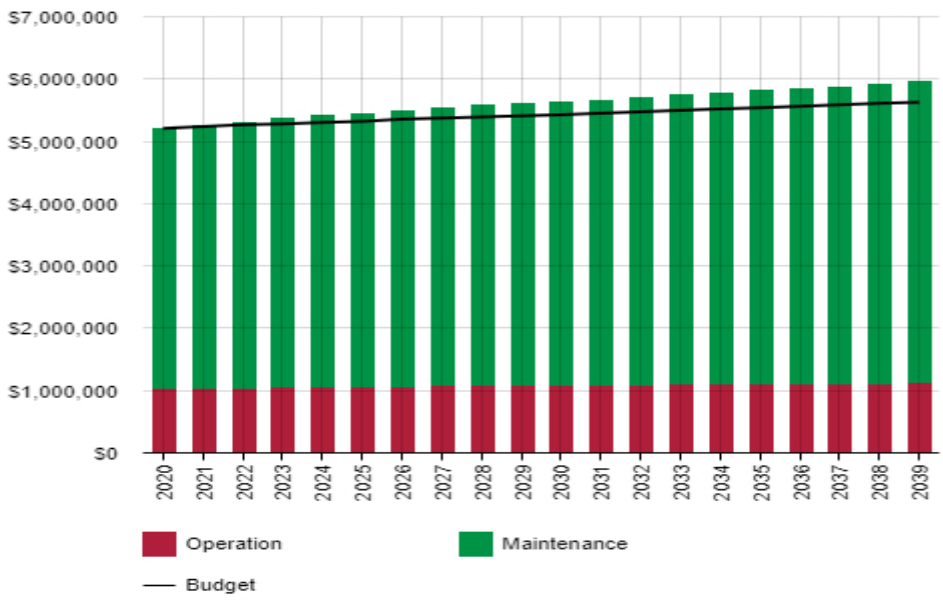
Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Roads - Collector, Local & Access	Maintain 80% of roads in fair or better condition for user safety convenient and comfort
Roads – Urban & Rural	Maintain 80% of roads in fair or better condition for user safety convenient and comfort
Bridges – Vehicular and pedestrian	Maintain 80% of bridges in fair or better condition for user safety convenient and comfort
Footpaths – Town Centre, local roads & Off-road	Maintain 80% of footpaths in fair or better condition for user safety convenient and comfort

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. 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



Note: All figure values are shown in 2021 dollars.

The anticipated increase in operations and maintenance is being driven by the need to manage the new assets being constructed as well as the increased requirements due to the ageing assets.

Figure 5.2 shows that the projected Operation and Maintenance (O&M) expenditure is gradually increasing over the 20 year period above the budget amount in the LTFP. The LTFP has accommodated the O&M cost estimates for future assets received from growth over the next 10 year period associated with land developments. However, due to identified assets acquisitions and upgrades under Council's capital works program in LTIAMP, their O&M cost is increasing at 0.85% on capital cost. This percentage is the ratio of forecast asset O&M cost to new capital asset cost with the assumption that transport asset upgrade works do not increase O&M cost (e.g. upgrade road pavements) and increase O&M cost for only creation of new assets under capital works (e.g. footpaths and kerb & gutter). Council needs to consider allocating extra funding to cover the projected O&M expenditure and alternative options to minimise cost increase or maintain the O&M expenditure at current level by reducing the level of service and deferring acquisitions and upgrades identified in the LTIAMP.

In the LTIAMP, there are two types of capital works identified as non-discretionary and discretionary. The forecast annual average increase of O&M cost for non-discretionary assets is $16,917 whereas the total annual average increase is $104,929.

Deferred maintenance (i.e. works that are identified for maintenance activities but unable to be funded) are included in the risk assessment and analysis in the infrastructure risk management plan.

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. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed in 2016.[5]

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Road Surface - Asphalt	25 years
Local Road Pavement Base	75 years
Local Road Pavement Sub Base	150 years
Footpath - Concrete	70 years
Kerb & Water Table - Concrete	80 years

The estimates for renewals in this AM Plan were based on an alternate Method.

[5] CR16/31408 - Gawler Valuation Review Report Version 8 dated 29-06-2016 by Asset Engineering

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 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a road).[6]

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

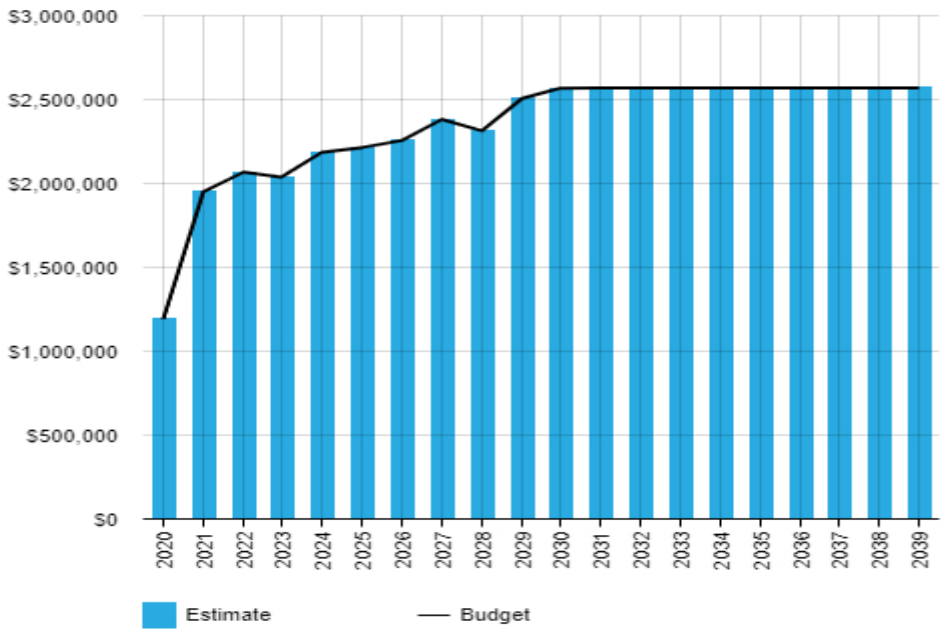
- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[7]

Asset renewal programs for each asset category have been prepared based on the physical condition of the assets. Future condition audits will consider asset's physical condition, risk associated with the asset and the criticality of the asset's service when prioritising asset renewals for preparing renewal works program.

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. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4: Forecast Renewal Costs



Note: All figure values are shown in 2021 dollars.

[6] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[7] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Figure 5.4 shows the projected capital renewal expenditure over a 20 year planning period based on the asset remaining life and as outlined in the asset condition audit report. It is noted the projected renewal expenditure is gradually increasing over next 10 year period.

Asset renewal and replacement expenditure identified in the capital works program has been accommodated in the Council's LTFP and there are no unfunded asset renewal works in the current LTFP.

Deferred renewal and replacement (i.e. those assets identified for renewal and/or replacement and not scheduled in capital works programs) will be included in the risk analysis in the risk management plan.

5.5 Acquisition Plan

Acquisitions are new assets that did not previously exist or works that 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 to the Town of Gawler(i.e. land developments and infrastructure deeds).

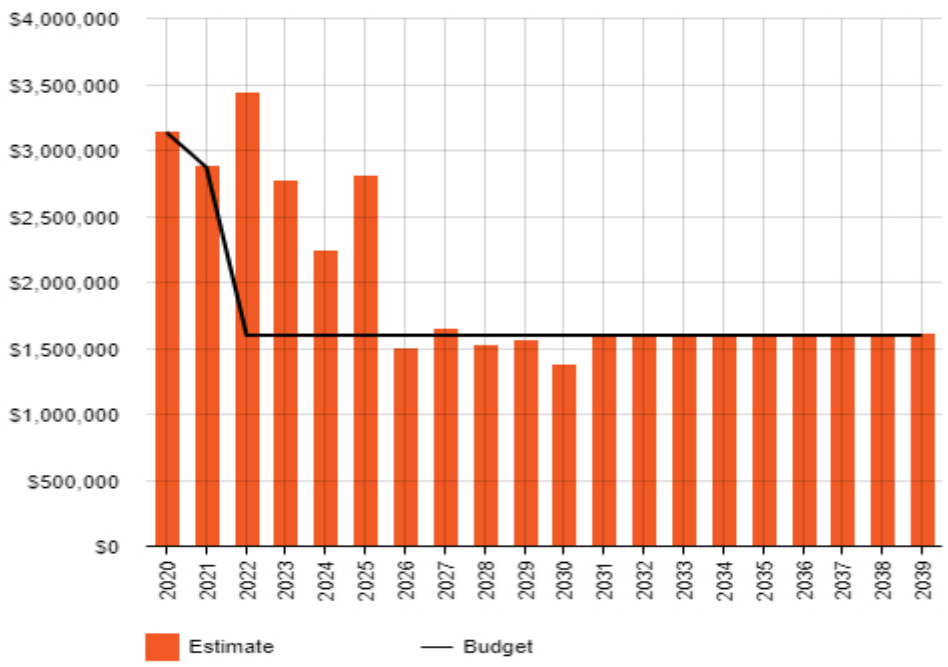
5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be strategically reviewed to verify that they are essential to the Council's needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. This is undertaken each year when updating the LTIAMP and annual budget allocations.

5.5.2 Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised in Figure 5.5.2.1 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

Figure 5.5.2.1: Acquisition (Constructed) Summary



Note: All figure values are shown in 2021 dollars.

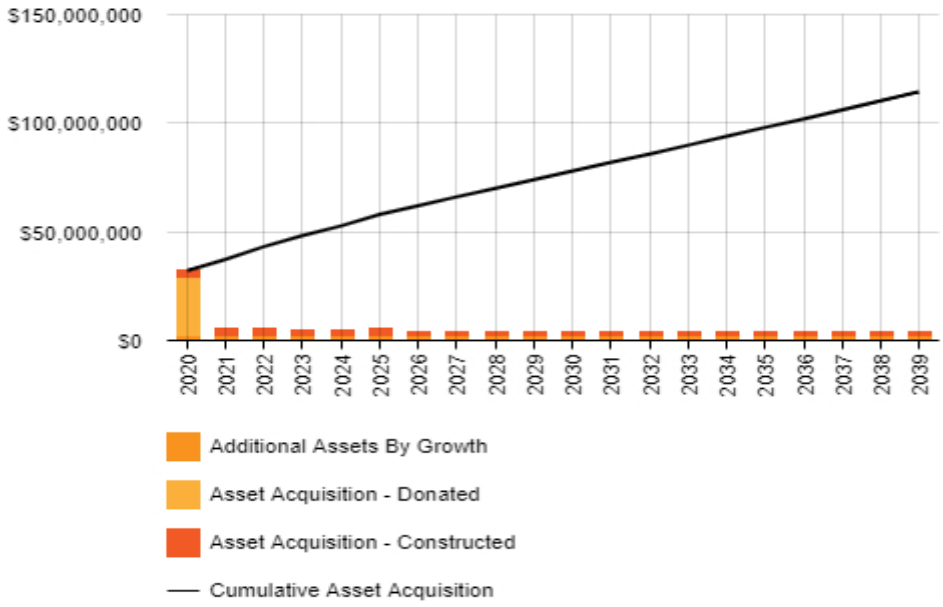
Figure 5.5.2.1 excludes cost of donated assets and assets by growth.

It is the forecast that projects: Greater Adelaide Cycleway, revitalisation of Eighteenth Street*, Dalkeith Road rehabilitation*, Tiver Road-Bentley Road* upgrade would be implemented in 2022 to 2025 where the peaks are shown in the above Figure 5.5.2.1. However, there is no planned budget for the latter three projects* in the LTFP. Consideration of allocation of additional new capital funding from within $3M overall New Capital funding allocation will be required at that time.

Demand for upgrade and new assets increases due to population growth and to meet service deficiencies and other environmental needs. Therefore, Council may need to upgrade and create new assets to meet service demands in addition to receiving contributed assets from new land developments and infrastructure deeds.

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. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.2.

Figure 5.5.2.2: Acquisition Summary



Note: All figure values are shown in 2021 dollars.

Expenditure on new assets and services in the capital works program will be accommodated in the Council's LTFP, but only to the extent that there is available funding. Grant funding options are to be explored for implementation of new and upgrade asset projects.

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.

Currently, new assets are created as a result of the Council's upgrading or constructing new assets to manage growth and from contributed assets associated with land developments (e.g. Gawler East Link Road, Murray Street Upgrades and various assets in new housing estates).

Land development assets by growth and donated assets are not accounted for capital costs (i.e. vested in the Council) however O&M costs are accounted for. Growth assets are assumed to be associated with general population growth at 1% (i.e. road, footpaths and kerb & gutter etc.).

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.

Currently, the Council has not identified any transport assets for disposal.

Table 5.6: Assets Identified for Disposal

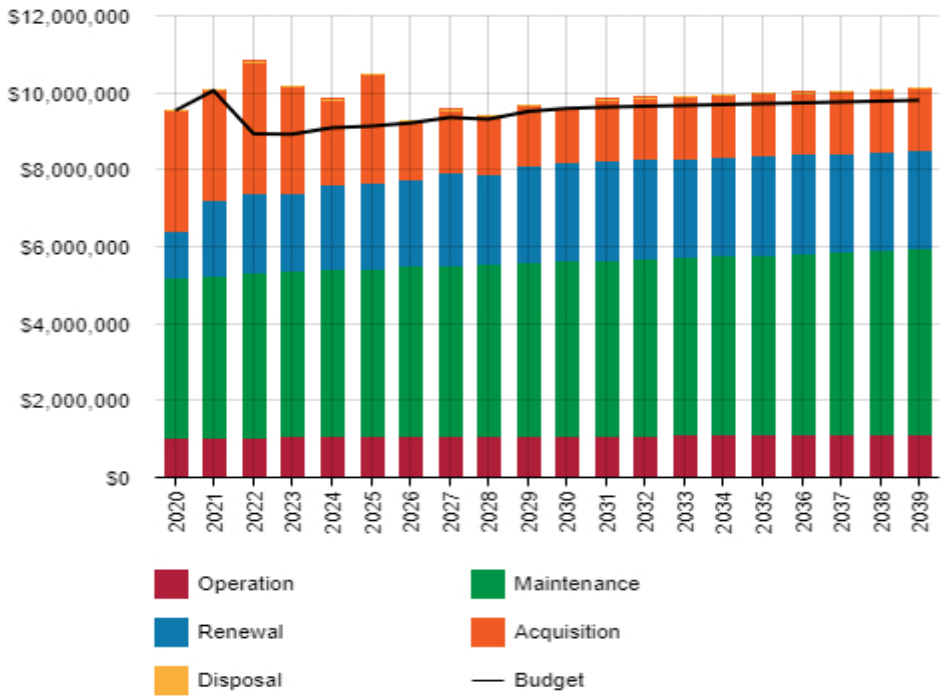
Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Not identified				

5.7 Summary of Asset Forecast Costs

The financial projections from this asset plan are shown in Figure 5.7. 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 5.7: Lifecycle Summary



Note: All figure values are shown in 2021 dollars.

In 2021, Council has planned for implementing Stage 1 of Greater Adelaide Cycleway link, however, O&M cost has not been accommodated in the LTFP. Operation and maintenance (O&M) costs are increasing with the forecast asset acquisitions and upgrades over the years. This is due to the need for additional maintenance cost associated with projected new assets creation by Council. The O&M cost for assets contributed by land developers associated with growth is already included in the LTFP however further consideration is required for O&M costs associated with acquisitions and upgrades.

In the LTIAMP, there are two types of capital works identified as non-discretionary and discretionary. The forecast annual average increase of O&M cost for non-discretionary assets is $19,332 out of total annual average increase of $104,929.

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'[8].

An assessment of risks[9] 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 defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Bridge & culvert structure	Structure collapse/ damage at flooding	Closed to users
Sealed road network	Loss of sealed surface, pavement failures such as deep potholes and depressions	Reduction in vehicle travel speed No through access on some roads in the network
Unsealed road network	Loss of gravel pavement	Loss of all-weather access on some roads in the network
Footpath network	Structural defects/ failure	Injury from trip on footpath

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 to manage risks.

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.

[8] ISO 31000:2009, p 2
[9] The Council's Corporate Risk Management Framework

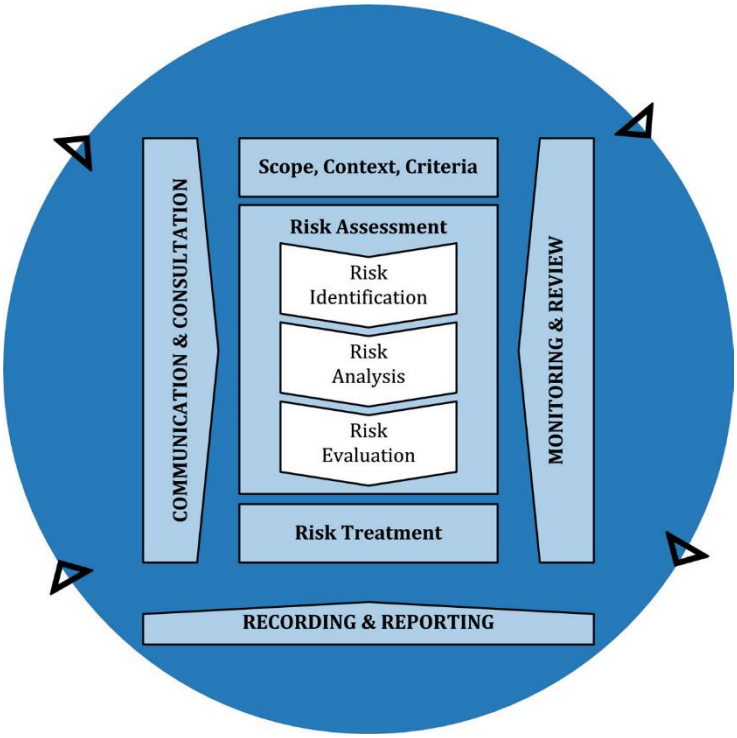


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

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[10] 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.

Assets are monitored for condition on a four year cyclic program. Routine inspections are undertaken for assessing defects and emergency inspections are done for critical assets for asset failure/collapse after extreme events occur.

The risk management process is aligned with ISO 31000 Risk management – Principles and guidelines. It involves risk identification, risk analysis, risk evaluation, risk treatment plans, monitoring and review.

Following the above process, Council will develop a detailed Asset Risk Register.

[10] The Council's Corporate Risk Management Framework

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Murray Street South culvert	Failure due to deterioration	H	Effect structural repairs	L	$225,000
Murray Road ford	Risk to users as no safety fences	H	Safety improvement audit & consider findings	L	$25,000 (plus works once identified)
Clonlea Reserve vehicle access bridge	Bridge deck may collapse	H	Effect deck and abutment repairs	L	$60,000

Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented. Noting all projects listed are included in the 2021/22 Annual Budget

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 is built on aspects such as response and recovery planning, financial capacity, climate change 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

Threat / Hazard	Current Resilience Approach
Local roads, Shared path along river corridor and footbridges would be damaged due to river flooding at a storm event exceeding 20 year ARI	Temporary closure and implement Council's Emergency Management Plan. Inspect, repair/ renew & reopen. Path and bridges would not be available for a prolonged period.
Asset' structural failure	Temporary closure
Funding shortage	Reprioritise work or reduce services
Climate Change	Adopt a circular economy approach Use Reconophalt for resurfacing sealed roads Use recycled materials for re-sheeting unsealed roads. Support innovative sustainable products

6.4 Service and Risk Trade-Offs

The decisions made in adopting Transport Asset Management Plan are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

We currently do **not** allocate enough funding in Council's LTFP (i.e. black budget line in the above figure) budget to provide these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

Key underfunded projects:

- New footpath and kerb & water table construction,
- Upgrade of old road pavements that do not have engineered structures (e.g. Nineteenth Street, Dalkeith Road & Chamberlain Road)

The current level of planned expenditure in the LTFP is below the required expenditure for all new and upgrade work identified in the LTIAMP. Works and services that cannot be provided under current levels of expenditure include:

- New footpath construction over $350,000 per year (i.e. approx. 1.6km),
- New kerb and water table construction over $223,000 (i.e. approx. 1km),
- Completion of walking and cycling network linkages within next 10 years,

Key unfunded projects are:

- Upgrade Goose Island footbridge,
- Sealing urban unsealed roads,
- Revitalisation of Eighteenth Street,
- Tiver Road and Bentley Road upgrade,
- Calton Road, Cheek Avenue and One Tree Hill Road Upgrade,
- Works that have not ben included in the LTIAMP unless reprioritise planned work including contributions to Infrastructure Deeds.

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:

- Inadequate capacity of the walking path network to meet expanding needs
- Pressure and over use of existing assets which may need early renewals,
- New assets may have lower service levels,
- Maintenance services and frequencies may be low in long term,
- Community expectation of new footpaths and facilities with high level of services are not met resulting increase of complaints, and
- General deterioration of assets' service,

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:

- Increase in the deterioration of transport assets and reduce level of service,
- Lead to community dissatisfaction and Council subject to public criticism and mistrust,

- Increase in future cost on asset renewal and maintenance,
- A negative impact on the quality of community life, local businesses, economy and employments within Council area, and
- Ramification for public safety.

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 all the information presented in the previous sections of this Transport Asset Management Plan. The financial projections will be improved in the next update to the Council's Transport Asset Management Plan as further information becomes available in the future on desired levels of service and current and projected future asset performance.

7.1 Financial Statements and Projections

7.1.1 Sustainability of service delivery

There are two key financial indicators of sustainable service delivery that are considered in the Asset Management Plan for this service area. The two financial indicators are the following:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[11] 100.0%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years Council plans to allocate 100.00% of the funds required for the optimal renewal of its transport 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 Asset Management Plan 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 the Council's Long Term Financial Plan and Long Term Infrastructure and Asset Management Plan 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 costs over the 10 year planning period is $7,530,629 average per year. This is based on the projected projects in LTIAMP.

The proposed (budget) operations, maintenance and renewal funding is $7,425,700 on average per year giving a 10 year funding shortfall of $104,929 per year. This indicates that 98.61% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. However, shortfall of funding for non-discretionary assets is $19,332 on average per year. Note, these calculations exclude asset acquisition costs.

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 Asset Management Plan and ideally over the 10 year life of the Long Term Financial Plan.

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

Table 7.1.2 shows the forecast costs (outlays) for the 10 year long-term financial plan.

Forecast costs are shown in 2021 dollars.

[11] AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Table 7.1.2: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2020	3138000	1037417	4169668	1192000	0
2021	2872000	1044150	4217997	1951000	0
2022	3429000	1050907	4267636	2067000	0
2023	2760000	1057484	4302833	2038000	0
2024	2233000	1063871	4345478	2185000	0
2025	2804000	1068581	4375520	2214000	0
2026	1495000	1075488	4430165	2256000	0
2027	1643000	1078850	4453269	2382000	0
2028	1513000	1082870	4484432	2314000	0
2029	1561000	1085793	4507878	2507000	0
2030	1375000	1089570	4539906	2568000	0
2031	1600000	1093136	4570335	2570000	0
2032	1600000	1097085	4602294	2570000	0
2033	1600000	1101034	4634253	2570000	0
2034	1600000	1104983	4666212	2570000	0
2035	1600000	1108932	4698171	2570000	0
2036	1600000	1112881	4730130	2570000	0
2037	1600000	1116830	4762089	2570000	0
2038	1600000	1120779	4794048	2570000	0
2039	1600000	1124728	4826007	2570000	0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and LTFP.

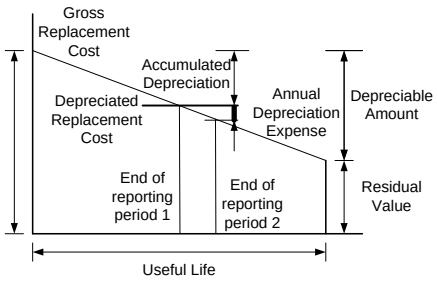
The financial strategy of the entity determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. The assets are valued at fair value at cost to replace service capacity.

Current (Gross) Replacement Cost	$201,704,676
Depreciable Amount	$201,704,676
Depreciated Replacement Cost[12]	$129,156,525
Annual Depreciation	$3,131,831



[12] Also reported as Written Down Value, Carrying or Net Book Value.

7.3.2 Valuation forecast

Asset values are forecast to increase as additional assets are added to 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. Any additional assets will also add to future depreciation forecasts.

It is expected new assets from land developments will continue to be vested in the Council over the next 20-30 years based on population growth associated with the 30 Year Plan for Greater Adelaide and available residential land supply.

7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this Asset Management Plan are in Table 7.4.1.

Table 7.4.1: Key Assumptions

Assumption	Description
Indexation Rates	The Local Government Price Index (LGPI) and other indexation factors relevant for each asset class are used to determine current cost.
Financial values	Current day dollars
Renewal Cost	Forecasts have been made by professional judgement.
O&M Cost forecast	The current operations and maintenance budgets have been used and only increased in the forecast relative to the acquisition of new assets.
Asset Growth	The relationship between development growth and associated increases in the asset stock.
Level of Service	Current infrastructure service levels will remain for the life of the Plan.
Funding	Indicated capital replacement/renewal funding is provided for within the Long Term Financial Plan.
Useful Life	The average useful lives of the asset groups based on current local knowledge and experience and historical trends.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan 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[13] in accordance with Table 7.5.1.

[13] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

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 AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	B	Professional Judgement
Growth projections	B	From 2016 Census
Acquisition forecast	B	From LTFP & Gawler growth
Operation forecast	B	From recent budgets and & Gawler growth analysis
Maintenance forecast	B	From recent budgets and & Gawler growth analysis
Renewal forecast		
- Asset values	B	Asset Register is updated annually
- Asset useful lives	B	Reviewed periodically
- Condition modelling	B	Audit periodically
Disposal forecast	E	Professional Judgement

The estimated confidence level for and reliability of data used in this AM Plan is considered to be reliable.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[14]

8.1.1 Accounting and financial data sources

Council uses Civica Authority software as its corporate Accounting/Financial system. There is currently no automated integration between the Civica Authority software and the AssetMaster software used for Asset Management purposes.

The Australian Accounting Standards AA116 and the Local Government (Financial Management) Regulations 2011 provide the statutory benchmark against which Council reports on asset accounting.

The chart of account structure used within the general ledger (i.e. work orders) is designed to facilitate the ease of data extraction required for internal and statutory financial reporting. Currently the existing structure meets the Council's financial reporting needs (including those relating to asset accounting). This structure will be reviewed periodically to ensure that it appropriately meets Council's future financial reporting needs.

The current capitalisation threshold for infrastructure assets is $10,000 in accordance with Council's Asset Capitalisation Policy. The threshold value is reviewed on three yearly basis.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. One of the Asset Management Information Systems: AssetMaster software is used by the Council for management of its infrastructure (transport and stormwater) asset data, ESRI ArcGIS Pro for asset mapping and Civica Authority for customer request management.

AssetMaster manages physical and financial asset data including the physical attributes, repair activities carried out on assets, condition and valuation. AssetMaster provides reports on data that is required in order to plan renewal works programs, value assets and forecast depreciation.

When there is a change in asset information, the relevant data is updated into AssetMaster. When new assets are created asset details are recorded periodically in AssetMaster so that at the end of financial year all created assets are registered in AssetMaster for financial valuation.

Currently, Transport Assets are recorded in AssetMaster.

Asset management process flow chart is given in Appendix G.

8.2 Improvement Plan

It is important that an entity recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. In March 2021, an external consultant conducted an internal audit on Council's asset management systems and processes. Responding to the audit findings, Council has prepared an action plan. The improvement plan generated from this Asset Management Plan and from the findings of the Internal Audit is shown in Table 8.2.1

[14] ISO 55000 Refers to this the Asset Management System

Table 8.2.1: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Implement Internal Audit Report Action Plan (CM Reference: CR21/57866)	MIES	SAIE , WHS&RMO & Finance	1-3 year
2	Section 3.5 – Review and agree to an affordable Customer Level of Service as a part of community consultation of AMP	MIES	SAIE & Finance	0-1 year
3	Section 4.3 – Demand Management Plan Summary to be reviewed based on Land Development Register and update LTIAMP	MIES	SAIE & Finance	Annually
4	Land Development Register	MIES	TLAP	Annually
5	LTIAMP	MIES	TLAP	Annually
6	Section 6.2 - Risk Assessment to be reviewed and Asset Risk Register to be developed	MIES	SAIE , WHS&RMO & Finance	4 year
7	Section 6.3 – Infrastructure Resilience Approach to be reviewed	MIES	SAIE & Finance	4 year
8	Review asset renewal ranking criteria and new asset priority ranking criteria	MIES	SAIE	4 year
9	Value assets annually with a book value adjustment and periodically with a unit rate review consistent with financial auditor requirements	MIES	SAIE	Annually
10	Section 7.1 – Financial Statements and projections to be revised based on asset cost updates after periodical asset financial valuation	MIES	SAIE & Finance	Annually
11	Review capital expenditure during the Council annual budget preparation and amend to recognise any changes in service levels and/or resources available to provide those services	MIES	SAIE	Annually
12	Review transport assets mapped on the corporate GIS system and update layer data where required	MIES	TLAP	Annually
13	Schedule next transport assets condition audit based on a four year cycle	MIES	SAIE	4 yearly
14	Schedule next update the Council's Transport Asset Management Plan based on a four year cycle	MIES	SAIE	4 yearly

Note: CEO – Chief Executive Officer, MIES – Manager Infrastructure and Engineering Services, TLAP – Team Leader Asset Planning, SAIE – Senior Assets & Infrastructure Engineer, WHS&RMO – Work Safety Health & Risk Management Officer.

The previous Improvement Plan outlined in the previous Transport Asset Management Plan adopted in 2013 by the Council identified a number of items for investigating. As an update on progress, the below Table 8.2.2 provides an update on each of the items identified in that Plan for information purposes and to inform the revised Improvement Plan shown in Table 8.2.1 above.

Table 8.2.2: Implementation Progress of 2013 Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline	Progress Update
1	Section 3.3 – Current levels of service to be developed.	Engineering	Staff Time	June 2015	Will be complete following customer survey in this AMP
2	Section 3.4 – Desired levels of service to be developed.	Engineering	Staff Time	June 2016	Will be complete following customer survey in this AMP
3	Section 4.1 – Review of development needs associated with the rate and location of growth.	Planning	Staff Time	June 2016	Complete
4	Section 4.3 – Demand management summary table to be reviewed.	Engineering	Staff Time	June 2015	Complete
5	Section 5.1.1 – Continue to collect and update asset data.	Engineering	Staff Time	Ongoing	Refer latest Improvement Plan. Some asset data collected in GIS. Condition audit identified as required
6	Section 5.1.2 – Asset capacity and performance table to be reviewed.	Engineering	Staff Time	June 2015	Complete
7	Section 5.1.3 – Undertake condition assessment of transport assets to enable improved information for future planning and development of maintenance and Capital programs.	Engineering	Staff Time	June 2015	Refer latest Improvement Plan. Some asset data collected in GIS. Condition audit identified as required
8	Section 5.2 – Risk management plan to be developed.	CEO	Staff Time	June 2016	Refer latest Improvement Plan. Some improvements have been made.
9	Section 5.3.1 & Appendix A – Maintenance response levels of service to be developed.	Engineering	Staff Time	June 2014	Complete
10	Section 5.4.1 – Renewal priority criteria to be developed.	Engineering	Staff Time	June 2014	Complete
11	Section 5.5.1 – Asset priority ranking criteria to be reviewed.	Engineering	Staff Time	June 2014	Complete
12	Section 3 – Carry out consultation to ascertain the community's service needs and preferences and confirm target levels adopted.	CEO	Staff Time	June 2015	Will be complete following customer survey in this AMP

13	Section 3 – Review of the customer request report available in Authority.	DPI/DCCS	Staff Time	June 2015 then annually	Complete and updated into Engineering Investigations Register
14	Section 3.2 – Review of legislative requirements to ensure Council's compliance with the latest legislations and regulations.	DCCS	Staff Time	June 2016	Complete
15	Section 5 - Review of useful life of all transport assets based on real time assessment of asset deterioration.	Engineering	Staff Time	June 2015	Refer latest Improvement Plan. Some asset data collected in GIS. Condition audit identified as required
16	Section 7.1 – Review capital expenditure threshold values for transport assets.	Finance	Staff Time	Annually	Complete
17	Section 7.1 – Review of financial reporting systems to determine whether any changes are required to meet statutory requirements.	Finance	Staff Time	June 2015	Complete
18	Section 7.2 – Review of current asset management systems for improvement, systems integration and expansion.	Engineering	Staff Time	June 2016	Complete
19	Section 8.2 – Completing the improvement plan by November 2016.	All	Staff Time	Nov 2016	Complete

8.3 Monitoring and Review Procedures

This AM Plan 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 AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the LTFP Plan or will be incorporated into the LTFP once completed.

The AM Plan has a maximum life of four years and is due for complete revision and updating within two years of each Council election in accordance with legislative requirements of the Local Government Act 1999.

8.4 Performance Measures

The effectiveness of this Asset Management Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this Asset Management Plan 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 take into account the 'global' works program trends provided by the Asset Management Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
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- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Gawler Community Plan 2030+
- Town of Gawler Budget and Business Plan 2020/21
- Town of Gawler Long Term Financial Plan 2020-2029
- Town of Gawler Long Term Infrastructure and Asset Management Plan 2019-2028

10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions and Source

There are new and upgrade asset projects that have been forecasted during this AM Plan period. These include road and bridge structure upgrades as well as new bike and pedestrian paths. Also there are new assets received from land developments associated with growth. The delivery and timing of some new and upgrade works is based on the Gawler East Infrastructure Deed, Southern Urban Area Deed and external funding availability.

A.2 – Acquisition Project Summary

The main new and upgrade projects include the Gawler East Link Road and associated works, Murray Street Stage 7, Revitalisation of Cowan Street and Eighteenth Street, Rehabilitation of Dalkeith Road, Reconstruction of Jane Street, Tiver Road and Bentley Road works, Sealing of Urban Unsealed Roads and Road Safety Improvements.

A.3 – Acquisition Forecast Summary

Using NAMS+ Outputs, Summary for Acquisition as follows.

Table A3 - Acquisition Forecast Summary

Year	Constructed $	Donated $	Growth $
2020	3138000	GELR - 27000000	2017047
2021	2872000	0	2307217
2022	3429000	0	2330289
2023	2760000	0	2353592
2024	2233000	0	2377128
2025	2804000	0	2400900
2026	1495000	0	2424909
2027	1643000	0	2449158
2028	1513000	0	2473649
2029	1561000	0	2498386
2030	1375000	0	2523370
2031	1600000	0	2548603
2032	1600000	0	2574089
2033	1600000	0	2599830
2034	1600000	0	2625828
2035	1600000	0	2652087
2036	1600000	0	2678608
2037	1600000	0	2705394
2038	1600000	0	2732448
2039	1600000	0	2759772

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions and Source

Operation and maintenance cost forecast analysis has been completed for the Gawler East Link Road and contributed assets from new land developments by the Council Staff according to the expected timing of asset creation.

B.2 – Operation Forecast Summary

Using NAMS+ Outputs, Summary for Operation is as follows.

Table B2 - Operation Forecast Summary

Year	Operation Forecast $	Additional Operation Forecast $	Total Operation Forecast $
2020	1037417	5335	1037417
2021	1038815	4882	1044150
2022	1040690	5829	1050907
2023	1041438	4692	1057484
2024	1043133	3796	1063871
2025	1044047	4767	1068581
2026	1046187	2542	1075488
2027	1047007	2793	1078850
2028	1048234	2572	1082870
2029	1048585	2654	1085793
2030	1049708	2338	1089570
2031	1050937	2720	1093136
2032	1052166	2720	1097085
2033	1053395	2720	1101034
2034	1054624	2720	1104983
2035	1055853	2720	1108932
2036	1057082	2720	1112881
2037	1058311	2720	1116830
2038	1059540	2720	1120779
2039	1060769	2720	1124728

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions and Source

Operation and maintenance cost forecast analysis has been completed for the Gawler East Link Road and contributed assets from new land developments by the Council Staff according to the expected timing of the asset creation.

C.2 – Maintenance Forecast Summary

Using NAMS+ Outputs Summary for Maintenance

Table C2- Maintenance Forecast Summary

Year	Maintenance Forecast $	Additional Maintenance Forecast $	Total Maintenance Forecast $
2020	4169668	21338	4169668
2021	4196658	19530	4217997
2022	4226768	23317	4267636
2023	4238648	18768	4302833
2024	4262525	15184	4345478
2025	4277382	19067	4375520
2026	4312960	10166	4430165
2027	4325898	11172	4453269
2028	4345889	10288	4484432
2029	4359046	10615	4507878
2030	4380459	9350	4539906
2031	4401538	10880	4570335
2032	4422617	10880	4602294
2033	4443696	10880	4634253
2034	4464775	10880	4666212
2035	4485854	10880	4698171
2036	4506933	10880	4730130
2037	4528012	10880	4762089
2038	4549091	10880	4794048
2039	4570170	10880	4826007

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

The Renewal Forecast has been prepared in accordance with the outcomes of the Council's Transport and Bridge Assets condition audits completed in 2017 and on-going risk management analysis.

D.2 – Renewal Project Summary

Resurfacing sealed roads, re-sheeting unsealed roads, footpath renewals, kerb & water table repairs and bridge structural repairs.

D.3 – Renewal Forecast Summary

Using NAMS+ Outputs Summary for Renewal

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast $	Renewal Budget $
2020	1192000	1192000
2021	1951000	1951000
2022	2067000	2067000
2023	2038000	2038000
2024	2185000	2185000
2025	2214000	2214000
2026	2256000	2256000
2027	2382000	2382000
2028	2314000	2314000
2029	2507000	2507000
2030	2568000	2568000
2031	2570000	2570000
2032	2570000	2570000
2033	2570000	2570000
2034	2570000	2570000
2035	2570000	2570000
2036	2570000	2570000
2037	2570000	2570000
2038	2570000	2570000
2039	2570000	2570000

Appendix E Disposal Summary

E.1 – Disposal Forecast Assumptions and Source
Currently, Council has not identified any significant asset disposals.

E.2 – Disposal Project Summary
Council has not identified any asset for disposal.

E.3 – Disposal Forecast Summary
Using NAMS+ Outputs Summary for Disposal

Table E3 – Disposal Activity Summary

Year	Disposal Forecast $	Disposal Budget $
2020	0	0
2021	0	0
2022	0	0
2023	0	0
2024	0	0
2025	0	0
2026	0	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	0	0
2034	0	0
2035	0	0
2036	0	0
2037	0	0
2038	0	0
2039	0	0

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Appendix F Budget Summary by Lifecycle Activity

The following budget summary is based on the Council's current Long Term Financial Plan. It is shown in current dollars. This information is the basis of the Planned Budget used in the Lifecycle Model for this Asset Management Plan.
According to LTFP Council has an annual financial capacity of $3m only for new acquisitions for all asset classes across the Council. It is assumed that only $1,600,000 is available for new transport assets acquisitions/upgrades. However, there is a flexibility of allocating $3m on any asset class based on the priority of works for any given financial year.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2020	3138000	1037417	4169668	1192000	0	9537085
2021	2872000	1038815	4196658	1951000	0	10058473
2022	1600000	1040690	4226768	2067000	0	8934458
2023	1600000	1041438	4238648	2038000	0	8918086
2024	1600000	1043133	4262525	2185000	0	9090658
2025	1600000	1044047	4277382	2214000	0	9135429
2026	1600000	1046187	4312960	2256000	0	9215147
2027	1600000	1047007	4325898	2382000	0	9354905
2028	1600000	1048234	4345889	2314000	0	9308123
2029	1600000	1048585	4359046	2507000	0	9514631
2030	1600000	1049708	4380459	2568000	0	9598167
2031	1600000	1050937	4401538	2570000	0	9622475
2032	1600000	1052166	4422617	2570000	0	9644783
2033	1600000	1053395	4443696	2570000	0	9667091
2034	1600000	1054624	4464775	2570000	0	9689399
2035	1600000	1055853	4485854	2570000	0	9711707
2036	1600000	1057082	4506933	2570000	0	9734015
2037	1600000	1058311	4528012	2570000	0	9756323
2038	1600000	1059540	4549091	2570000	0	9778631
2039	1600000	1060769	4570170	2570000	0	9800939

Appendix G Asset Management Process Flow Chart