



TRANSPORTATION ASSET MANAGEMENT PLAN



ROAD
WORK



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1. EXECUTIVE SUMMARY

Context

The City of Adelaide Strategic Plan 2016 - 20 seeks to deliver outcomes for the city and its community in alignment with the following four themes:

- Smart;
- Green;
- Liveable; and
- Creative.

As a result Council will undergo considerable change over the next 10 years with Council driving an activation of public spaces, significant increases in residents and people visiting the city resulting in greater residential density, demand on open space and connectivity with an emphasis on pedestrians, cyclists, and public transport.

This Asset Management Plan (AM Plan) is designed to ensure the essential transportation infrastructure required to provide these services are delivered now and into the future to underpin the Adelaide economy, lifestyle, experience, and way of life. This AM Plan also assists Council to meet financial sustainability obligations under the *Local Government Act*.

The Transportation Asset Class provides services to the entire Adelaide City Council (Council) area by allowing the safe and efficient movement of people and vehicles.

The Transportation Network comprises:

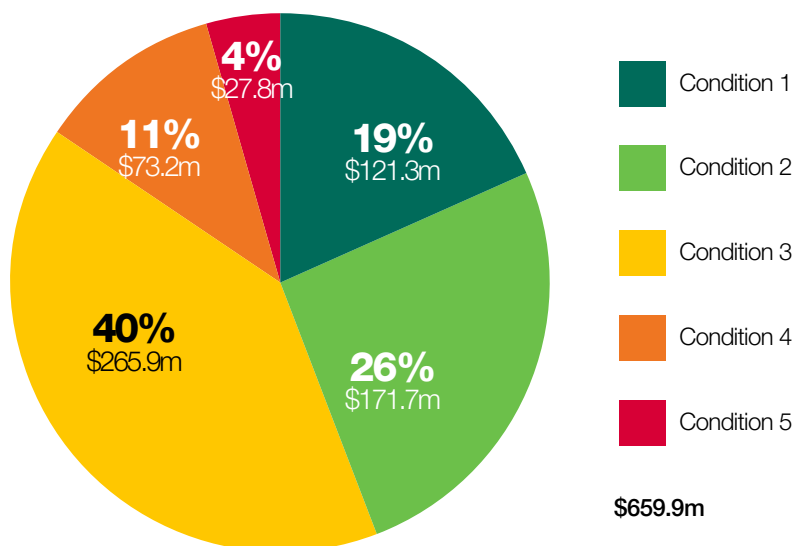
- Roads (129 kilometres);
- Bridges (five road bridges, three major footbridges, and 38 minor footbridges);
- Footpaths (288 kilometres);
- Kerb and water table (260.5 kilometres); and
- Traffic signals (131 sites).

The Transportation Asset Class has a replacement value of \$659.9 million.

Within the next 30 years, it is expected that there will be an additional 100,000 people visiting the city per day which will put additional strain on the entire transportation network. In an effort to keep the management of the network sustainable, the transportation network will be more focussed on facilitating pedestrian movements as well as increasing bicycle and public transport infrastructure as a measure to reduce the overall use of private transportation vehicles within the city.

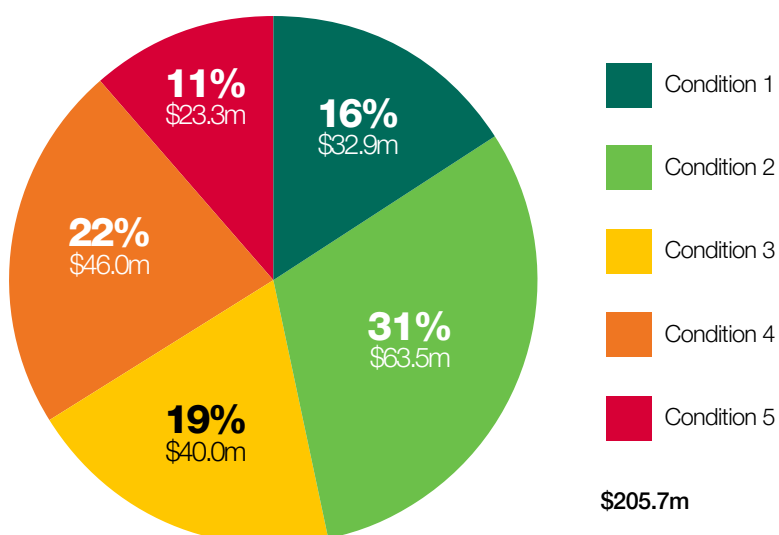
The transportation network's health as a whole is in reasonable condition with only 4% of the network in very poor condition (as shown in the figure below).

Condition of Transportation Network



However, the largest asset base within the Transportation Asset Class, the road network, is in the worst condition. The road network has much higher percentages of the asset base rated as poor, Condition 4 (22%) or very poor as Condition 5 (11%) compared to the Transportation Asset Class as a whole (see the following figure).

Condition of Road Network



Given the importance of the road network and the future demands identified, maintaining, and upgrading this asset is imperative to ensure it can provide the desired levels of service for future generations.

This AM Plan will help council to forecast the challenges ahead, to improve management of the transportation infrastructure, and to ensure that all operations, maintenance, and capital renewals are undertaken in the most cost effective manner whilst providing a specific level of service.

The following processes have been undertaken in the development of this AM Plan:

- Improving asset knowledge so that data accurately records the asset inventory, how assets are performing, and when assets are not able to provide the required service levels;
- Modelling future asset expenditure requirements;
- Improving our efficiency in operating, maintaining, renewing, and replacing existing assets to optimise lifecycle costs;
- Identifying and managing risks associated with providing services from infrastructure;
- Making trade-offs between service levels and costs to ensure that the community receives the best return from infrastructure investment;
- Consulting with the community to ensure that services and costs best meet community needs and are affordable;
- Identifying assets surplus needs and disposal opportunities to reduce costs; and
- Seeking additional funding from governments and other bodies to better reflect a 'whole of government' funding approach to infrastructure services.

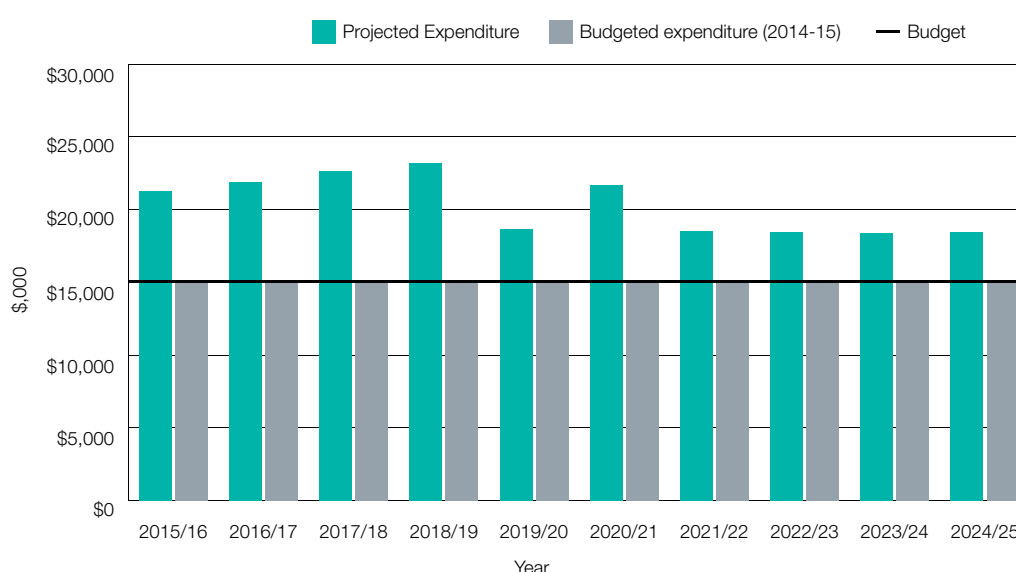
What does it cost?

The desired outlays necessary to provide the services covered by this AM Plan, includes operations, maintenance, renewal, and upgrade of existing assets. Over the 10-year planning period this amounts to \$203.1 million or \$20.3 million on average per year.

A comparison of the expenditure required for the services proposed in the AM Plan compared with 2014 - 15 funding is shown in the graph below. 2014 - 15 funding levels will contribute \$150.8 million or \$15.1 million on average per year or 74% of the cost of the proposed level of service. The shortfall is \$5.2 million on average per year. Alternatively, this can be expressed as Council owning and operating 26% more assets than it can sustain at the 2014 - 15 funding levels.

The improvement in asset data in this revision of the AM Plan has enabled a more accurate prediction of the funding levels required to sustain service levels.

Figure 8: Projected and LTFP Budgeted Renewal Expenditure



A number of key strategies are proposed in this AM Plan, to achieve the desired service levels sustainably into the future. These include the renewal of all Condition 4 and 5 assets, within five years for footpath, kerb and water table, bridge, and traffic signal assets, and reduce the percentage of Condition 4 and 5 roads in the network to 4% over a 10-year period. Increased maintenance funding has also been proposed in the medium term, along with a shift from reactive maintenance to planned maintenance practices. This will result in proactive identification and response to defects on the network to ensure assets don't fail prematurely and are maintained at the desired service level at minimum cost.

What we will do

We will provide an AM Plan to meet financial sustainability obligations under the *Local Government Act* and inform the development of a corresponding Long Term Financial Plan (LTFP). The plan includes strategies to operate, maintain, and renew roads, footpaths, kerb and water table, bridges, and traffic signals at the optimum whole of life cost to best meet service levels.

Asset renewals will be coordinated with key infrastructure upgrades, including projects identified in *The City of Adelaide Strategic Plan 2016 - 20* such as the joint State Government / Council redevelopment of Currie-Grenfell streets as a public transport boulevard.

What we cannot do

Based on 2014 - 15 funding levels, there were insufficient funds to provide all services at the desired service levels.

However, in February 2016, the funding shortfall shown in the projected and budgeted expenditure graph was presented to Council. Council subsequently agreed to fully fund the Transportation Asset Class, adopting the funding requirements outlined in this AM Plan into the 2016 - 17 LTFP. If Council had not increased funding levels, the result would have been a progressive reduction in service levels provided by the Transportation Asset Class. In the next update to this AM Plan, the 2016 - 17 LTFP will be included to show that the Transportation Asset Class expenditure requirements are fully funded.

It is important to note this AM Plan does not address the upgraded and new infrastructure initiatives associated with *The City of Adelaide Strategic Plan 2016 - 20* (i.e. greening projects, cycle link projects, and the roll-out of the *Adelaide Design Manual (ADM)*).

Managing the risks

There are key risks associated with the ongoing management of the Transportation Asset Class, if full funding is not provided:

- Not meeting community expectations for services;
- Reduction in asset condition and hence service levels, requiring excessive investment in later years (intergenerational inequity);
- Not being able to manage the impact of increased public transport network and traffic on road and footpath network;
- Increased service standards through the ADM are not fully known and currently unfunded;
- Council priorities identified in *The City of Adelaide Strategic Plan 2016 - 20* and corresponding pressure on funding levels;
- Increased city visitors and resulting increased maintenance and operating costs; and
- Not all poor condition assets will be immediately improved, due to the extent of the backlog from previous funding levels.

To manage these risks we will:

- Consult with the community, to understand their performance needs;
- Improve management and prioritisation of capital renewal and upgrade projects and efficiency of maintenance programs;
- Regularly monitor asset condition and update valuations to predict investment levels required to operate, maintain, and renew assets in the long term to meet community needs;
- Undertake pilot projects incorporating ADM materials to assess cost impacts;
- Coordinate asset renewals with other Council enhancement programs (e.g. greening, smart) where relevant;
- Effectively liaise / negotiate with the State Government on public transport planning and project funding within the city (including bus lanes, light rail, O-Bahn);
- Investigate alternative cost effective treatments and implement preventative and proactive maintenance programs to maximise the useful life of the assets; and
- Focus renewal investment based on risk and asset hierarchy.

Confidence levels

This AM Plan is based on a high level of confidence in road, kerb and water table, bridges, and traffic signals data. There is a lower level of confidence in the Footpath Asset Class data. This confidence will improve following an asset audit to be completed in 2016. The next revision to the AM Plan will incorporate this improved asset data.

The next steps

The actions resulting from this AM Plan are to:

- Identify opportunities to coordinate infrastructure renewals with enhancement projects (including greening and smart initiatives);
- Review of capital renewal and maintenance strategies for the Transportation Asset Class to determine optimal renewal intervention points to provide services at lowest lifecycle costs;
- Review customer and technical service levels, after public consultation, to ensure that service delivery is meeting community expectations within funding availability;
- Complete a new condition audit for the footpath (street footpaths only);
- Implement inspection, maintenance, and reporting activities outlined in the updated Operational and Maintenance Plan for the Transportation Asset Class;
- Maintain an annual review of the Transportation AM Plan incorporating an update of service level performance, financial projections, and risk;
- Undertake a review of unit rates and valuation of major infrastructure assets for the Transportation Asset Class including sensitivity analysis and comparisons with actual project costs;
- Service levels and unit rates will need to be updated if the ADM is approved by Council;
- Incorporate off street car parking facilities and traffic control devices in next revision of AM Plan; and
- Update the AM Plan to include any gifted assets.

The Corporation have already undertaken the following improvements in 2015 - 16:

- Review of customer satisfaction levels;
- Review of asset condition, renewal, and maintenance strategies for roads;
- Bridge condition audits and valuations; and
- Commenced footpath condition audit.

Questions you may have

What is this plan about?

This plan covers the transport related infrastructure within the Council area that enable all users to enjoy a pleasant, safe, and inviting environment. More specifically, these assets include roads, footpaths, bridges, kerb and water table, and traffic signals.

What is an AM Plan?

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

An AM Plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner. The plan defines the services to be provided, how the services are provided, and what funds are required to provide the services.

Why is there a funding shortfall?

Assets deteriorate over time and the level of service they provide decrease and maintenance costs increase. Assets need to be periodically renewed to maintain required service levels for present and future users.

Whilst funding levels in 2014 - 15 were insufficient to provide existing services at current levels into the future, Council committed to higher funding levels in 2015 - 16. If Council continue to meet the funding requirements outlined in this AM Plan, as per 2015 - 16, then service levels will be met.

What options do we have?

Council have the following options available:

1. Continue to fund asset renewal, maintenance, and operations as informed by this AM Plan; or
2. Accept a reduced level of service as the transportation assets deteriorate due to funding shortfall.

What happens if we don't fully fund assets?

If Council do not fully fund assets:

- Community satisfaction in asset service levels will decrease;
- Efficiency in operating, maintaining, renewing, and replacing existing assets will reduce, which impacts long term financial sustainability;
- Less funds will be available in the longer term for investment in new or upgraded infrastructure;
- Trade-offs between service levels and costs will be required, including adjustment to maintenance intervention levels and response times; and
- Increased public liability and reputational risks associated with providing infrastructure.

What can we do?

Council will continue to develop options, costs, and priorities for future transportation services, consult with the community, plan future services to best match the community service needs with its ability to pay. Council will always seek to maximise overall community benefit against cost.

What can you do?

We will be pleased to consider your thoughts on issues raised in this plan. Any suggested change to the mix of services or levels of service to better match community needs within existing funding is welcome.

2. INTRODUCTION

2.1 Background

Council's transport network has resulted from major investment by the community over a long period of time and provides a valuable service to the city. The assets have been acquired and developed over several generations and must be properly maintained and developed to continue to provide adequate service and benefits for generations in the future. This AM Plan demonstrates Council's responsive management of transportation assets (and services provided from these assets), compliance with regulatory requirements, and proposed funding requirements to provide the required levels of service.

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

The AM Plan follows the format recommended in Section 4.2.6 of the *International Infrastructure Management Manual*¹.

The AM Plan is to be read with the organisation's *Asset Management Policy*, *Asset Management Strategy*, and the following associated planning documents:

- *Draft City of Adelaide Strategic Plan 2016 - 20**
- *Smart Move Transport and Movement Strategy 2012 - 22*
- *Adelaide Design Manual* (final version yet to be adopted by Council)
- *Long Term Financial Plan*
- *Annual Business Plan*
- *The 30-year Plan for Greater Adelaide*
- *Our Cities, Our Future – National Urban Policy – Australian Government*
- *Adelaide Park Lands Management Strategy - 2020*
- *(and any future strategic plans adopted by Council)

This infrastructure assets covered by this AM Plan are shown in Table 2.1.

Table 2.1: Assets Covered by this Asset Management Plan

Asset category	Dimension	Replacement value
Road network	1,729,700 m ² 129 km network length	\$205,691,000 (Valued 2013 - 14)
Footpaths (street and park lands)	855,000 m ² 288 km network length	\$167,539,000 (Valued 2013 - 14)
Kerb and water table	260.5 km	\$80,804,000 (Valued 2013 - 14)
Bridges	5 major road bridges 3 major footbridges 38 minor footbridges	\$155,759,000 (Valued 2014 - 15)
Traffic signals	131 sites	\$50,100,000 (Valued 2014 - 15)
TOTAL		\$659,893,000

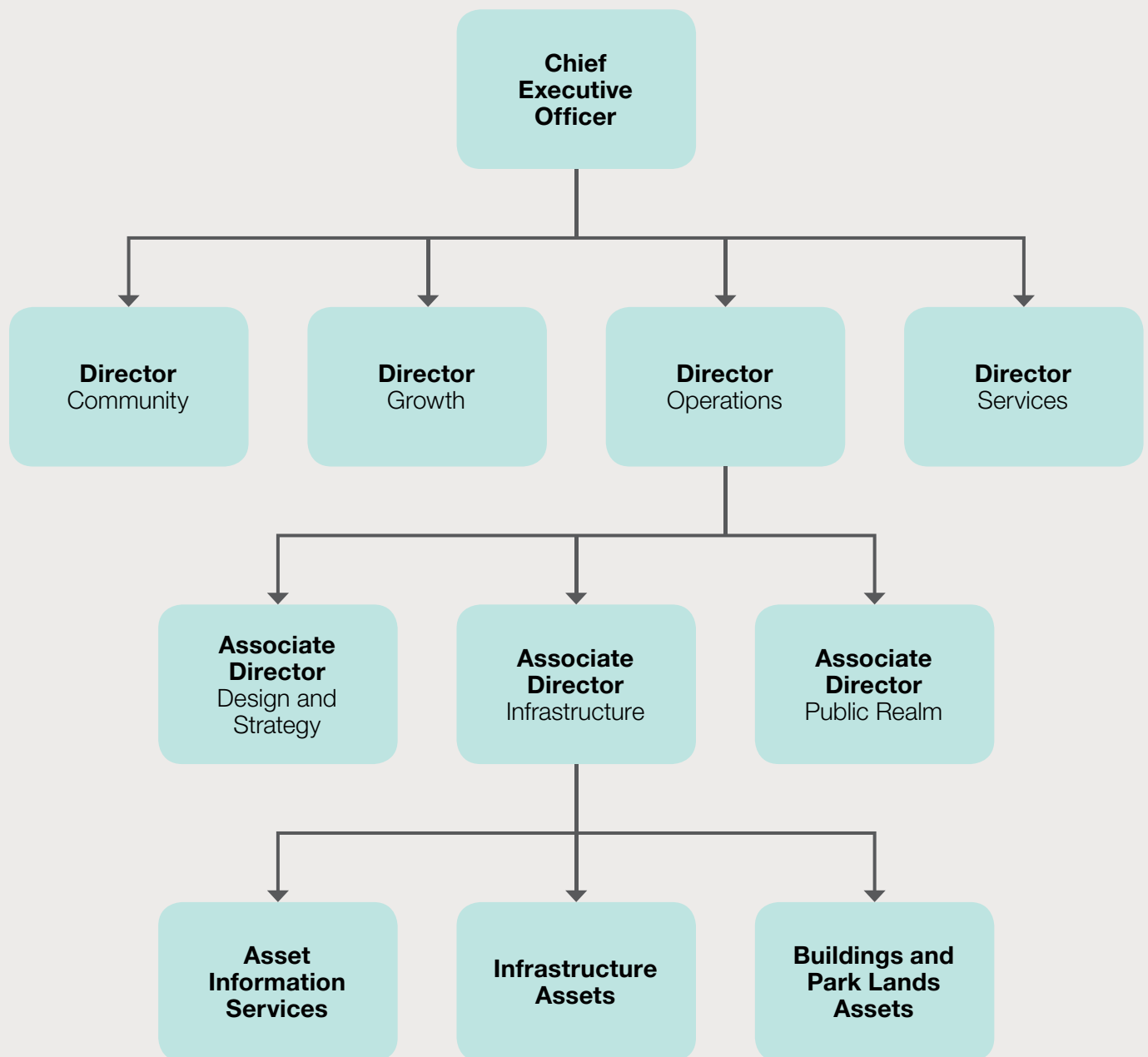
1. IPWEA, 2011, Sec 4.2.6, Example of an Asset Management Plan Structure, pp 4|24 – 27.

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

Table 2.1.1: Key Stakeholders in the Asset Management Plan

Key stakeholder	Role in AM Plan
Elected Members	<ul style="list-style-type: none"> Represent needs of community / shareholders; and Ensure organisation is financial sustainable.
General public, including road users, pedestrians, and cyclists	<ul style="list-style-type: none"> Influence levels of service through public consultation; and Customer feedback through correspondence.
CEO / Directors	Executive management endorsement, sign off, and executive leadership.
Associate Director – Infrastructure Program	Review and approval of AM Plan.
Asset Manager – Transportation	Development, implementation, and maintenance of AM Plan to meet community levels of service.
Infrastructure Assets Team	Coordinate future works programming to optimise delivery outcomes and minimise costs across all asset classes.
Public Realm Program	Provide input and maintain the infrastructure managed under the AM plan to meet technical levels of service.
Active City Program	Development and updating of <i>Active City Strategy</i> , and other relevant plans, strategies for the assets.
City Safety and Customer Services Program	Provide input on safety standards and monitor customer queries for level of service review.
Finance and Businesses	Funding for LTFP.
City Planning and Development Program	Inform long term demand drivers for use in AM Plan.
Design and Strategy	Design, documentation support for Infrastructure Management in delivering the AM Plan.
Strategy and Innovation Program	Development of annual business plan and budget and <i>Strategic Management Plan</i> review.
State Government and DPTI	DPTI will continue to be consulted to coordinate any works affected by imminent State Government plans. The aim is to coordinate works where possible.
Service authorities (i.e. APA, SA Water, SAPN)	Service authorities will continue to be consulted to coordinate any works planned by either Council or the service authority so investment in the asset is not compromised.

The organisational structure for service delivery from infrastructure assets is detailed below:



2.2 Goals and Objectives of Asset Management

The organisation exists to provide services to its community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by 'purchase', by contract, construction by our staff, and by donation of assets constructed by developers and others government agencies to meet increased levels of service.

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

- Providing a defined level of service and monitoring performance;
- Managing the impact of growth through demand management and infrastructure investment;
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service;
- Identifying, assessing, and appropriately controlling risks; and
- Having a LTFP which identifies required, affordable expenditure, and how it will be financed².

2.3 Plan Framework

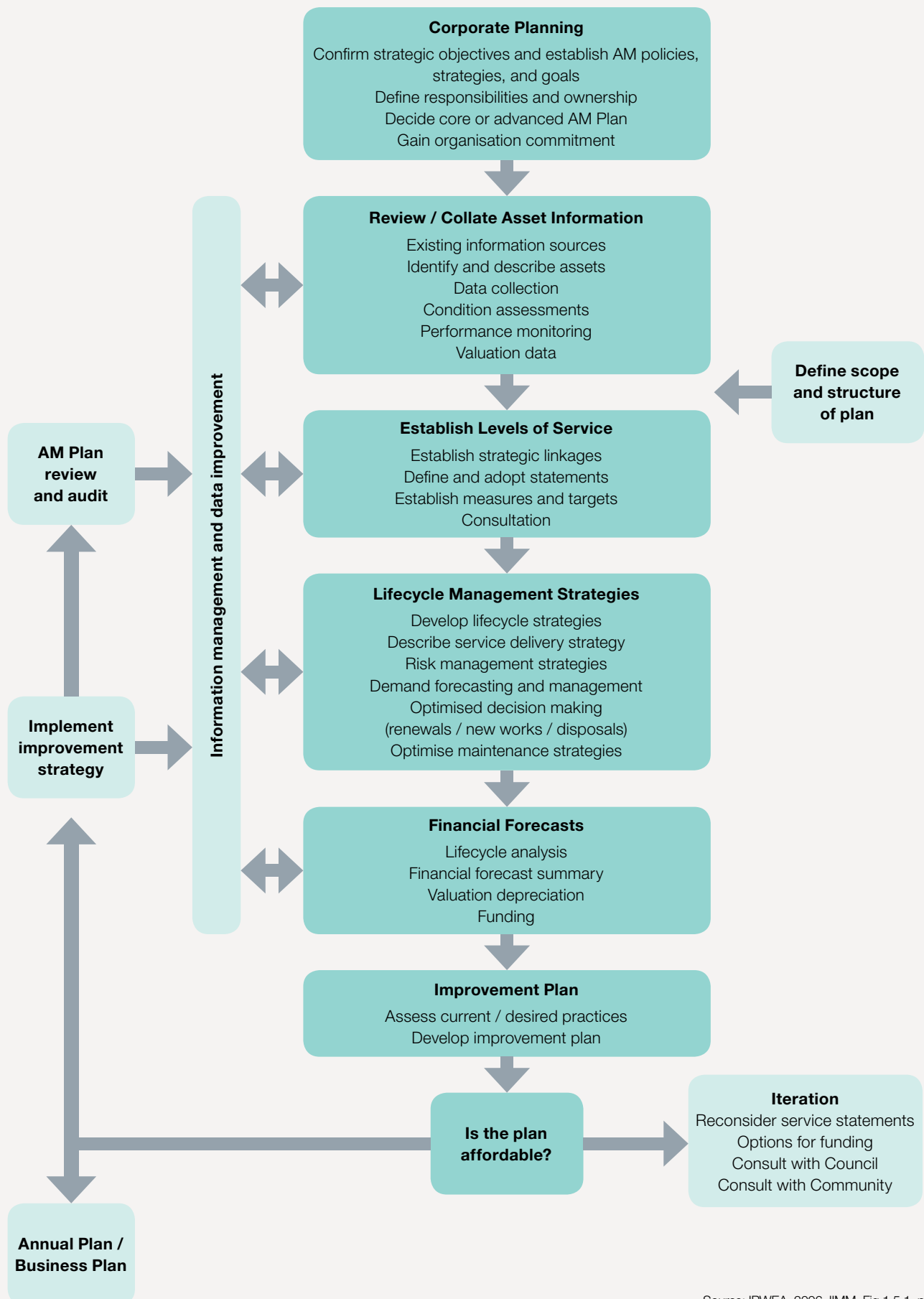
Key elements of the plan are as follows:

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

A road map for preparing an AM Plan is shown on the following page.

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

Road Map for preparing an Asset Management Plan



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

2.4 Core and Advanced Asset Management

This AM Plan is prepared as a 'core' AM Plan over a 20-year planning period in accordance with the *International Infrastructure Management Manual*³. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

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

2.5 Community Consultation

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

3. IPWEA, 2011, IIMM.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

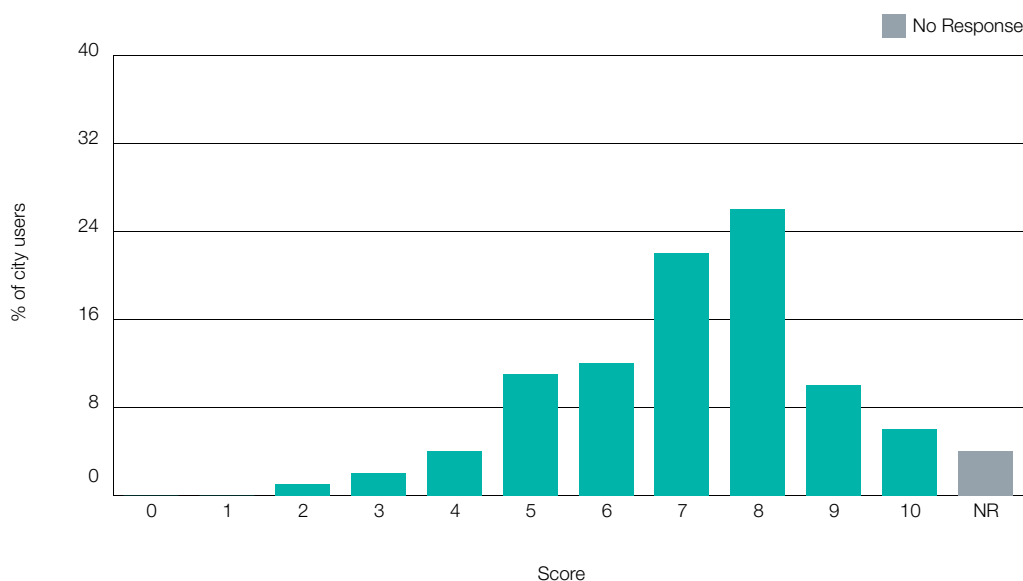
In May 2015, Council undertook a customer service survey to measure the satisfaction of customers using Council services delivered by infrastructure assets.

Over 2,000 city users were surveyed via an 'on street intercept' method at various locations across the city. To ensure that information was captured from a broad range of city users, surveys were conducted at various times throughout the day and in the evening as well as on weekdays and weekends.

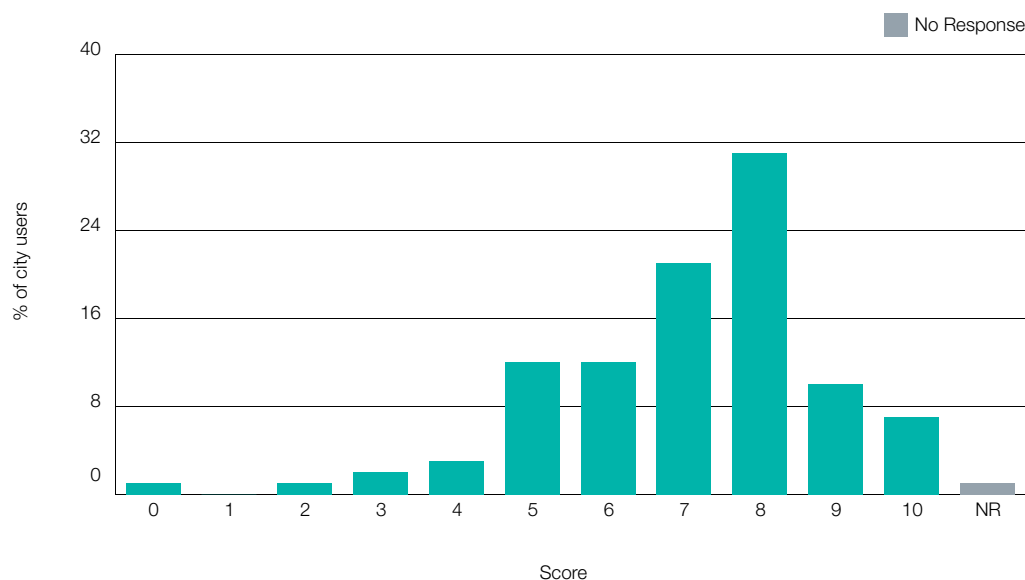
Users of the city were asked on their perceptions of council's performance on various aspects of public realm. Respondents were asked to provide a score of zero to 10 where 'zero' meant council was performing a lot worse than expected and '10' meant that council was performing a lot better than expected.

For the Transportation Assets Class, the survey measured customer satisfaction for the maintenance of road and footpath infrastructure as well as satisfaction in regards to beautifying streets, squares, and park lands. The results of the survey are presented in the graphs below, with average scores of 7.0 for the maintenance of roads, 7.1 for the maintenance of footpaths, and 7.5 for the beautifying of streets, squares, and park lands.

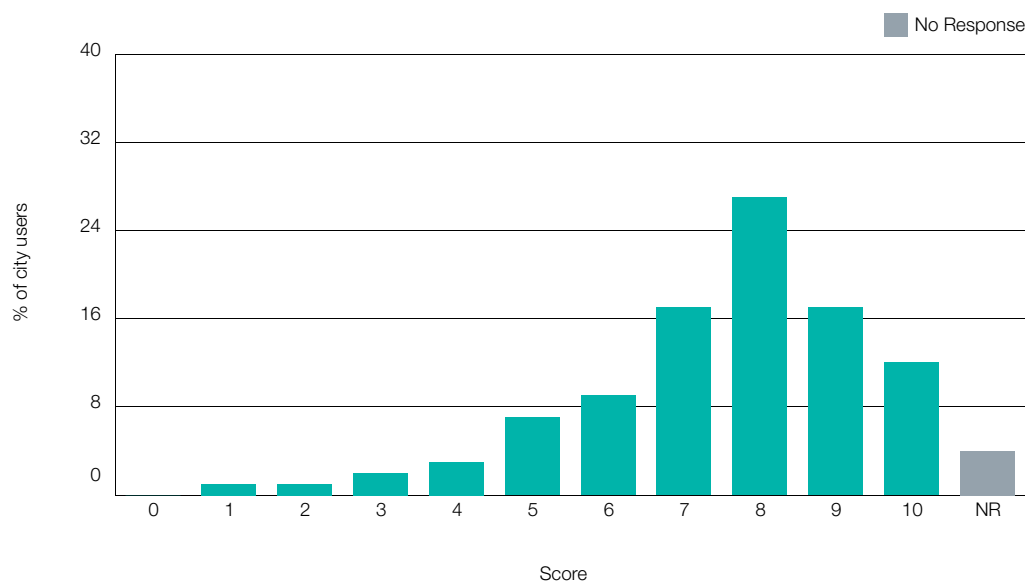
Maintenance of Roads



Maintenance of Footpaths



Beautifying of Streets, Squares and Park Lands



In November 2015, Council sought stakeholder feedback on a range of services provided by the Transportation Infrastructure Asset Class including roads, footpaths, bridges, kerb and water table, and traffic signals. To facilitate the consultation process the community were asked for their feedback on the services provided by infrastructure assets in the categories of streets, park lands, and buildings. Transportation assets were covered in the streets and park lands categories. This process assisted Council to measure its services against community expectations and a range of service level criteria including safety, accessibility, and cleanliness (based on 2014 - 15 investment).

A few consistent themes and suggested areas of improvement are presented in the table below.

Table 3.1: Levels of Service

Asset	Decrease	Adequate	Increase	Comments
STREETS				
Footpaths		☐	☐	Footpaths are considered good in some areas and poor in others. Key pedestrian thoroughfares, such as Bank Street and other laneways between North Terrace and the Central Markets, should be improved. However, the maintenance of other footpaths is adequate.
Bike paths		☐	☐	Similarly to footpaths, bike paths are considered good in some areas and poor in others. Clearing of debris, consistent treatment (e.g. green paint), and other details to ensure that cyclist's paths are clearly defined and they can remain in their lane.
PARK LANDS				
Foot and cycling paths		☐		Foot and cycling paths are predominantly considered adequate, although lighting should be improved in key areas of pedestrian activity.

A more detailed summary of the findings from the consultation is presented in Appendix F.

3.2 Strategic and Corporate Goals

The content of this AM Plan was originally prepared in early 2014 under the direction of *The City of Adelaide Strategic Plan 2012 - 16* and associated *Corporation Plan 2012 - 16* and reflects the goals and aspirations of the previous Council term (November 2010 - October 2014).

With the election of the new Council in October 2014, a new *Council Strategic Plan 2016 - 20* was under development in December 2015 during the finalisation of this AM Plan.

From the preliminary information available, the following Council vision, mission, goals, and objectives associated with community services provided by water infrastructure assets have been identified.

Our vision is:

Adelaide is a smart, green, liveable, boutique city full of rich experiences

Our Primary Goal is:

To strengthen the City economy by growing the number of people living, working, playing, visiting, and studying in the City every day

As the capital city of South Australia, Adelaide has a vital role to play in shaping the future of our state.

We face unprecedented changes arising from major global, national, and local trends. Reassuringly, our proven record of creativity, innovation, and social transformation sees our city well placed to lead the state in meeting these changes.

Our plan is to enrich Adelaide's lifestyle and boost its growth by becoming one of the world's smartest cities with a globally connected and opportunity rich economy.

We will be one of the world's first carbon neutral cities and a global leader in sustainability and responding to environmental change.

Adelaide will always be a distinctively unique capital city that supports a balanced lifestyle and a strong community. Our authentic and diverse range of experiences will be internationally renowned.

Our mission is:

To achieve the vision, Council has adopted four key outcomes which will guide the organisations projects, plans, policies, and strategies including this AM Plan. The four outcomes / mission statements are:

- **Smart** – A world smart city with a globally connected and opportunity rich economy;
- **Green** – One of the world's first carbon neutral cities and an international leader in environmental change;
- **Liveable** – A diverse and welcoming capital city with an enviable lifestyle and strong community; and
- **Creative** – A city of authentic and internationally renowned experiences.

Relevant organisational goals and objectives and how these are addressed in this AM Plan are identified below.

Table 3.2: Strategic Plan 2016 - 20 Objectives and Actions and how these are addressed in this Asset Management Plan

Theme	Objectives	Actions	How actions are addressed in AM Plan
Smart	Total businesses in the city will grow from 5,000 to over 5,300 and workers from 89,000 to 94,000 by 2020, on the way to 7,000 businesses and over 102,000 workers by 2040.	Build upon the growing laneway and entrepreneurial culture in the city by rejuvenating primary laneways and pedestrian connections. Priorities for completion by 2018 will be the Adelaide Railway Station to Adelaide Central Market link and Rundle Mall laneways including Gawler Place.	Coordinate renewals with new and upgraded infrastructure proposals including laneway rejuvenations.
Green	Reduce city carbon emissions by 35% from the 2006 - 07 baseline, on the way to an 80% real reduction by 2040.	Work with Federal and State Governments to promote sustainable transport options such as public transport cycling and walking to improve the experience of commuters and reduce transport related carbon emissions.	Coordinate renewals with new and upgraded infrastructure proposals including public transport, pedestrian, and cycling projects.
		By 2017, our procurement practices will reasonably require the environmental track record and / or credentials of suppliers and estimates of carbon emissions of products and services.	Maximise the use of recycled products in asset renewals (e.g. recycled asphalt).
	Green space and greenery in the built up areas of the city to increase by 100,000 square meters by 2020 on the way to a real reduction in city temperatures by 2040.	Increase public and private greening with street trees, gardens, community gardens, green walls, and roofs, vegetable gardens on street verges providing incentives where appropriate.	Coordinate renewals with strategic greening projects, to maximise greening outcomes.

Table 3.2: Strategic Plan 2016 - 20 Objectives and Actions and how these are addressed in this Asset Management Plan *continued*

Theme	Objectives	Actions	How actions are addressed in AM Plan
Liveable	The number of people living in the city will grow from 23,000 to 28,000 by 2020, on the way to 50,000 by 2040.	Create world-class infrastructure by adopting a three-year rolling capital works program to ensure all new and existing infrastructure is delivered and maintained to high quality standards incorporating technology, heritage, arts, and green elements.	Align transportation asset renewals with key infrastructure projects (State, Federal, and Internal). Establish effective maintenance standards.
		Work with neighbouring Councils and the State Government to enhance the facilities, attractions, landscapes, and movement networks in the Park Lands to meet the needs and expectations of growing high density communities living in and near the city.	All Currie-Grenfell renewals will be scheduled to align with redevelopment time frames.
	Adelaide is listed in the top three most liveable cities in the world by 2020, on the way to being the most liveable in 2040.	Plan and seek partnerships for major city infrastructure projects including cycling corridors, major transport routes, laneways, and city squares.	Coordinate renewals to align with all major redevelopment time frames.
		Plan and deliver priority walking and cycling routes to provide East-West and North-South cycleways and connections.	Coordinate renewals with new and upgraded infrastructure proposals including cycling and pedestrian connections.
Creative	The number of people that are visiting the city each day for shopping, leisure or entertainment will grow from 111,000 to 117,000 by 2020, on the way to 128,000 by 2040.	Pursue completion of the North Terrace Boulevard, focusing on the evolving biomedical precinct and the Riverbank precinct.	All North Terrace renewals will be scheduled to align with redevelopment time frames.
		Complete the <i>Rundle Mall Master Plan</i> , including completion of Gawler Place to link major city attractions.	All Rundle Mall laneway renewals, including Gawler Place, will be scheduled to align with redevelopment time frames.

The organisation will exercise its duty of care to ensure public safety is accordance with the *Infrastructure Risk Management Plan* prepared in conjunction with this AM Plan. Management of infrastructure risks is covered in Section 5.2.

3.3 Legislative Requirements

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

Table 3.3: Legislative Requirements

Legislation	Requirement
<i>Local Government Act 1999</i>	Sets out role, purpose, responsibilities, and powers of local governments including the preparation of a LTFP supported by asset management plans for sustainable service delivery.
<i>State Records Act 1997</i>	To ensure the city of Adelaide records and stores all relevant information as set out by the State Government of South Australia.
<i>Road Traffic Act 1961</i>	An Act to prescribe the duties of road users; to provide for nationally consistent road rules; to provide for vehicle standards, mass, and loading requirements and other safety measures in relation to light vehicles; to regulate the identification of vehicles; to provide for the installation, use, and maintenance of traffic control devices; to provide for the closing of roads for traffic management and other purposes; to provide for the use of photographic detection devices; to provide for the enforcement of Australian road laws and the recognition of administrative actions and court orders of other Australian jurisdictions; and for other purposes.
<i>Occupational Health, Safety, and Welfare Act and Regulations 1986</i>	Sets out roles and responsibilities to secure the health, safety, and welfare of persons at work.
<i>Highways Act 1926</i>	An Act to provide for the appointment of a Commissioner of Highways and to make further and better provisions for the construction and maintenance of roads and works and for other purposes.
<i>Native Vegetation Act 1991</i>	The Act provides incentives and assistance to landowners in relation to the preservation and enhancement of native vegetation; to control the clearance of native vegetation and for other purposes.
<i>Roads (Opening and Closing) Act 1991</i>	An Act to provide for the opening and closing of roads and for other purposes.
<i>Environmental Protection Act 1993</i>	An Act to provide for the protection of the environment: to establish the Environmental Protection Authority and define functions and powers and for other purposes.
<i>Australian Road Rules 1999</i>	The <i>Australian Road Rules</i> have been made into regulations under the <i>Road Traffic Act (South Australia)</i> and came into operation throughout Australia on 1 December 1999.
<i>Disability Discrimination Act 1992</i>	A Commonwealth Act relating to discrimination on the grounds of disability.
<i>Emergency Management Act 1994</i>	Requires lifeline utilities to function at the fullest possible extent during and after an emergency and to have plans for such functioning (business continuity plans).
<i>City of Adelaide Act 1998</i>	An Act to establish mechanisms to enhance the role of the city of Adelaide as the capital city of South Australia; to make special provision in relation to the local governance of the city of Adelaide; and for other purposes.

Table 3.3: Legislative Requirements *continued*

Legislation	Requirement
<i>Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices – Part 2 – Code of Technical Requirements 2012</i>	The <i>Code of Technical Requirements</i> ('the Code') amends the December 1999 version of the <i>Code of Technical Requirements for the Legal Use of Traffic Control Devices</i> . It has been updated to reflect the changes in the 2009 version of AS 1742 <i>Manual of Uniform Traffic Control Devices</i> (MUTCD), and recent updates of the Austroads Guides and other standards. The Code forms Part 2 of the <i>Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices</i> ('the Manual'). The Manual also contains <i>Part 1: Legal Responsibilities</i> ('the Instruments'). All state authorities vary from the standards and guides to reflect differences in legislated requirements set by each state jurisdiction. There are also other variations within each state that are provided to ensure a more consistent presentation of devices to road users.
<i>Development Act 1993</i>	An Act to provide for planning and regulate development in the state; to regulate the use of management of land and building; and for other purposes.
<i>Public and Environmental Health Act 1987</i>	An Act dealing with public and environmental health; to repeal the <i>Health Act 1935</i> , the <i>Noxious Trades Act 1934</i> , and the <i>Venereal Diseases Act 1947</i> ; and for other purposes.
<i>Adelaide Park Lands Act 2005</i>	Framework that promotes the special status, attributes, and character of the Adelaide Park Lands; to provide for the protection of those Park Lands and their management as a world-class asset to be preserved as an urban park for the benefit of present and future generations.
<i>Linear Parks Act 2006</i>	An Act to provide the protection of the River Torrens Linear Park, as world-class assets to be preserved as public parks for the benefit of present and future generations.

The organisation will exercise its duty of care to ensure public safety in accordance with the *Infrastructure Risk Management Plan* linked to this AM Plan. Management of risks is discussed in Section 5.2.

3.4 Community Levels of Service

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

Community levels of service measure how the community receives the service and whether the organisation is providing community value.

Levels of service are monitored and adjusted from the public consultation process, customer satisfaction surveys, and customer service centre feedback. They are based on:

- Customer expectations for quality of service and willingness to pay;
- Legislative requirements; environmental standards, regulations, and legislation that impacts the way assets are managed;
- Council's strategic objectives as stated in the strategic and corporation plans;
- Available resources, particularly financial constraints; and
- Design Standards and Codes of Practice.

Community levels of service measures used in the AM Plan are:

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

The organisation's current and expected community service levels are detailed in Tables 3.4. This table shows the agreed expected community levels of service based on resource levels in the current LTFP and community consultation / engagement.

Table 3.4: Community Level of Service (Roads, includes Kerb and Water Table)

Service attribute	Service objective	Performance measure process	Current performance (2014 - 15)	Expected position in 10 years based on 2014 - 15 funding levels
COMMUNITY LEVELS OF SERVICE				
Quality	SAFETY – Roads are free from hazards and are in a condition appropriate for use.	Customer service requests relating to reported road hazards.	141 customer service requests.	Decrease in customer complaints.
		Customer service requests relating to required road renewals and / or upgrades.	60 customer service requests.	Decrease in customer complaints.
		Customer satisfaction surveys relating to road safety.	55% of cyclists feel safe when riding on roads 97% of motorists feel safe when driving on roads.	Increase in customer satisfaction.
		Customer satisfaction surveys relating to road maintenance.	83% of cyclists satisfied with the current condition of the road surface for bicycle use 93% of motorists are satisfied with the condition of the road surface for driver use.	Increase in customer satisfaction.
		Number of incident claims received.	31 claims.	Decrease in customer claims.
	AMENITY – Roads are clean and free of debris.	Organisational measure: % of roads in Condition 4 and 5.	Condition 4: 11% Condition 5: 22%	Decrease in Condition 4 and 5 road assets.
		Organisational measure: % of kerb and water table in Condition 4 and 5.	Condition 4: 3% Condition 5: 1%	Increase in Condition 4 and 5 kerb assets.
		Customer service requests relating to reported road cleanliness issues.	165 customer service requests.	Increase in customer complaints.
	VALUE FOR MONEY – Council provides services at the lowest lifecycle cost.	Customer satisfaction surveys relating to road cleanliness.	90% satisfied with road cleanliness.	Decrease in customer satisfaction.
		Benchmarking operational and capital unit rates for common municipal civil infrastructure works.	To be developed.	NA

Table 3.4: Community Level of Service (Roads, includes Kerb and Water Table) continued

Service attribute	Service objective	Performance measure process	Current performance (2014 - 15)	Expected position in 10 years based on 2014 - 15 funding levels
COMMUNITY LEVELS OF SERVICE				
Function	AVAILABILITY – Roads are fully available during peak demand.	Frequency of unplanned lanes closures during peak demand.	Zero un-notified disruptions during peak demand.	Zero unplanned disruptions.
	ACCESSIBILITY – Road network is well connected and accessible to users allowing for efficient traffic movements.	Customer satisfaction surveys relating to road accessibility.	<ul style="list-style-type: none"> 79% of cyclists are satisfied with the accessibility of bicycle facilities on roads; and 95% of motorists are satisfied with the accessibility roads. 	Increase in customer satisfaction.
		Customer satisfaction surveys relating to how easy it is to move around the city.	<ul style="list-style-type: none"> 72% of cyclists find it easy to move around the city; and 86% of motorists find it easy to move around the city. 	Increase in customer satisfaction.
	NAVIGATION – Road network is easy to navigate.	Customer service requests relating to road line marking deficiencies.	69 customer service requests.	Decrease in customer complaints.
Capacity / Utilisation		Customer service requests relating to missing or damaged road signs.	242 customer service requests.	Decrease in customer complaints.
	CAPACITY – Roads have adequate capacity to minimize traffic congestion and delay.	Customer service requests relating to congestion and delays.	207 customer service requests.	Decrease in customer complaints.

Table 3.4: Community Level of Service (Footpaths and Cycle Paths)

Service attribute	Service objective	Performance measure process	Current performance (2014 - 15)	Expected position in 10 years based on 2014 - 15 funding levels
COMMUNITY LEVELS OF SERVICE				
Quality	SAFETY - Pathways have a smooth surface free from hazards and are of a condition appropriate for use. Pathways include service and drainage covers, driveway crossovers, and access ramps.	Customer service requests relating to reported hazards on footpaths and cycle paths.	386 hazard notifications.	Increase in customer complaints.
		Customer satisfaction surveys relating to footpaths and cycle paths safety.	<ul style="list-style-type: none"> 96% satisfied with footpath safety; 87% of pedestrians satisfied with shared path (cycle path) safety; and 87% of cyclists satisfied with shared path (cycle path) safety. 	Decrease in customer satisfaction.
		Customer satisfaction survey relating to footpath and cycle path maintenance.	<ul style="list-style-type: none"> 91% satisfied with current footpath condition; 98% of pedestrians satisfied with current shared path (cycle path) condition; and 97% of cyclists satisfied with current shared path (cycle path) condition. 	Decrease in customer satisfaction.
	SAFETY / AMENITY - Pathways are clean and free of hazardous debris.	Number of incident claims received.	33 claims.	Increase in customer claims.
		Organisational measure: % of pathways in Condition 4 and 5.	Condition 4: 6% Condition 5: 2%	Increase in Condition 4 and 5 footpath assets.
		Customer service requests relating to reported cleanliness issues.	278 requests relating to poor footpath cleanliness.	Increase in customer complaints.
	VALUE FOR MONEY - Council provides services at the lowest lifecycle cost.	Customer satisfaction surveys relating to pathway cleanliness.	90% satisfied with footpath cleanliness.	Decrease in customer satisfaction.
		Benchmarking operational and capital unit rates for common municipal civil infrastructure works.	To be developed.	NA
		Number of trees per m2 per hierarchal pathway classification (excludes park lands). Consistent materials types used as per pathways hierarchy and ADM.	Performance measure to be refined in future.	Improved amenity due to strategic alignment with increasing green infrastructure.
	AMENITY - Pathways / streets are aesthetically pleasing.	Customer satisfaction relating to amenity of streets with relation to greenery.	94% satisfied with condition and attractiveness of street trees and garden beds.	Increase in customer satisfaction.

Table 3.4: Community Level of Service (Footpaths and Cycle Paths) *continued*

Service attribute	Service objective	Performance measure process	Current performance (2014 - 15)	Expected position in 10 years based on 2014 - 15 funding levels
COMMUNITY LEVELS OF SERVICE				
Function	AVAILABILITY – Roads are fully available during peak demand.	Frequency of unplanned lanes closures during peak demand.	Zero un-notified disruptions during peak demand.	Zero unplanned disruptions.
	ACCESSIBILITY – Road network is well connected and accessible to users allowing for efficient traffic movements.	Customer satisfaction surveys relating to road accessibility.	<ul style="list-style-type: none"> 79% of cyclists are satisfied with the accessibility of bicycle facilities on roads; and 95% of motorists are satisfied with the accessibility roads. 	Increase in customer satisfaction.
		Customer satisfaction surveys relating to how easy it is to move around the city.	<ul style="list-style-type: none"> 72% of cyclists find it easy to move around the city; and 6% of motorists find it easy to move around the city. 	Increase in customer satisfaction.
	NAVIGATION – Road network is easy to navigate.	Customer service requests relating to road line marking deficiencies.	69 customer service requests.	Decrease in customer complaints.
Capacity / Utilisation		Customer service requests relating to missing or damaged road signs.	242 customer service requests.	Decrease in customer complaints.
	CAPACITY – Roads have adequate capacity to minimize traffic congestion and delay.	Customer service requests relating to congestion and delays.	207 customer service requests.	Decrease in customer complaints.

Table 3.4: Community Level of Service (Bridges)

Service attribute	Service objective	Performance measure process	Current performance (2014 - 15)	Expected position in 10 years based on 2014 - 15 funding levels
COMMUNITY LEVELS OF SERVICE				
Quality	SAFETY – Bridges are free from hazards, structurally sound and are in a condition appropriate for use.	Customer service requests relating to reported bridge hazards.	To be developed.	NA
		Organisational measure: All bridge barriers / balustrading are fit for current use.	To be developed.	NA
		Organisational measure: All bridge load capacities meet current and future demand.	To be developed.	NA
	SUSTAINABILITY – Bridges are built with sustainable materials	Organisational measure: % of bridge components in Condition 4 and 5.	Condition 4: 11% Condition 5: 22%	Increase in Condition 4 and 5 bridge assets.
		Organisational measure: % of bridges constructed with sustainable long life materials.	100%	No change.
		Customer satisfaction surveys relating to bridge amenity.	To be developed.	NA
Function	VALUE FOR MONEY – Council provides services at the lowest lifecycle cost.	Benchmarking operational and capital unit rates for common municipal civil infrastructure works.	To be developed.	NA
	AVAILABILITY – Bridges are fully available for pedestrians and vehicles.	Organisational measure: Frequency of unplanned bridge closures.	Zero unplanned bridge closures.	Increase in unplanned bridge closures.
	QUANTITY – Number of bridges meet customer demand.	Customer satisfaction surveys relating to quantity of bridge in the network.	To be developed.	NA
Capacity / Utilisation	CAPACITY – Bridges have adequate capacity in roadway and footpath widths to minimize traffic congestion and delay.	Organisational measure: % of bridges with roadways and / or footpaths with widths equal to adjacent connecting road and footpath infrastructure.	100%	No change.

Table 3.4: Community Level of Service (Traffic Signals)

Service attribute	Service objective	Performance measure process	Current performance (2014 - 15)	Expected position in 10 years based on 2014 - 15 funding levels
COMMUNITY LEVELS OF SERVICE				
Quality	SAFETY –Traffic signal infrastructure is free from hazards and in a condition appropriate for use.	Customer service requests relating to traffic signal hazards.	207 requests relating to traffic signal hazards requiring maintenance.	Increase in customer complaints.
		Organisational measure: % of traffic signal components in Condition 4 and 5.	Condition 4: 22% Condition 5: 1%	Increase in Condition 4 and 5 footpath assets.
	VALUE FOR MONEY – Council provides services at the lowest lifecycle cost.	Benchmarking operational and capital unit rates for capital city civil infrastructure works related to traffic signals.	To be developed.	NA
Function	AVAILABILITY – Traffic signals are available for all user groups.	Customer service requests relating to traffic signal lights being out of service.	12 requests relating to traffic signal lights being out of service.	Increase in customer complaints.
	ACCESSIBILITY – Traffic signal network is well connected and accessible to users allowing for efficient traffic movements.	Organisational measure: % of signalised intersection connected to the SCATS network.	100%	No change.
	QUANTITY – Number of signalised sites meets user demand	Customer service requests relating to need for additional traffic signal sites.	To be developed.	NA
Capacity / Utilisation	CAPACITY / UTILISATION – Traffic signal network operates efficiently and minimises delays.	Organisational measure: % of traffic signal infrastructure at sites with community demand.	100%	No change.

3.5 Technical levels of service

Technical levels of service - supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the organisation undertakes to best achieve the desired community outcomes and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as opening hours, cleansing, mowing grass, energy, and inspections;
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (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 (e.g. frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement, and building component replacement); and
- Upgrade – 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).

Service and Asset Managers plan, implement, and control technical service levels to influence the customer service levels⁴.

Table 3.5 shows the technical levels of service expected to be provided under this AM Plan. The agreed sustainable position column in the table will be developed by December 2015, following community consultation and a trade-off of service levels performance, costs, and risk within resources available in the LTFP.

4. IPWEA, 2011, IIMM, p 2.22

Table 3.5: Technical Levels of Service (Roads)

Service attribute	Service objective	Activity measure process	Current performance * (2014 - 15)	Desired for optimum lifecycle cost **	Agreed sustainable position ***
TECHNICAL LEVELS OF SERVICE					
Operations	Roads are free from hazards and are in a condition appropriate for use.	Regular condition and defect audits.	Network condition audit every 4 years. Currently no regular defect inspections by maintenance staff, but Council plans to introduce and better plan maintenance.	To be developed.	To be developed.
	Roads are clean and free of debris.	Street sweeping frequency.	Hierarchy 1 roads: Swept daily. Hierarchy 2 roads: Swept weekly. Hierarchy 3 roads: Inspected weekly and swept as required.	To be developed.	To be developed.
		Budget	Condition Audits: \$60,000 / 4 years Cleansing: \$1,660,000 Total: \$1,660,000	To be developed.	To be developed.
Maintenance	Roads are free from hazards and are in a condition appropriate for use.	Reactive maintenance requests completed within adopted time frames.	Not currently measured – but will be from 2015 - 16.	To be developed.	To be developed.
		Planned maintenance activities completed to schedule.	Planned maintenance is not currently undertaken, but is something that Council will be implementing in 2015 - 16.	To be developed.	To be developed.
		Budget	Reactive: \$530,000 Planned: \$0 Total: \$530,000	To be developed.	To be developed.
Renewal	Roads are free from hazards and are in a condition appropriate for use.	% of network in Condition 4 or 5.	Condition 4: 22% Condition 5: 11%	To be developed.	To be developed.
		Budget.	\$6,900,000	To be developed.	To be developed.
Upgrade / new	Roads have adequate capacity to minimize traffic congestion and delay.	As Council's road network is fully established, there is no activity measure process in place to monitor the need for new / upgraded roads.	NA	NA	NA
		Budget	-	-	-

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

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

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

Table 3.5: Technical Levels of Service (Footpaths and Cycle Paths)

Service attribute	Service objective	Activity measure process	Current performance * (2014 - 15)	Desired for optimum lifecycle cost **	Agreed sustainable position ***
TECHNICAL LEVELS OF SERVICE					
Operations	Roads are free from hazards and are in a condition appropriate for use.	Regular condition and defect audits.	Network condition audit every 4 years. Currently no regular defect inspections by maintenance staff, but Council plans to introduce and better plan maintenance.	To be developed.	To be developed.
	Roads are clean and free of debris.	Street sweeping frequency.	Hierarchy 1 roads: Swept daily. Hierarchy 2 roads: Swept weekly. Hierarchy 3 roads: Inspected weekly and swept as required.	To be developed.	To be developed.
		Budget	Condition Audits: \$60,000 / 4 years Cleansing: \$1,660,000 Total: \$1,660,000	To be developed.	To be developed.
Maintenance	Roads are free from hazards and are in a condition appropriate for use.	Reactive maintenance requests completed within adopted time frames.	Not currently measured – but will be from 2015 - 16.	To be developed.	To be developed.
		Planned maintenance activities completed to schedule.	Planned maintenance is not currently undertaken, but is something that Council will be implementing in 2015 - 16.	To be developed.	To be developed.
		Budget	Reactive: \$530,000 Planned: \$0 Total: \$530,000	To be developed.	To be developed.

Table 3.5: Technical Levels of Service (Footpaths and Cycle Paths) continued

Service attribute	Service objective	Activity measure process	Current performance * (2014 - 15)	Desired for optimum lifecycle cost **	Agreed sustainable position ***
TECHNICAL LEVELS OF SERVICE					
Renewal	Pathways are free from hazards and are of a condition appropriate for use.	% of network in Condition 4 or 5.	Condition 4: 6% Condition 5: 2%	To be developed.	To be developed.
		Budget	\$1,600,000	To be developed.	To be developed.
Upgrade / new	Footpaths provide a network with equitable access opportunities for all.	DDA Compliance for all bus stops.	All bus stops DDA compliant by 2021.	To be developed.	To be developed.
		Budget	\$50,000	To be developed.	To be developed.

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

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

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

Table 3.5: Technical Levels of Service (Kerb and Water Table)

Service attribute	Service objective	Activity measure process	Current performance * (2014 - 15)	Desired for optimum lifecycle cost **	Agreed sustainable position ***
TECHNICAL LEVELS OF SERVICE					
Operations	Kerb and water table is clean to allow for clear passage of rainwater runoff to stormwater drain.	Kerb and water table cleaning frequency (captured in road cleaning frequency above).	NA – see roads technical levels of service table.	To be developed.	To be developed.
	Understanding condition of kerb and water table network.	Condition audits.	Network condition audit every 4 years.	To be developed.	To be developed.
		Budget	Inspections: \$60,000 / 4 years Total: \$15,000	To be developed.	To be developed.
Maintenance	Maintain kerb and water table assets to ensure they function appropriately and reach their expected useful life.	Reactive maintenance requests completed within adopted time frames.	Not currently measured – but will be in 2015 - 16	To be developed.	To be developed.
		Planned maintenance activities completed to schedule.	Planned maintenance is not currently undertaken, but is something that Council will be implementing in 2015 - 16.	To be developed.	To be developed.
		Budget	Reactive: \$124,000 Planned: \$0 Total: \$124,000	To be developed.	To be developed.
Renewal	Kerb and water table infrastructure performs intended purpose.	% of network in Condition 4 or 5.	Condition 4: 3% Condition 5: 1%	To be developed.	To be developed.
		Budget	\$0 – in the past kerb and water table renewal has been incorporated into the road renewal budget.	To be developed.	To be developed.
Upgrade / new	Kerb and water table network capacity meets stormwater runoff demands.	As Council's kerb and water table network is fully established, there is no activity measure process in place to monitor the need for new / upgraded kerb and water table.	NA	NA	NA
		Budget	-	-	-

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

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

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

Table 3.5: Technical Levels of Service (Bridges)

Service attribute	Service objective	Activity measure process	Current performance * (2014 - 15)	Desired for optimum lifecycle cost **	Agreed sustainable position ***
TECHNICAL LEVELS OF SERVICE					
Operations	Bridges are free from hazards, structurally sound, and are in a condition appropriate for use.	Condition audits.	Network condition audit every four years. Currently no defect audits, but something that Council plans to undertake in the future to drive planned maintenance.	To be developed.	To be developed.
Maintenance	Bridges are free from hazards, structurally sound, and are in a condition appropriate for use.	Budget	Condition Audits: \$60,000 / 4 years Total: \$15,000	To be developed.	To be developed.
		Reactive maintenance requests completed within adopted time frames.	Not currently measured – but will be in 2015 - 16.	To be developed.	To be developed.
		Planned maintenance activities completed to schedule.	Planned maintenance is not currently undertaken, but is something that Council will be implementing in 2015 - 16.	To be developed.	To be developed.
Renewal	Bridges are free from hazards, structurally sound, and are in a condition appropriate for use.	Budget	Reactive: \$27,000 Planned: \$0 Total: \$27,000	To be developed.	To be developed.
		% of network in Condition 4 or 5.	Condition 4: 1% Condition 5: 0%	To be developed.	To be developed.
Upgrade / new	Bridges function safely and meet users needs.	Budget	\$180,000	To be developed.	To be developed.
		Risks that can be mitigated and improve safety through upgrading or installing new bridge components.	NA – risk register was developed for 2015 - 16 implementation.	To be developed.	To be developed.
		Budget	\$0	To be developed.	To be developed.

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

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

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

Table 3.5: Technical Levels of Service (Traffic Signals)

Service attribute	Service objective	Activity measure process	Current performance * (2014 - 15)	Desired for optimum lifecycle cost **	Agreed sustainable position ***
TECHNICAL LEVELS OF SERVICE					
Operations	Traffic signal infrastructure is free from hazards and in a condition appropriate for use.	Condition audits.	Network condition audit every 4 years.	To be developed.	To be developed.
		Traffic signal system fully operational.	430 traffic signal system faults / year.	To be developed.	To be developed.
		Budget	Audits: \$40,000 / 4 years SCATS: \$330,000 (DPTI deed) Total: \$340,000	To be developed.	To be developed.
Maintenance	Traffic signal infrastructure is free from hazards and in a condition appropriate for use.	Reactive maintenance requests completed within adopted time frames.	90% of reactive maintenance works are completed with adopted time frames.	To be developed.	To be developed.
		Planned maintenance activities completed to schedule.	90% of planned maintenance works are completed with adopted time frames.	To be developed.	To be developed.
		Budget	Reactive: \$192,000 Planned: \$278,000 Total: \$470,000	To be developed.	To be developed.
Renewal	Traffic signal infrastructure is free from hazards and in a condition appropriate for use.	% of network in Condition 4 or 5.	Condition 4: 22% Condition 5: 1%	To be developed.	To be developed.
		Budget	\$875,000	To be developed.	To be developed.
		All required traffic signal upgrades are funded through the renewal budget when the asset comes up for renewal.	Not measured.	To be developed.	To be developed.
Upgrade / new	Traffic signal network operates efficiently and minimises delays.	Budget	Predominately external blackspot funding.	-	-

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

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

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

4. FUTURE DEMAND

4.1 Demand Drivers

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

As a capital city, all of Council's transportation assets must serve both the local resident population needs as well as the daily commuter and visitor needs to the city. Demand for the services supported by all transportation assets will therefore be influenced by factors external to the fixed resident base.

The influence of other tiers of government, particularly the State Government, is another driver that can impact on the demand for the Transportation Asset Class or the level of service provided through those assets.

4.2 Demand Forecast

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

4.3 Demand Impact on Assets

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

Table 4.3: Demand Drivers, Projections, and Impact on Services

Asset class	Demand drivers	Present position	Projection	Impact on services
All of the Transportation Asset Class	Forecast growth.	The number of people entering the city on a daily basis has continued to increase annually.	If the 30-year planned growth for the city is realised, there will be an estimated 42% increase in trips, with at least an additional 100,000 people travelling to and around the city.	All of Council's transportation infrastructure will be subject to heavier volumes of traffic (vehicle, bicycle, pedestrian) due to Adelaide's forecast growth. Additional research needs to be undertaken in future revisions of this AM Plan to quantify the impact on the infrastructure as part of the forecast growth.
Roads	Change in the use of streets (social / recreational / leisure demand changes).	Streets more focussed on vehicular traffic movement.	Streets to be focussed on pedestrian and cyclist movements, with a reduction in private vehicular traffic.	Select roadways will be reduced in size to accommodate wider footpaths and landscaped buffer zones to allow more cyclists and pedestrian movement. This aims to encourage a reduction of vehicular traffic in certain transport passages.
	Increase in public transport.	6,020 buses per day ⁵ .	8,550 buses per day* by 2038, to facilitate the reduction in private vehicular traffic.	Higher traffic loadings (more axels per vehicle) will cause the network to deteriorate at a faster rate. To keep up with demand a new road design will need to be considered or maintenance will need to increase.

*Estimate based on projected increase in daily visits of 42% by 2038.

Table 4.3: Demand Drivers, Projections, and Impact on Services *continued*

Asset class	Demand drivers	Present position	Projection	Impact on services
Footpaths	Increase in daily visits.	502,000 ⁵ per day.	654,000 ⁵ per day by 2034.	Increased use of the footpath network. Increased loading and utilisation patterns will lead to an increase in the level of service provided and the day to day operations, maintenance, and periodic renewal of assets. Increased pressure to reach DDA compliance targets (widen footpath etc).
	Change in use of footpath network (social / recreational / leisure demand changes).	Footpath network designed to safely accommodate the movement of people quickly and efficiently. More investment into creating bike lanes and paths due to the change in transportation modes entering and existing the city.	The use of the public streets will change to give preference to pedestrians. There will be a greater demand for more of the footpath network to cater for both high levels of movement and on street activity (place-making). More footpaths (street and park lands paths) will become shared paths	To accommodate the change in use of the public footpaths, there will be a greater demand to ensure the footpaths are wide enough and DDA compliant. This will impact other asset classes including roads, lighting, and stormwater management. Existing footpath network will be made obsolete meaning they will be renewed before their economic life (optimum renewal point) is reached.
	Environmental awareness	6,000 ⁶ street trees. Minimal WSUD infrastructure implemented.	8,000 ⁶ street trees. Increase in WSUD infrastructure through wide adoption of WSUD principles.	Additional street trees and WSUD measures may reduce the trafficable width of the footpath network.
	Economic growth	Seven areas of noticeable on street night-time activity (Hindley Street, Gouger Street etc).	Significant increase in night time activity locations by 2030 ⁵ .	Increased use of the footpath network due to increased shopping hours / night time activities. Increased loading and utilisation patterns will lead to an increase in the level of service provided and the day to day operations, maintenance, and periodic renewal of assets.

5. The 30-year Plan for Greater Adelaide, South Australian Government
6. Urban Design Framework

Table 4.3: Demand Drivers, Projections, and Impact on Services *continued*

Asset class	Demand drivers	Present position	Projection	Impact on services
Kerb and water table	Change in use of footpaths.	All new projects must incorporate DDA standard applications.	It is estimated that new protuberances will be installed each year as part of the <i>Smart Move</i> and <i>Active City</i> strategies.	Increase in asset stock.
Bridges	Increased bicycle and foot traffic through the Adelaide Park Lands.	It has been identified that as part of Council's <i>Smart Move Strategy</i> there will be a residual increase in demand for pedestrian and bicycle paths and trails.	A number of new trails and shared paths have already been planned for implementation within the Park Lands to account for the projected increase in foot and bicycle traffic.	There will be no requirement for additional bridge assets to be installed within the Park Lands, as none of the proposed paths cross existing Park Lands creeks or channels.
	Increase in public transport buses using road bridges.	Currently there are approximately 3,000 buses crossing Council road bridges per day.	As part of Council's <i>Smart Move Strategy</i> , it has been projected that up to 5,800 buses will cross Council road bridges per day.	Possible reduction of service life of road bridges due to the increased loading associated with additional bus and other heavy vehicle traffic.

Table 4.3: Demand Drivers, Projections, and Impact on Services *continued*

Asset Class	Demand drivers	Present position	Projection	Impact on services
Traffic signals	Traffic trends.	Trends have changed over the last one to three years with a huge push for more sustainable transport options – priorities now focused on pedestrians, cyclists, public transport, and then the private use vehicle.	Although modal change is expected, the scope to increase the number of traffic signals within Council is minimal, despite new and redevelopment opportunities.	Future demand for increased signalling infrastructure will be low, although population will increase demands on road and traffic signal networks for better LoS and change of modal use.
	Emerging technologies or innovation	Increases in tram and rail electrification networks will increase public transport. Bluetooth detection is emerging as a data source for traffic planning.	The allocation of road space for alternative modes such as priority bus lanes, also promote energy efficient modes of travel choice by making public transport time competitive with private transport.	Increased public transport will have a profound impact on the road network and its management, adoption of such approaches to transport are of increasing interest, as are adoption of technology and energy efficient demands.
	Ageing traffic signal network	Funding and budget restraints which are leading to asset condition deterioration increasing.	Review of traffic signal network to ensure integrity of asset, condition audits used to build up a better understanding of the current condition.	Increased maintenance costs, increase failure rate, increased asset renewal costs, and reduced level of service over time.

4.4 Demand Management Plan

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

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures.⁷

Opportunities identified to date for demand management are shown in Table 4.4. Further opportunities will be developed in future revisions of this AM Plan.

Table 4.4: Demand Management Plan Summary

Asset class	Demand driver	Impact on services	Demand Management Plan
All of the Transportation Asset Class	Forecast growth.	All of Council's transportation infrastructure will be subject to larger volumes of traffic (vehicle, bicycle, pedestrian) due to Adelaide's forecast growth.	In 2012, Council devised the <i>Smart Move Transport and Movement Strategy</i> , with the intent to seek more sustainable transport outcomes for the city.
Roads	Change in the use of streets (social / recreational / leisure demand changes).	Roadways will be reduced in size to accommodate wider footpaths and landscaped buffer zones to allow more cyclists and pedestrian movement.	Integrated land use and urban planning will reduce road space and increase footpath and landscape areas.
	Increase in public transport.	Larger traffic loadings will cause the pavements to deteriorate at a faster rate and in some case require dedicated bus lanes.	During the cyclic renewal of the roadways, the pavement design / specification will be upgraded to address future demand of increased loadings associated with the bus corridors.

7. IPWEA, 2011, IIMM, Table 3.4.1, p 3/58.

Table 4.4: Demand Management Plan Summary *continued*

Asset class	Demand driver	Impact on services	Demand Management Plan
Footpaths	Increase in daily visits.	<p>Increased use of the footpath network.</p> <p>Increased loading and utilisation patterns will demand an increase in the day to day operation, maintenance, and asset renewal.</p> <p>Increased pressure to reach DDA compliance targets (widen footpath, etc).</p>	<p>Communicate options and capacity to fund future footpath network needs to the community to obtain an acceptable level of service.</p> <p>Improve understanding of costs and capacity to maintain current service levels.</p> <p>Redirect pedestrian traffic to existing footpaths which have lower utilisation but sufficient capacity, where applicable.</p>
	Change in use of footpath network (social / recreational / leisure demand changes).	<p>To accommodate the change in use of the public footpaths, there will be a greater demand to ensure the footpaths are wide enough and DDA compliant. This will impact other asset classes including roads, lighting, and stormwater management.</p> <p>Existing footpath network will be made obsolete and will result in the asset being renewed before their economic life (optimum renewal point) is reached.</p>	<p>Communicate options and capacity to fund future footpath network needs to the community to obtain an acceptable level of service.</p> <p>Improve understanding of costs and capacity to maintain current service levels.</p> <p>Redirect pedestrian traffic to existing footpaths which have lower utilisation but sufficient capacity, where applicable.</p>
	Environmental awareness.	<p>Additional street trees and WSUD measures will reduce the trafficable width of the footpath network.</p>	<p>Communicate options and capacity to fund future footpath network needs to the community to obtain an acceptable level of service.</p> <p>Improve understanding of costs and capacity to maintain current service levels.</p> <p>Prescribe trees with a smaller footprint.</p> <p>Encourage WSUD treatments to occur within properties for new developments.</p> <p>Utilise Park Lands area (greenfield) to implement larger, more effective WSUD treatment measures.</p>

Table 4.4: Demand Management Plan Summary *continued*

Asset class	Demand driver	Impact on services	Demand Management Plan
Footpaths	Economic growth.	<p>Increased use of the footpath network due to increased shopping hours / night time activities.</p> <p>Increased loading and utilisation patterns will lead to an increase in the level of service provided and the day to day operations, maintenance, and periodic renewal of assets.</p>	<p>Communicate options and capacity to fund future footpath network needs to the community to obtain an acceptable level of service.</p> <p>Improve understanding of costs and capacity to maintain current service levels.</p>
Kerb and water table	Change in use of footpaths.	An increase in asset stock to accommodate changes in the use of the footpath networks (i.e. additional protuberances).	Offset the additional kerb and water table created from introduction of protuberances by removing sections of kerb to allow street trees to be passively irrigated (WSUD principles).
Bridges	Increased bicycle and foot traffic through the Adelaide Park Lands.	There will be no requirement for additional bridge assets to be installed within the Park Lands, as none of the proposed paths cross existing Park Lands creeks or channels.	NA
	Increase in public transport accessing road bridges.	Possibility in reduction of service life of road bridges due to the increased loading associated with additional buses.	Review of load capacity analysis and general structural condition assessments (Level 3) on road bridges.
Traffic signals	Traffic trends.	Future demand for increased signalling infrastructure will be low, although population will increase demands on road and traffic signal networks for better LoS and change of modal use.	Within the <i>Smart Move Transport and Movement Strategy</i> , Outcome 8 Great Streets, 8.5 Redefine the use and SPACE allocation of streets, the aim is to reallocate the carriageway width for vehicle movement which will be determined according to the strategic role of the street, with all remaining street space being allocated to pedestrian activities, cyclist movement, and place-making.
	Emerging technologies or innovation.	Increased public transport would have a profound impact on the road network and its operation, with the adoption of such transport, technology, and energy efficient demands are of interest. Driverless and electric vehicles are also emerging technologies to be considered in future planning.	Although bus lanes to date have been a State Government initiative, through the <i>Smart Move Transport and Movement Strategy</i> , Outcome 3 Quality Public Transport, there is an action plan for Council to implement 15 kilometres of additional bus priority lanes and improve bus priority on already key bus streets without impacting other road users.

4.5 Asset Programs to meet Demand

New assets constructed / acquired by the organisation are discussed in Section 5.5. The cumulative value of new contributed and constructed asset values are summarised in the figures below. Acquiring these new assets will commit the organisation to fund 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 in Section 5.

Roads

Due to the Council's road network being fully established, no requirements for any upgraded / new assets have been identified under this AM Plan.

Footpaths

Figure 1 demonstrates the current forecast of upgraded and new assets based on meeting legislative compliance surrounding DDA upgrades to bus stop infrastructure. Future demand for new and enhanced assets brought about by the ADM is not included.

Figure 1 (Footpaths): Upgrade and New Assets to meet Demand



The \$300,000 increase across financial years from 2015 - 16 until 2020 - 21 is to ensure all bus stops are DDA compliant by 2020 - 21. Accompanying this is an increase in asset stock for kerb and water table assets due to the inclusion of protuberances. At the time of development of this AM Plan, impacts of future enhancements including the widening of shared use paths and footpath widenings for heavily utilised North-South and East-West linkages were unknown. Further data will need to be collected to understand where assets are not meeting a level of demand not governed by legislative compliance.

Kerb and Water Table

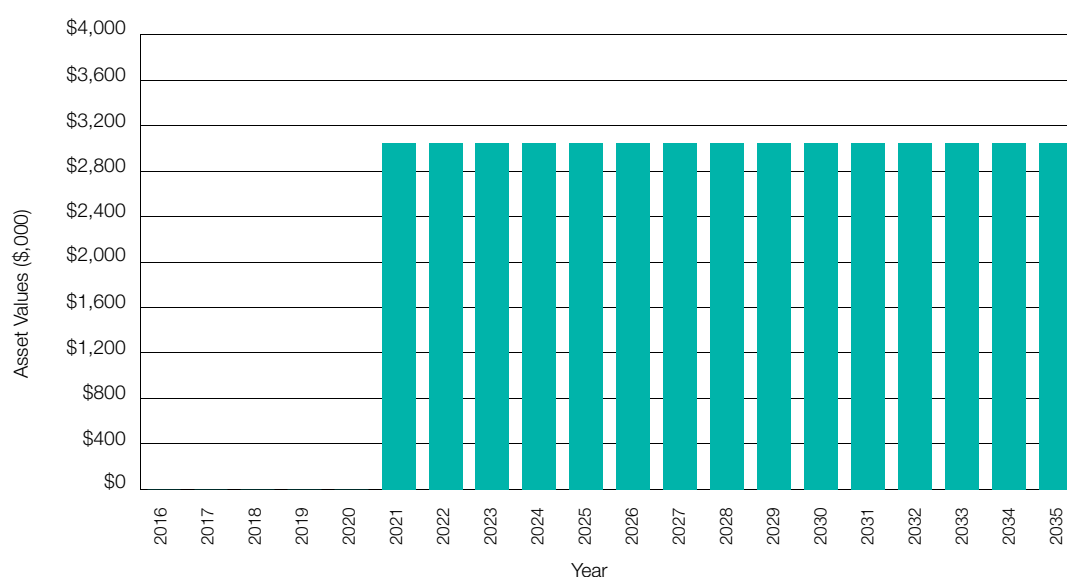
Council has a fully developed road network which also has a fully developed kerb and water table network. Therefore, no specific requirements for any upgraded / new assets have been identified under this AM Plan.

Bridges

While Council may inherit bridges from third parties like the Department of Planning Transport and Infrastructure (DPTI) there is no demand for Council to establish additional bridges due to forecast growth. There is however, a demand for bridges to be upgraded to mitigate potential risks which have been identified in the Risk Register (Table 5.2). It is desirable to install vehicle barriers along Morphett Bridge to mitigate the risk of vehicles hitting pedestrian traffic or even leaving the bridge. The associated cumulative value for this installation is presented in Figure 1.

There is a possibility that the River Torrens Footbridge may be transferred from DPTI to Council; an asset worth in excess of \$40,000,000, requiring approximately \$500,000 annual maintenance expenditure. Furthermore, it is likely that a number of new or upgraded footbridges will be established in the Park Lands as part of the Brown Hill and Keswick Creek Stormwater Project. These assets will be added to Council's asset inventory in future revisions of the AM Plan.

Figure 1 (Bridges): Upgrade and New Assets to meet Demand



Traffic Signals

There is no foreseeable demand for new signalised intersections, despite the forecast population increase. Therefore no requirements for any new traffic signal assets have been identified under this AM plan. Council will continue to bid for external blackspot funding for safety related traffic signal infrastructure upgrades and enhancements.

However new smart technology infrastructure (such as countdown timers and radar detection) will progressively replace existing infrastructure and support the increased pedestrian and cycling targets outlined in *The City of Adelaide Strategic Plan 2016 - 20*.

5. LIFECYCLE MANAGEMENT PLAN

The Lifecycle Management Plan details how the organisation plans to manage and operate the assets at the agreed levels of service (defined in Section 3) while optimising lifecycle costs.

5.1 Background Data

5.1.1 Physical parameters

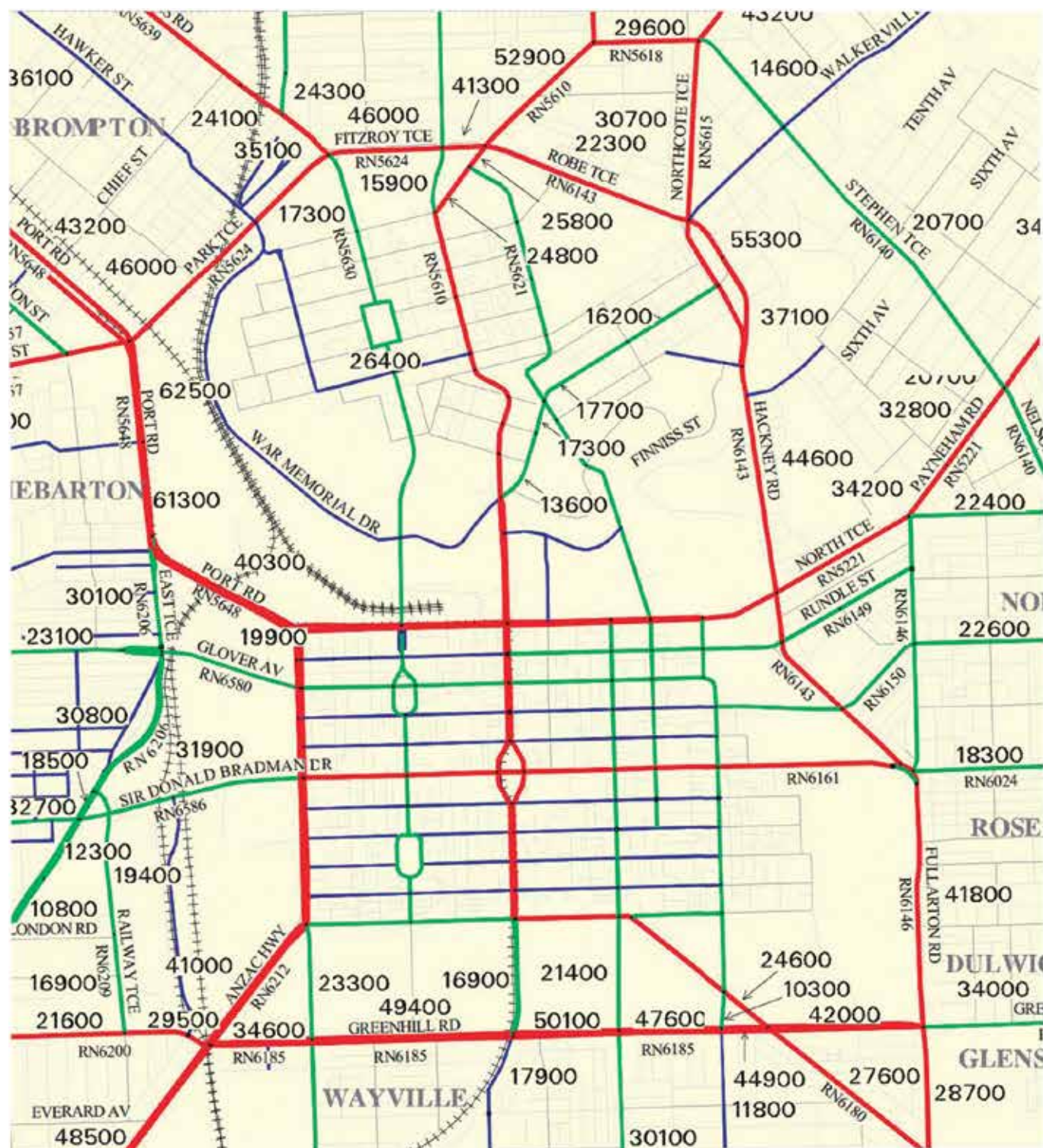
The assets covered by this AM Plan are shown in Table 2.1. The age profiles presented below have been determined by taking the estimated remaining life of components from the condition rating obtained during audits.

Roads

Council’s road network is made up of 129 kilometres of sealed roadway and incorporates DPTI Class 6, 7, 8, and 9 roadway classifications, as defined below. It should be noted that Council doesn’t own or maintain any Class 1 to 5 roads, as these are classified as rural roads or highways and are under the province of State Government.

Road classification	Definition
Class 6	Roads whose main function is to form the principal avenue of communication for massive traffic movements.
Class 7	Roads, not being Class 6, whose main function is to supplement the Class 6 roads in providing for traffic movements or which distribute traffic to local street systems.
Class 8	Roads, not being Class 6 or 7, whose main function is to provide access to abutting property.
Class 9	Roads which provide almost exclusively for one activity or function and which cannot be assigned to Classes 6, 7, and 8.

The following map visually depicts the Class 6, 7, 8, and 9 roads described in the table above, which lie within the Council boundary. The red represents Class 6 roads, green represents Class 7 roads, blue represents Class 8 roads, and grey represents Class 9 roads.



Annual Average Daily Traffic Estimates 24 hour two-way flows

Please note that this information has been collected for internal use by DPTI and is provided herein as an information resource only. It is not a substitute for independent professional advice and users should exercise their own skill, care and judgement with respect to the use of the material. Whilst all reasonable care has been taken in this preparation, the State of South Australia does not guarantee, and accepts no legal liability arising from or connected to, the accuracy, reliability, currency, suitability, or completeness of this material.

The estimates shown are weighted averages for designated road sections. Since counts may be influenced by various factors, these counts should be used as a guide only. For more detailed information phone 1800 1343 2610.

Produced by Road Asset Management Section - 28 September 2014

AUSTROADS

Road Class



- Section start
- Section end

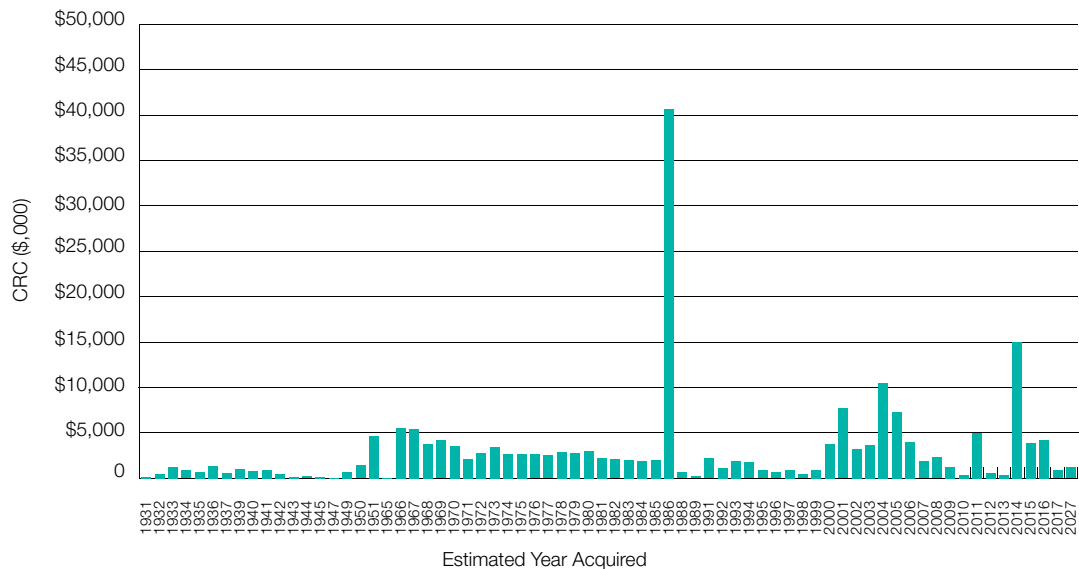
Map MT11



It is important to note that within Council's road network there are a number of designated bus lanes that have been initiated. These bus lanes are located within major public transport corridors such as Grenfell Street, Currie Street, West Terrace, and Anzac Highway, to optimise efficiency and reduce travel time for commuters using public transport.

The age profile of the assets included in this AM Plan has been established using a condition based assessment, as age information was not readily available. The calculated age profile for the road network is shown in Figure 2.

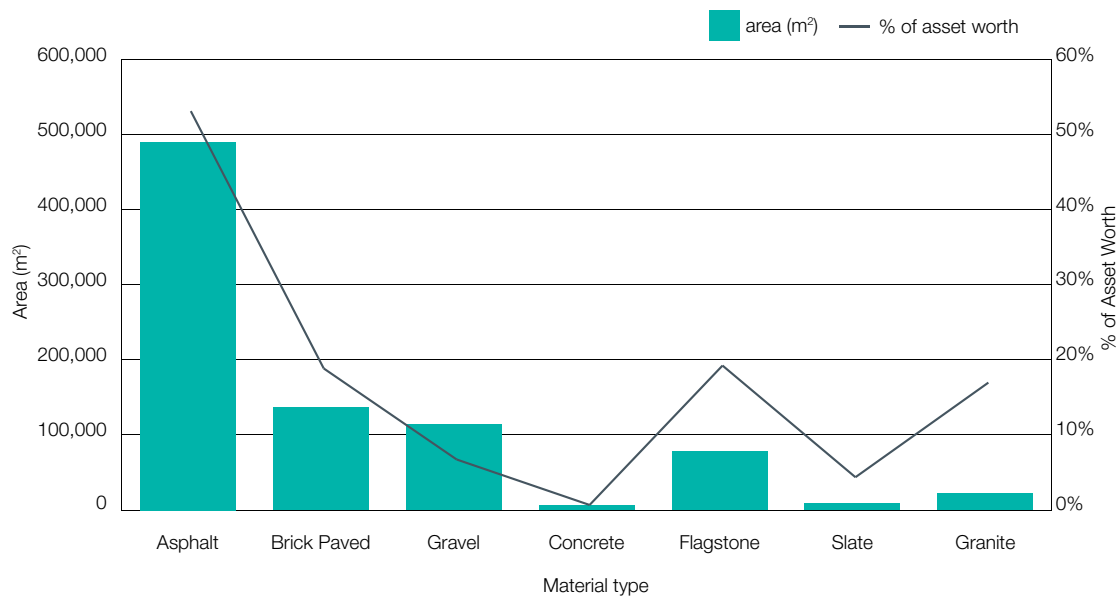
Figure 2 (Roads): Asset Age Profile



Footpaths

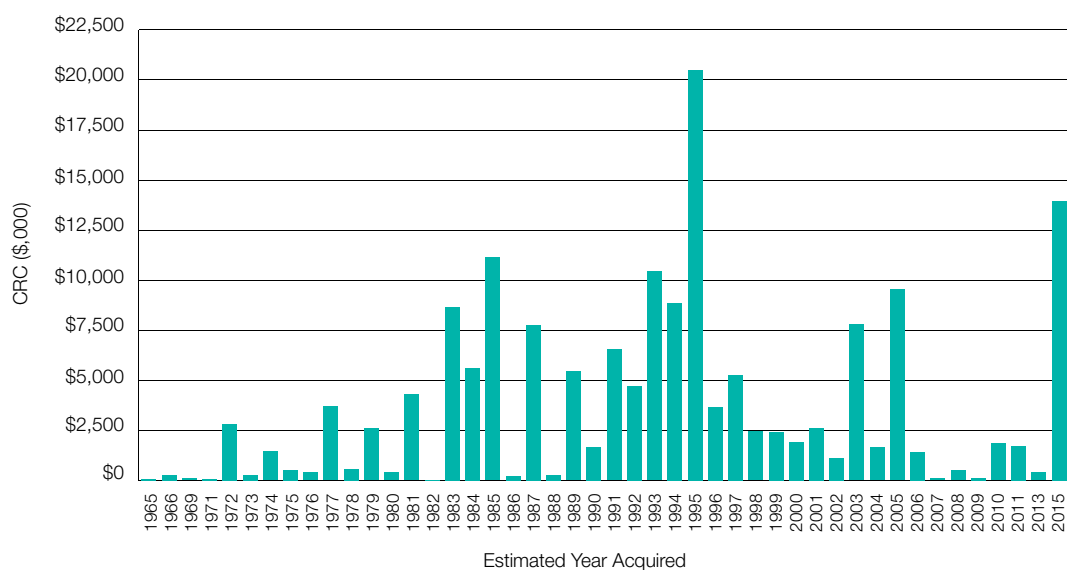
Council's footpath network can be divided up into two main categories: street footpaths and Park Lands paths. Footpath network surface materials include asphalt, brick pavers, gravel, concrete, flagstones, slate, and granite. Figure 2A below shows the distribution of footpath material type and their associated worth.

Figure 2A (Footpaths): Distribution of footpath material type and asset worth



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

Figure 2 (Footpaths): Asset Age Profile

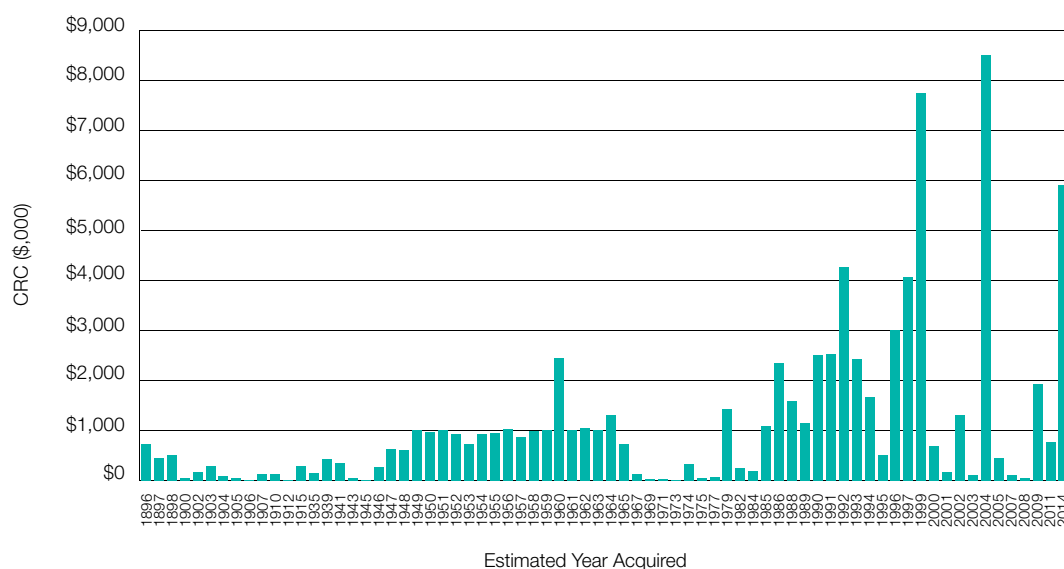


The age profile in Figure 2 was established using a condition based assessment, as asset age information was not readily available. Thus the confidence in the age profile reduces for assets with lower Remaining Useful Lives (RUL) values. Future revisions of the AM plan will include installation / previous renewal dates to improve data confidence. The figure shows a significant proportion of assets constructed, acquired and / or renewed from 2014 - 15 reflecting recent capital upgrades including Victoria Square and Rundle Mall redevelopments.

Kerb and Water Table

There are four types of materials for the Kerb and Water Table Asset Class: stone, brick, concrete insitu, and plastic moulded, which all have separate unit rates for minor and major roads. The majority of roads across the network have an associated kerb and water table on each side of the carriageway. The age profile in Figure 2 is established using a condition based assessment. Thus the confidence in the age profile reduces with age. Kerb and water table assets have physical lives of 70 to 120 years, hence the rate of deterioration is low for the majority of their service life.

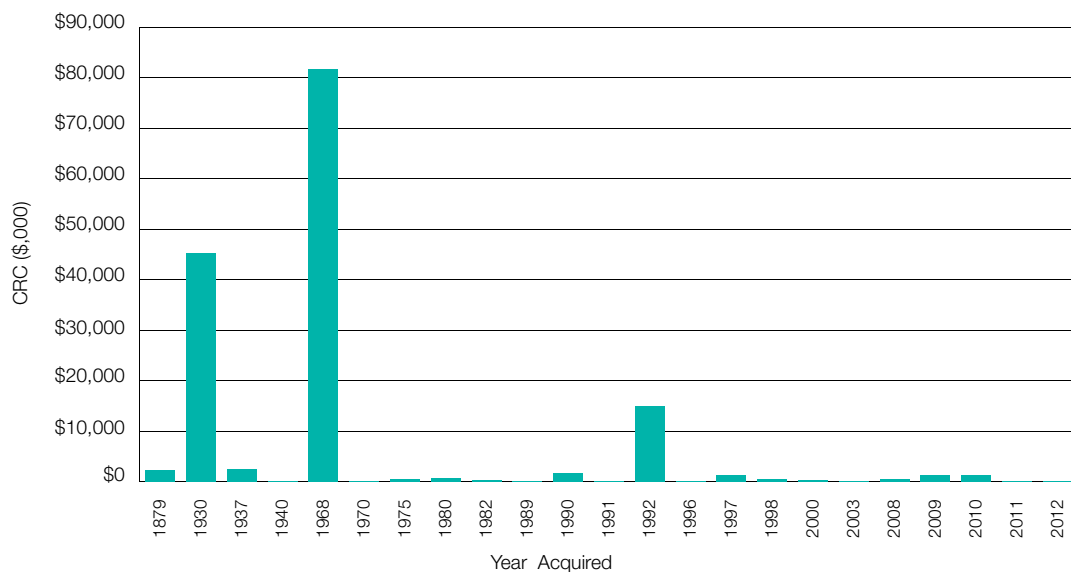
Figure 2 (Kerb and Water Table): Asset Age Profile



Bridges

Council's Bridge Asset Class is currently comprised of five road bridges (Adelaide Bridge, Albert Bridge, Morphett Bridge, Victoria Bridge, and Port Road Bridge), three major footbridges (University Footbridge, Adelaide Zoo Footbridge, and Lightning Footbridge), and 38 minor footbridges (a number of which are culvert footbridges). It is also important to note that Adelaide Bridge, Albert Bridge, and the University Footbridge all have heritage significance and are listed on the Register of National Estate. The large peak in complete renewal cost (CRC) in 1968 accounts for the construction of both the Morphett Bridge and the Victoria Bridge, the peak in 1930 is associated with the construction of Adelaide Bridge, and lastly the peak in 1992 accounts for the construction of Port Road Bridge.

Figure 2 (Bridges): Asset Age Profile



Traffic Signals

Council is serviced by a predominantly grid shaped road network with a total of 131 traffic signal sites comprising of signalised intersections, pedestrian actuated crossings, a wombat crossing, and koala (signalised school) crossing. Each signalised site has a number of individual traffic signal components, each made up of the following components: audio tactiles, cables, conduits, controllers, detectors, lanterns, poles (low level), poles (overhead), and target boards.

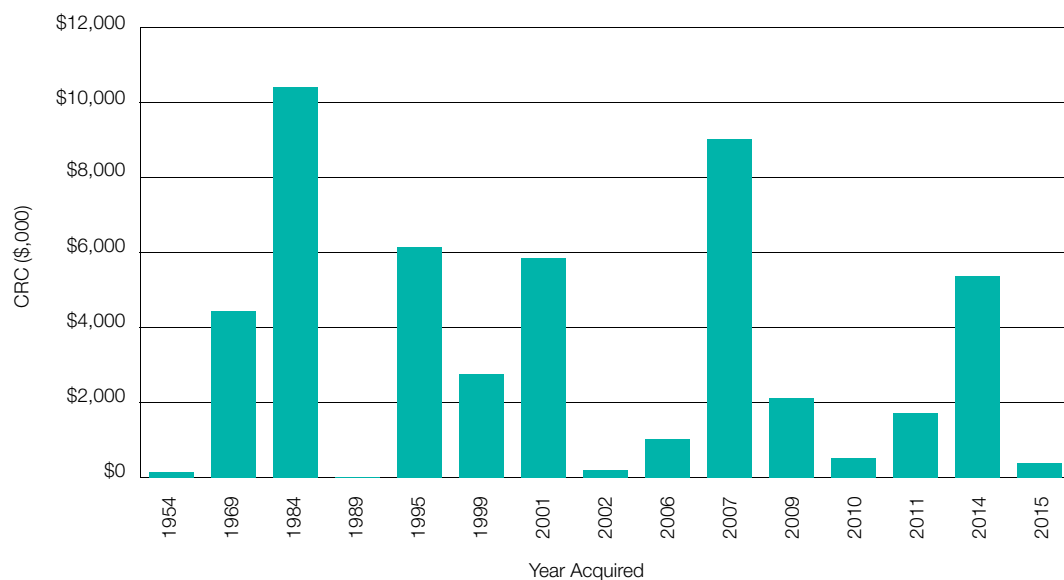
These combined components which make up an individual signalised site, are considered assets of high importance to the road network. Signalised intersections provide a safe, sustainable, and efficient road network, and to do so, all components of the traffic signals must function effectively and efficiently. Although the traffic signal assets are owned by Council, the traffic signals are operated by the Department of Planning, Transport, and Infrastructure (DPTI) at the Traffic Management Centre (TMC) located in Norwood on behalf of Council through a fee based Deed of Agreement for Traffic Management Services.

The responsibility for the management of the traffic signals sites sits with Infrastructure Management, and Public Realm's Mechanical and Electrical Services team is responsible for superintending the maintenance contract delivered by external contractors under a term agreement.

Council's current traffic signal assets are ageing, and in various locations the asset age exceeds the asset life expectancy. For these assets, there are spare components stored for reinstatement when required. Generally through, the installations are operating to a satisfactorily level in regards to performance and functionality.

Although installation dates for the majority of sites exist, the graph shows several spikes – due to significant upgrades of certain components such as LED lanterns and controllers.

Figure 2 (Traffic Signals): Asset Age Profile



5.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Asset class	Location	Service deficiency
Roads	Currie Street and Grenfell Street (bus lanes).	Premature pavement failure due to excessive loading.
	Various locations within the road network (NAASRA Class 6 and 7 Roads).	Premature pavement failure due to excessive loading.
Footpaths	Known performance deficiencies have not yet been recorded.	NA
Kerb and water table	Known performance deficiencies have not yet been recorded.	NA
Bridges	Not all performance deficiencies have yet been identified and recorded.	Morphett Street Bridge Vehicle Barrier to be brought up to current standards.
Traffic signals	Various locations throughout the city, but mainly associated with major developments and projects, road works, essential services, and Council projects such as road reseals.	The inductive road detectors or loops at intersections are regularly cut and damaged due to services, developments, and other projects. Some signalised intersections temporarily operate at less than maximum efficiency until the loops are repaired.

The above service deficiencies were identified from technical knowledge and expertise from existing systems and staff.

5.1.3 Asset condition

Condition is measured using a one to five grading system⁸ as detailed in Table 5.1.3.

Table 5.1.3: Simple Condition Grading Model

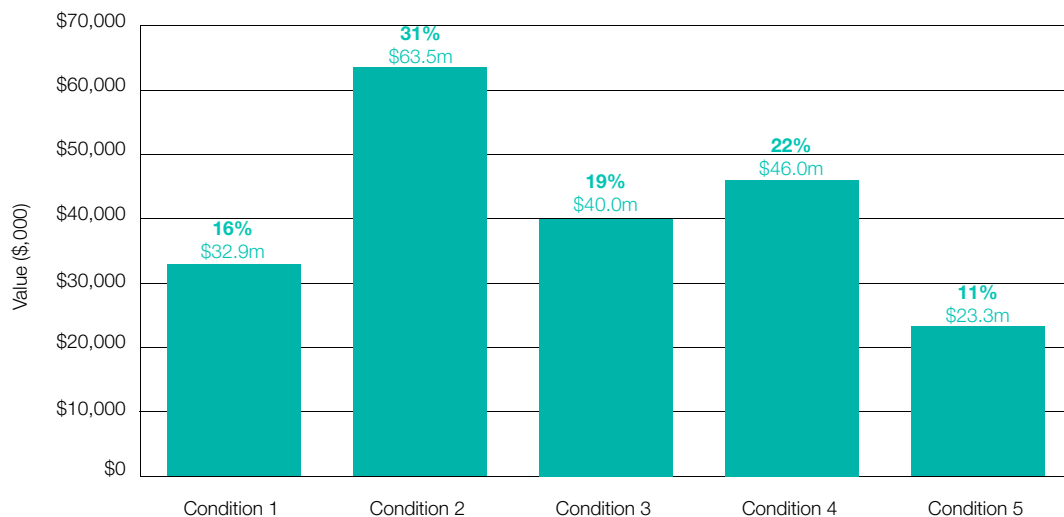
Condition grading	Description of condition	
1	Very Good: only planned maintenance required.	(0 – 20% consumed)
2	Good: minor maintenance required plus planned maintenance.	(20 – 40% consumed)
3	Fair: significant maintenance required.	(40 – 60% consumed)
4	Poor: significant renewal / rehabilitation required.	(60 – 80% consumed)
5	Very Poor: beyond rehabilitation and need complete renewal.	(80 – 100% consumed)

⁸ IPWEA, 2011, IIMM, Sec 2.5.4, p 2|79.

Roads

Condition audits of Council's road network were undertaken externally by Pavement Management Services, most recently in mid-2014. The seal condition was obtained through a high speed data collection process, where extent and severity of a number of defects (cracking, roughness, rutting, etc) were used to obtain an overall condition assessment of a road seal (i.e. Condition 1 - 5). FWD (Falling Weight Deflectometer) tests were also undertaken on the road network to obtain estimates for the pavements' remaining useful life. Council then internally determined the condition ratings by using the remaining useful life of each pavement and the expected physical life of each pavement, to calculate a consumption percentage. Pavements that were 0-20% consumed were given a Condition 1, 20-40% - Condition 2, 40-60% - Condition 3, 60-80% - Condition 4, and 80-100% - Condition 5. The condition profile of the road network, including both seal and pavement, is shown in Figure 3.

Figure 3 (Roads): Asset Condition Profile



The condition profile shows that while there are a lot of roads in Condition 1 and 2, 33% of the road network is in Condition 4 and 5.

Below are two extreme examples of Condition 5 roads within Council's road network. The image on the left highlights severe seal delamination and the image on the right shows base failure which has resulted in severe crocodile cracking in the asphalt surface. Not only do these defects look poor aesthetically, but both of these failure mechanisms put the users (vehicles, bicycles, pedestrians) of the network at risk due to the unevenness in the surfaces.

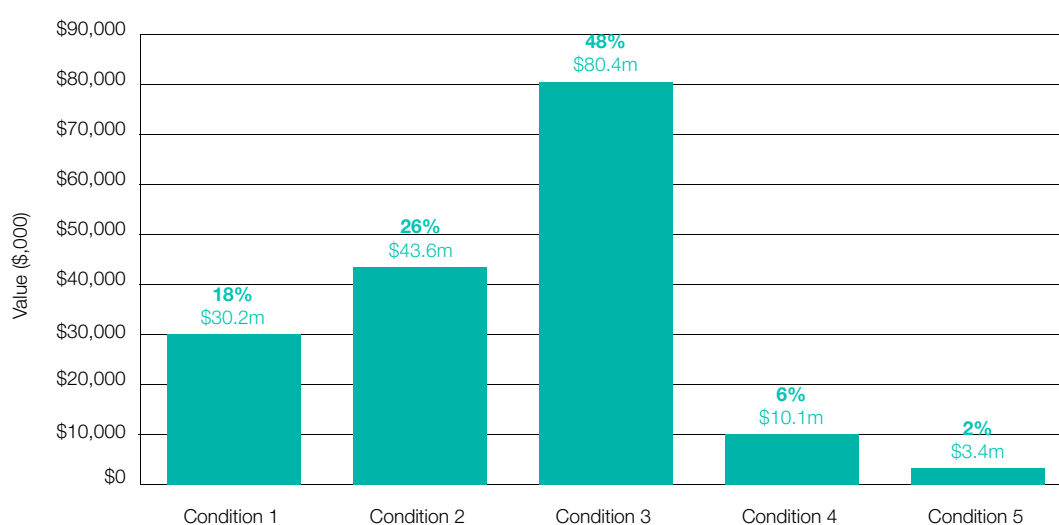


While not all Condition 5 road assets within the Council road network display failures of this severity, the above images provide a good representation of what the road network can be expected to deteriorate to if sufficient roads are not renewed in the coming years.

Footpaths

Condition is currently monitored on a four year basis; the most recent review occurring during 2012 - 13. Subsequently the condition knowledge and profile of the footpath assets is regarded as a low-medium confidence assessment. The condition profile of our assets is shown in Figure 3.

Figure 3 (Footpaths): Asset Condition Profile

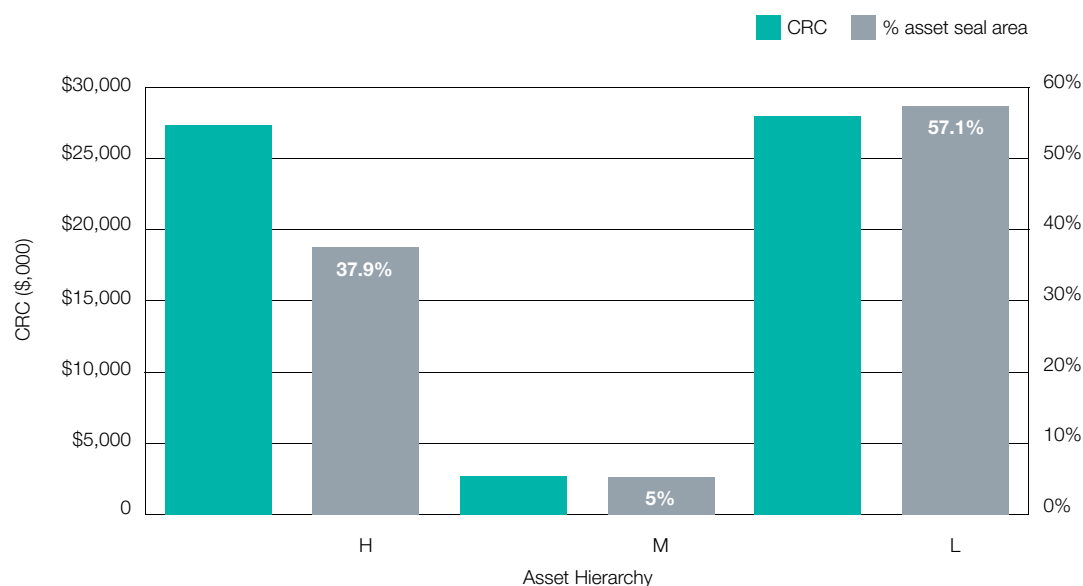


As per Figure 3, the majority of the footpath asset stock (48%) is at Condition 3 which indicates that these assets are at the half way point of their physical lives. As the assets physically deteriorate it requires more effort to maintain the intended level of service it provides to the community. This leads to increased maintenance costs and risks (these risks will be discussed in Section 5.2). It is therefore important to identify the optimum intervention point for renewal / upgrade works whereby the Lifecycle cost of the asset is optimised. This point is referred to as the Economic Life of the asset. Renewing the asset stock at the end of its economic life will help to ensure Council is providing and maintaining its asset base in a financially sustainable manner. A review of the economic life for each of the footpath assets is currently underway and will be featured in future revisions of this AM plan.

If poor physical condition of an asset was the only criteria used to justify a renewal then by Figure 3 only 2% of the total network value needs to be renewed. Renewing / upgrading on physical condition alone can become problematic. Function, capacity of network to meet demand, sufficient utilisation of the asset, level of risk, aesthetics, and social influence also play a role in determining the level of service the assets provide to the community. Another important variable to consider is how important the individual criteria are for the asset group in question. Function, utilisation, and geographic location are just some of the aspects used to determine the importance of the criteria on the asset. It is a combination of these factors that are used to determine an asset hierarchy which informs decision makers on what assets need to be renewed / upgraded and when. Typically, the higher the class within the hierarchy, the higher the level of service that asset base is expected to provide.

Figure 3A below highlights the spread of street footpaths within the high, medium, and low class hierarchy groups. Although 37.9% of the seal area for street footpaths category is comprised of high classed footpaths it makes up for approximately 50% of the total asset worth for the category. It is also likely that this portion of the street footpaths assets will be renewed well before their physical life has been reached. Asset hierarchy and intervention levels will be discussed in subsequent sections.

Figure 3A (Footpaths): Street footpath Hierarchy – Current Replacement Cost and % seal area for Adelaide CBD



It is important to note that preliminary indications of the current footpaths audit, to be completed by April 2016, indicate the footpath condition is significantly worse than currently recorded. This AM Plan will be updated when this data becomes available, and either service levels or maintenance and renewal funding levels will be revised.

The visual representation of the condition assessment for footpath assets is shown below in Table 5.1.3A

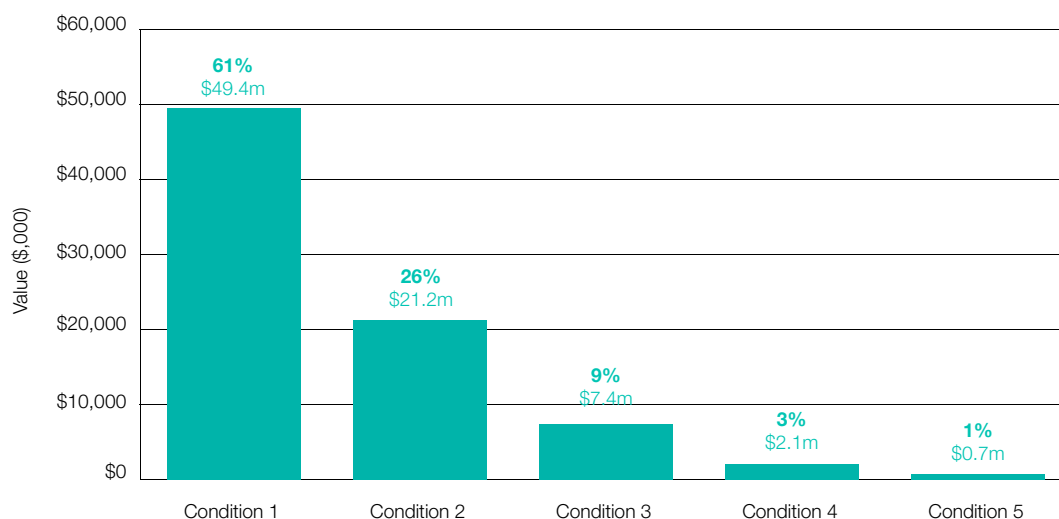
Table 5.1.3A: Simple Condition Grading Model

Condition grading	Description of condition	Visual description of condition			
1	Very Good: only planned maintenance required. 0% - 20% of asset physically consumed.				
2	Good: minor maintenance required plus planned maintenance. 20% - 40% of asset physically consumed.				
3	Fair: significant maintenance required. 40% - 60% of asset physically consumed.				
4	Poor: significant renewal / rehabilitation required. 60% - 80% of asset physically consumed.				
5	Very Poor: physically unsound and / or beyond rehabilitation. 80% - 100% of asset physically consumed.				

Kerb and Water Table

Condition is monitored on a four year basis; the most current review occurred during 2013 - 14. The condition knowledge and profile of the footpath assets is regarded as a medium-high confidence assessment. The condition profile of our assets is shown in Figure 3.

Figure 3 (Kerb and Water Table): Asset Condition Profile

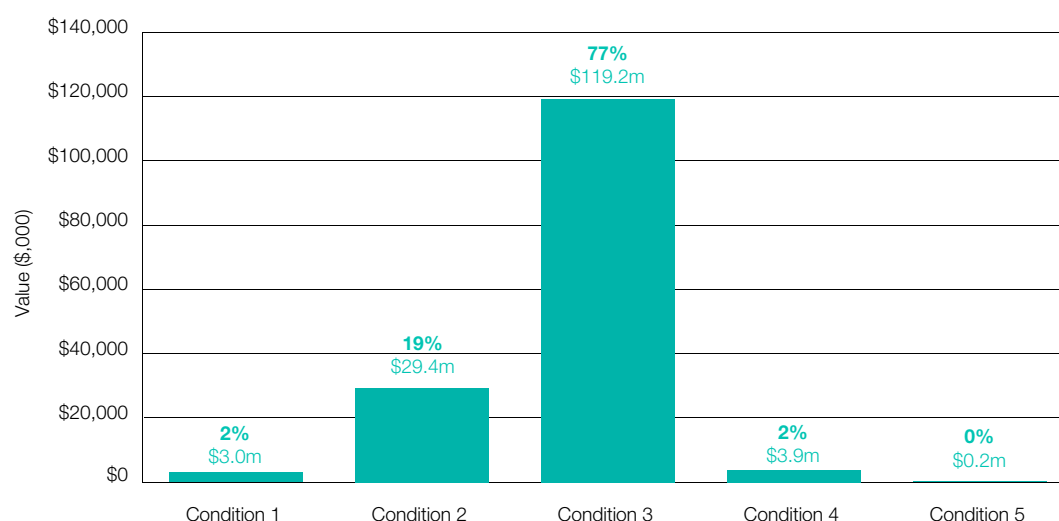


As discussed in Section 5.1.1, kerb and water table assets have high physical lives (70 to 120 years) and hence the rate of deterioration is low for the majority of their service life. This means the asset spends the majority of its service life as a Condition 1 and 2 rating, as depicted in Figure 3 above. Overall the asset is in good health with only \$3.6 million of assets in Condition 4 or worse.

Bridges

The condition profile of all bridge assets is shown in Figure 3. This graph highlights 98% of the network's condition ranges between excellent (Condition 1) and fair condition (Condition 3). It is important to note that the 77% of the network rated in a fair condition (Condition 3), accounts for the aging bridges in the network such as Albert Bridge, Adelaide Bridge, Morphett Bridge, Victoria Bridge. The health and structural integrity of these bridges will be managed through undertaking rehabilitation treatments, to ensure that all components remain in Condition 3 and do not fall into Condition 4 or 5, at least until a significant change in demand is evident and bridges may be upgraded.

Figure 3 (Bridges): Asset Condition Profile



The asset condition for all components of the major road bridges and major foot bridges was determined through Level 2 and Level 3 bridge inspections undertaken by GHD in April 2015. For the minor footbridges, the asset condition was collected through internal through a Level 2 bridge inspections completed in December 2015. These inspections followed VicRoads bridge management processes and inspections manuals.

Traffic Signals

Asset condition was assessed through consultants GHD in October 2012, resulting in *The Adelaide City Council Traffic Signal AM Plan* and *Summary Asset Condition Report*. The condition audits are a tool to assist in the strategic management of an asset. Current maintenance contractors undertake programmed routine maintenance inspections every six months to assist in identifying any change in condition of the assets and to assist planning works and capital renewals. The condition profile of our assets is shown in Figure 3.

Figure 3 (Traffic Signals): Asset Condition Profile

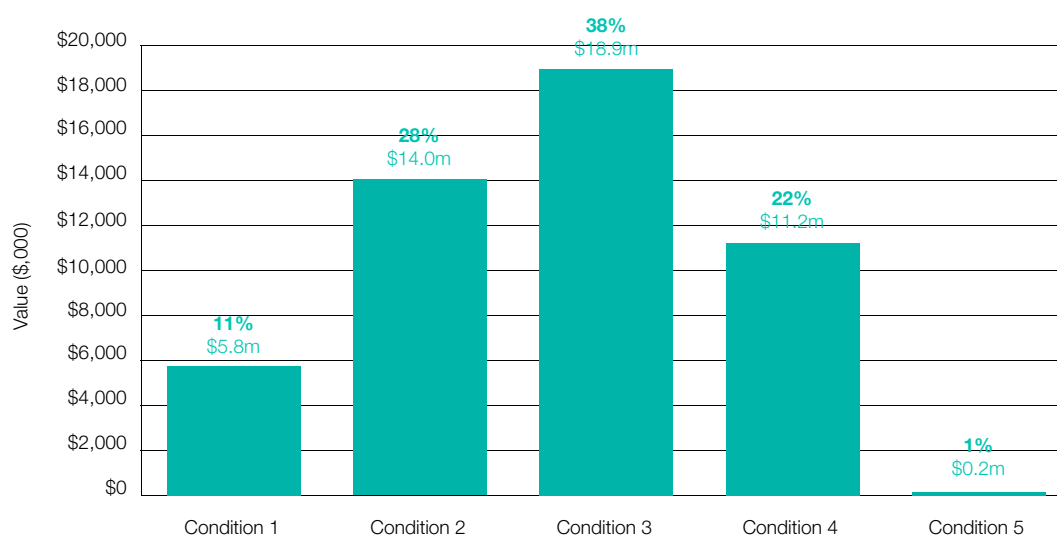
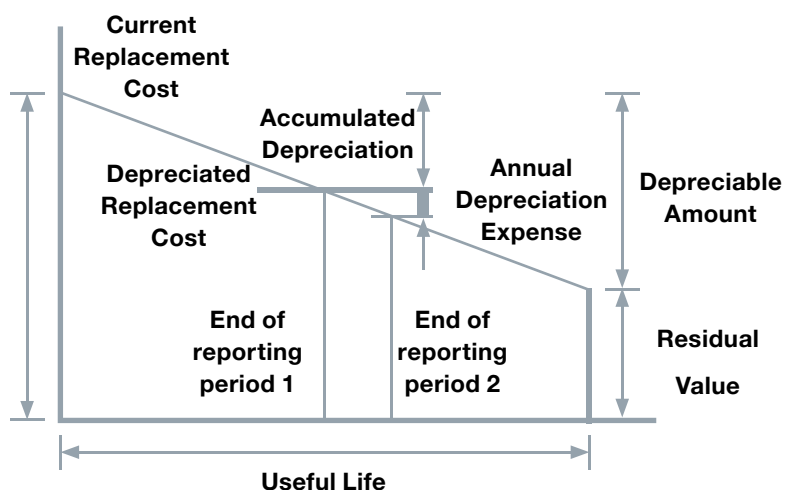


Figure 3 clearly shows that the majority of assets have a condition rating of '3' which indicates a 'Fair' rating with regular maintenance required to maintain the assets. These assets if not maintained or upgraded accordingly will quickly become 'Poor' or 'Very Poor' condition which will increase the amount of capital required to sustain these assets.

5.1.4 Asset valuations

The value of assets recorded in the asset register as of December 2015, covered by this AM Plan is shown below in Table 5.1.4. Assets were last revalued in June 2014 for the roads, footpaths, and kerb and water table, April 2015 by GHD for bridges, and in November 2012 by GHD for traffic signal infrastructure. All assets have been valued using a brownfield replacement cost methodology and useful lives were reviewed internally in July 2014.



Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time. These were developed in June 2015 and are shown in Table 5.1.4 below for each asset class.

Table 5.1.4: Asset Valuations

Asset valuations	Roads	Footpaths	Kerb and water table	Bridges	Traffic signals
Current replacement cost	\$205,691,000	\$167,539,000	\$80,804,000	\$155,759,000	\$50,100,000
Depreciable amount	\$205,691,000	\$167,539,000	\$80,804,000	\$155,759,000	\$50,100,000
Depreciated replacement cost	\$96,903,000	\$79,911,000	\$45,384,000	\$79,471,000	\$27,269,000
Annual depreciation expense	\$4,672,000	\$4,211,000	\$1,068,000	\$1,503,000	\$2,027,000
Rate of annual asset consumption	2.3%	2.5%	1.3%	1.0%	4.0%
Rate of annual asset renewal	3.4%	1.0%	0.0%	0.1%	1.7%
Asset renewal / consumption %	147.7%	38.0%	0.0%	12.0%	43.2%
Asset upgrade / new + contribution %	0.0%	0.1%	0.0%	0.0%	0%

Revaluations undertaken for Traffic Signal Infrastructure in 2015 will be incorporated in the next revision of the AM Plan and reflected accordingly in Table 5.1.4.

To provide services in a financially sustainable manner, Council will need to ensure that it is renewing assets at a rate equivalent to their consumption over the medium-long term. It is also important to consider the increased costs (operating and maintenance) of additional new / upgraded assets before they are added to the asset portfolio. Future iterations of this AM plan will include an updated LTFP forecast influenced from the results highlighted in previous iterations of this AM Plan.

Key assumptions made in preparing the valuations were:

Roads

All road assets have been valued using brownfield replacement cost methodology and the unit rates used for roads in this AM Plan are from the Council unit rate library (ACC2014 / 150505). These rates are summarised below:

Road component	Road classification	Unit rate
Seal	Class 6	\$27 / m ²
	Class 7	\$27 / m ²
	Class 8 and 9	\$14 / m ²
Pavement	Class 6	\$171 / m ²
	Class 7	\$144 / m ²
	Class 8 and 9	\$42 / m ²

Footpaths

All footpath assets have been valued using brownfield replacement cost methodology and the unit rates used for roads in this AM Plan are from the Council unit rate library (ACC2014 / 150505). These rates are summarised below:

Footpath material	Unit rate
Asphalt	\$146 / m ²
Brick pavers	\$186 / m ²
Gravel	\$85 / m ²
Concrete	\$143 / m ²
Flagstone	\$333 / m ²
Slate	\$726 / m ²
Granite	\$968 / m ²
Victoria Square granite	\$1,113 / m ²

Kerb and Water Table

All kerb and water table assets have been valued using brownfield replacement cost methodology and the unit rates used for roads in this AM Plan are from the Council unit rate library (ACC2014 / 150505). These rates are summarised below:

Road component	Road classification	Unit rate
Concrete kerb and water table	Minor	\$341 / m
	Major	\$640 / m
Bluestone kerb and water table	All	\$1,276 / m
Plastic kerb and water table	All	\$341 / m
Concrete spoon drain	Minor	\$341 / m
	Major	\$640 / m
Bluestone spoon drain	All	\$1,276 / m

Bridges

All bridge infrastructure components have been valued using brownfield replacement cost methodology by GHD consulting engineers and RLB quantity surveyors in 2015 using industry standard unit rates.

Traffic Signals

2014 - 15 valuations of the traffic signal network were derived from *The Adelaide City Council Traffic Signal AM Plan and Summary Asset Condition Report* prepared by GHD in March 2013. In order to get existing valuations into 2014 - 15 dollars, the original valuation was compounded 3% annually.

5.1.5 Historical data

All historical data for transportation infrastructure, including locations, installation dates, dimensions, and material types, can be found in Council's asset register databases. GIS data for the locations with respect to the city of Adelaide and its surroundings is also available in RAMM GIS. Relevant financial expenditure information for the Council's transport infrastructure can also be viewed in the Hansen database.

Council's 2008 AM Plan for Transportation can be also be found in TRIM (ACC2008 / 141284).

5.2 Infrastructure Risk Management Plan

An assessment of risks⁹ associated with service delivery from infrastructure assets has identified critical risks that will potentially result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk, and develops a risk treatment plan for non-acceptable risks.

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

⁹ 2014 Transportation Risk Register (TRIM Link ACC2014 / 185024)

Table 5.2: Critical Risks and Treatment Plans

Asset class	Service or asset at risk	What can happen	Risk rating (VH, H)	Risk Treatment Plan	Residual risk*	Treatment costs
All Transportation Assets	All Transportation Assets	Increasing financial pressure to adequately sustain current service levels. Assets deteriorate to a lesser service standard resulting in a higher risk situation. Premature failure of some assets.	High	Continue to improve data and knowledge by carrying our targeted inspections. Required renewal of asset components may be achieved in the short to medium term. Future planning improvements can be made by documenting service level risks and utilisation of these in establishing future renewal priorities.	Medium	Within existing budget (staff time). Data collection.
Roads	Roads	Premature failure of some assets.	High	Future planning improvements can be made by documenting service level risks and applying new design standards to meet increased demand.	Medium	Within existing budget (staff time). External consultants.
	Vehicles and persons utilizing roads	Vehicles damaged and / or persons injured due to street trees not being trimmed to accommodate traffic (e.g. new double decker buses being introduced for J1X bus route in 2014).	High	Increased levels of service for tree trimming maintenance to be undertaken by Public Realm to maintain clearance levels to a height of 5 metres at the kerbside for trees along the J1X bus route 4 metres at the kerbside, and a clearance level of.	Medium	TBD by Public Realm.

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

Table 5.2: Critical Risks and Treatment Plans *continued*

Asset class	Service or asset at risk	What can happen	Risk rating (VH, H)	Risk Treatment Plan	Residual risk*	Treatment costs
Footpath	Footpaths	Footpaths deteriorate to a lesser service standard resulting in a higher risk situation.	High	Required renewal / upgrades of footpath network may be achieved in the short to medium term. Identified from prioritisation matrix.	Medium	Within existing budget (staff time).
	Footpaths	Premature failure of some assets.	High	Future planning improvements (ADM) can be made by documenting service level risks and applying new design standards to meet increased demand.	Medium	Within existing budget (staff time). External consultants.
	Footpaths	Tripping hazards / access restrictions.	High	Frequent inspections of footpath network to identify service defects. Expedite DDA compliance program for high risk assets.	Medium	1 FTE shared amongst other asset groups for inspections (\$20,000).
Kerb and water table	No critical risks	-	-	-	-	-

*The residual risk is the risk remaining after the selected Risk Treatment Plan is operational.

Table 5.2: Critical Risks and Treatment Plans *continued*

Asset class	Service or asset at risk	What can happen	Risk rating (VH, H)	Risk Treatment Plan	Residual risk *	Treatment costs
Bridges	All bridges	Structural failure due to material fatigue.	High	External Level 3 audit undertaken by consultants for road bridges and major footbridges every four years.	Medium	\$80,000 every four years.
	All bridges	Structural failure due to exceeding design load capacities, or capacity of bridge reducing over time.	High	Load ratings verified as acceptable for bridge utilisation through testing undertaken externally for all road bridges and major foot bridges.	Medium	Included within above \$80,000 p.a.
	Morphett Bridge	Cars crashing off of bridge or into pedestrian traffic.	High	Installation of crash barriers, mounted into bridge structure.	Medium	~\$3.05 million total.
	Bridges crossing rivers	Reduced structural integrity due to erosion around footings, abutments, and piers.	High	Installation of gabion baskets and mattresses at locations susceptible to significant erosion for next bridge renewal.	Medium	Incorporated into next renewal of bridge.
Traffic signals	All signalised sites	Failure of SCATS (Sydney Coordinated Adaptive Traffic System) leading to traffic congestion.	High	Maintain relationship and regularly meet with DPTI, who oversee the operation of the SCATS network.	Medium	As per deed of agreement for traffic management services.
	All signalised sites	Fatality or serious injury due to safety deficiencies.	High	Road Safety Audits for all sites along with completion of AM Plan and Improvement Plan.	Medium	\$100,000 - estimated.

Note * The residual risk is the risk remaining after the selected Risk Treatment Plan is operational.

5.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety, and amenity, e.g. cleansing and street sweeping.

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

5.3.1 Operations and maintenance plan

Operations activities affect service levels including quality and function through street sweeping and grass mowing frequency, intensity of street lights and cleaning frequency, and opening hours of building and other facilities.

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, e.g. road patching but excluding rehabilitation or renewal. Maintenance may be classified into reactive, planned, and specific maintenance work activities.

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

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

Specific maintenance is replacement of higher value components / sub-components of assets undertaken on a regular cycle including repainting, replacing air conditioning units. This work falls below the capital threshold but may require a specific budget allocation.

Actual past maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure Trends

Asset class	Year	Maintenance expenditure		Planned maintenance % total maintenance expenditure
		Planned and specific	Unplanned	
Roads	2012 - 13	\$0	\$518,966	0%
	2013 - 14	\$0	\$527,322	
	2014 - 15	\$0	\$530,659	
Footpaths	2012 - 13	\$0	\$754,000	0%
	2013 - 14	\$0	\$811,000	
	2014 - 15	\$0	\$828,000	
Kerb and water table	2012 - 13	\$0	\$121,742	0%
	2013 - 14	\$0	\$86,216	
	2014 - 15	\$0	\$115,895	
Bridges	2012 - 13	\$0	\$42,000	0%
	2013 - 14	\$0	\$59,000	
	2014 - 15	\$0	\$59,000	
Traffic signals	2012 - 13	\$264,000	\$175,000	59.2%
	2013 - 14	\$290,000	\$203,000	
	2014 - 15	\$290,000	\$203,000	

Whilst past maintenance expenditure levels were inadequate to meet projected service levels, funding levels will be increased in 2015 - 16 and beyond. The service consequences of inadequate maintenance funding have been identified and highlighted in this AM Plan and the risks considered in the Infrastructure Risk Management Plan.

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

There are no specific maintenance tasks that have been recorded within this AM Plan. As internal processes mature, the majority of maintenance expenditure will be planned maintenance to improve efficiency. In the coming 2015 - 16 financial year proactive planned maintenance programs have been developed for the road, footpath, and kerb and water table networks. Not only does this allow for more efficient use of the maintenance budget, but it will also decrease the amount of reactive maintenance and the associated risk (i.e. waiting for something to go wrong and then reacting).

5.3.2 Operations and maintenance strategies

The organisation will operate and maintain assets to best provide the defined level of service within approved budgets in the most cost-effective manner. Operation and maintenance activities include:

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

Asset hierarchy

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

The organisation's service hierarchy is shown in Table 5.3.2.1.

Table 5.3.2.1: Asset Service Hierarchy

Asset class	Service hierarchy	Service level objective
Roads	Class 6 Roads	Provide safe and effective roads for the primary avenues of transportation for vehicles, public transport, and cyclists within the CBD.
	Class 7 Roads	Provide safe and effective roads for the supplementary avenues of transportation for vehicles, public transport, and cyclists within the CBD.
	Class 8 Roads	Provide safe and effective roads for accessing abutting property (outside of Class 6 and 7 roads).
	Class 9 Roads	Provide safe and effective roads which generally service exclusively one activity or function (outside of Class 6, 7, 8 roads).
Footpaths	Street footpaths	<p>The footpath network provides safe movement of people and provides access to key destinations. Footpaths meet design standards for footpath width, slope, and enables use for people with impairments. Streets can be easily and safely crossed with minimal delay. Footpaths are clean and free from threat (adequate lighting).</p> <p>Footpaths encourage pedestrian use and help to support healthy lifestyles. The service level objective of each individual footpath will be reflected in the volumes of pedestrian traffic it receives (See Table 5.4.A - footpaths).</p>
	Park Lands paths	<p>The footpath network provides safe movement of people and provides access to key destinations. Footpaths meet design standards for footpath width, slope, and enables use for people with impairments and for bicycle traffic (shared paths). Footpaths are free from threat (adequate lighting). Footpaths encourage pedestrian use and help to support healthy lifestyles. Routes are interesting and encourage people to use them. The service level objective of each individual footpath will be reflected in the volumes of pedestrian traffic it receives (See Table 5.4.A - footpaths).</p>
Kerb and water table	In alignment with the road hierarchy	Kerb and water table assets provide the community a safe and effective way of channelling stormwater off roads and away from properties to allow for safe pedestrian and vehicular movement during certain rainfall events.
Bridges	Road bridges	Provide a safe and structurally secure service, at the highest priority, for the convenient use of cars, pedestrians, and cyclists, whilst remaining visually complimentary to surroundings.
	Major footbridges	Provide a safe and structurally secure service, for the convenient use of pedestrians and cyclists, whilst remaining visually complimentary to surroundings.
	All other (minor Park Lands footbridges)	Provide a safe and structurally secure service, for the convenient use of pedestrians and cyclists, whilst remaining visually complimentary to surroundings.
Traffic signals	Signalised intersections – 104 sites	To provide all road users with safe, reliable, compliant, and efficient movement throughout the Council road network including sustainable transport options. The service level objective of each signalised intersection will be reflected in the volumes of pedestrian and vehicle traffic it receives (See Table 5.4.A – traffic signals).
	Pedestrian actuated crossings – 25 sites	To provide all road users with safe, reliable, compliant, and efficient movement throughout the Council road network including sustainable transport options. The service level objective of each pedestrian actuated crossing will be reflected in the volumes of pedestrian and vehicle traffic it receives (See Table 5.4.A – traffic signals).
	Wombat and koala crossings – 2 sites	To provide all road users with safe, reliable, compliant, and efficient movement throughout the Council road network including sustainable transport options.

Critical Assets

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

Operations and maintenance activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency and higher maintenance intervention levels. Critical asset failure modes and required operations and maintenance activities are detailed in Table 5.3.2.2.

Table 5.3.2.2: Critical Assets and Service Level Objectives

Asset class	Service hierarchy	Critical failure mode	Operations and maintenance activities
Roads	Bus lanes, Class 6 arterial roads	Seal and / or pavement failure leading to a reduction in service, especially through public transport routes.	Increased inspection frequency for high risk roads. Prioritise maintenance and renewal works for high risk assets within budget allocations.
Footpaths	All footpath assets	Trip hazard.	Increased inspection frequency of high risk footpaths. Prioritise maintenance and renewal works for high risk assets within budget allocations.
Kerb and water table	Water table	Lifted or bulging causing ponding / flooding.	Remove and replace.
Bridges	Road bridges	Structural failure due to material fatigue.	Level 1 Bridge Inspections conducted every 6 months. Level 2 Bridge Inspections conducted every 2 years. Level 3 Bridge Inspection to be externally conducted, if bridge components are flagged as high risk items in Level 2 Bridge Inspections. Level 3 Bridge Inspections are externally undertaken on 4 year cycles, to update estimations for remaining life of the bridge and its components.
	Road bridges	Structural failure due to reduced load bearing capacity over time or increased loading conditions.	Proposed through risk register that the load bearing capacities of the major road bridges are revisited, to account for the increase in bus traffic due to the <i>Smart Move Strategy</i> .
Traffic signals	Controller	Signal controller box failure due to fatigue / age.	Routine maintenance inspections conducted every 6 months to prevent this risk from occurring.
	Lanterns	Lantern failure due to LED fatigue / age.	Routine maintenance inspections conducted every 6 months to prevent this risk from occurring.
	SCATS (Cabling)	Cable either damaged or cut by third party resulting in system failure.	Third party reimbursement, for reinstatement of cabling.

Standards and specifications

Maintenance work is carried out in accordance with the following Standards and Specifications for all asset classes:

- *Construction and Maintenance Standards (2014), Public Realm Maintenance Services (ACC2014 / 185598);*
- *Bridge Maintenance Program (2014) (ACC2014 / 185598);*
- *AS 1742 – Manual of Uniform Traffic Control Devices;*
- *AS 2353 – Pedestrian push-button assemblies;*
- *AS 2339 – Traffic signal posts and attachments;*
- *AS 2578.1 – Traffic signal controllers – Physical and electrical compatibility;*
- *AS 2703 – Vehicle loop detector sensors;*
- *AS 2979 – Traffic signal mast arms;*
- *AS 4113.2 – Traffic signal lamps;*
- *AS / NZS 2053 – Conduit and fittings for electrical installations;*
- *AS / NZS 2144 – Traffic signal lanterns;*
- *AS / NZS 2276 – Cables for traffic signal installations;*
- *AS / NZS 3000 – Wiring Rules;*
- *AS / NZS 3017 – Electrical Installations – Verification Guidelines;*
- *AS / NZS 3019 – Electrical Installations – Periodic Verification;*
- *AS / NZS 4360 – Risk Management Specification;*
- *South Australian Electrical Act 1996;*
- *Austroads Part 7 - Traffic Signals;*
- *DPTI Master Specifications;*
- *Council Safe Operating Procedure ACC-GE-01 Working on or near Tram Lines;*
- *Adelaide City Council City Works Guidelines; and*
- *Adelaide City Council Pavement Profile Standard.*

All works, processes, and procedures used in maintenance activities associated with the electrical works shall be in accordance with the *Electrical Act 1996*. Electrical maintenance is not to be carried out live except as permitted under the *Electrical Act 1996*.

5.3.3 Summary of future operations and maintenance expenditures

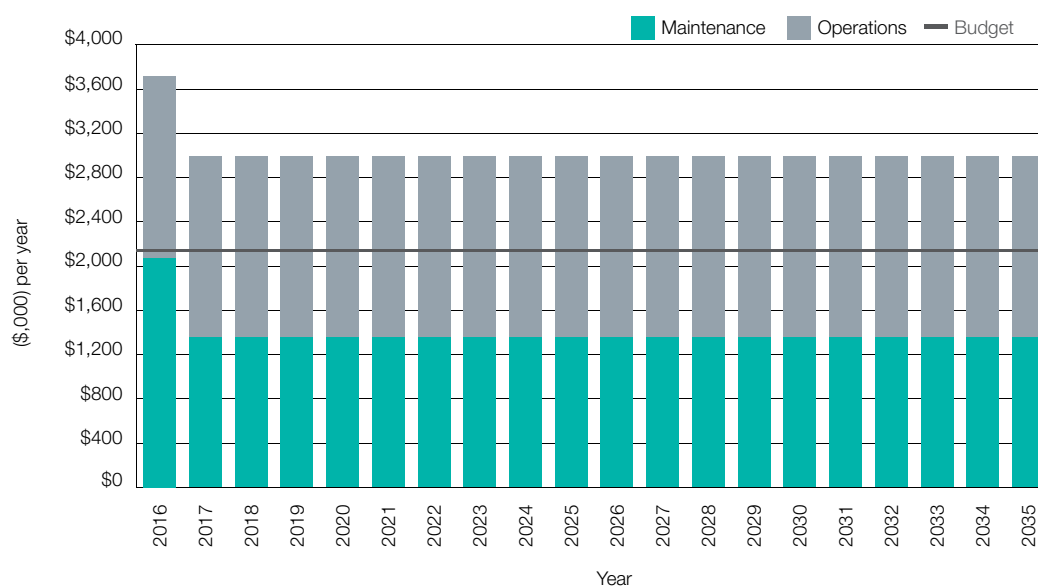
Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock. Note that all costs are shown in current 2014 - 15 dollar values (i.e. real values). Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the Infrastructure Risk Management Plan.

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

Roads

Figure 4 represents the projected operations and maintenance expenditure over the next 20 years. The budget line shown in Figure 4 was generated by adopting the current 2014 - 15 operations budget (street sweeping) of \$1,645,000 and the \$531,000 maintenance budget. With this current level of maintenance funding, only reactive maintenance triggered by internal and external notifications is undertaken. This means that often a large number of defects within the road will not be repaired under maintenance, due to the fact that not all defects will be reported. This could expose Council to an increased risk of injury as well as reduced life of the road pavement due to water ingress, and in turn result in higher renewal outlays.

Figure 4 (Roads): Projected Operations and Maintenance Expenditure



From 2015 - 16 onwards, periodic road defect inspections are planned to generate a planned maintenance program for the road network including proactive identification of defects addressing each in a timely manner. This will result in less external notifications / complaints about road defects and better maintenance resource use. This planned maintenance program to reach Council's desired levels of service, will require an increase in maintenance funding. From Figure 4, it is evident that there is a significant shortfall between the desired maintenance expenditure and the current 2014 - 15 maintenance funding levels. Therefore, it is recommended that from 2015 - 16 onwards, additional funding is allocated for planned road maintenance.

For roads, a revised asset maintenance schedule is currently being developed which will allow for more efficient maintenance delivery and financial reporting so that our level of service can be measured more accurately in the future.

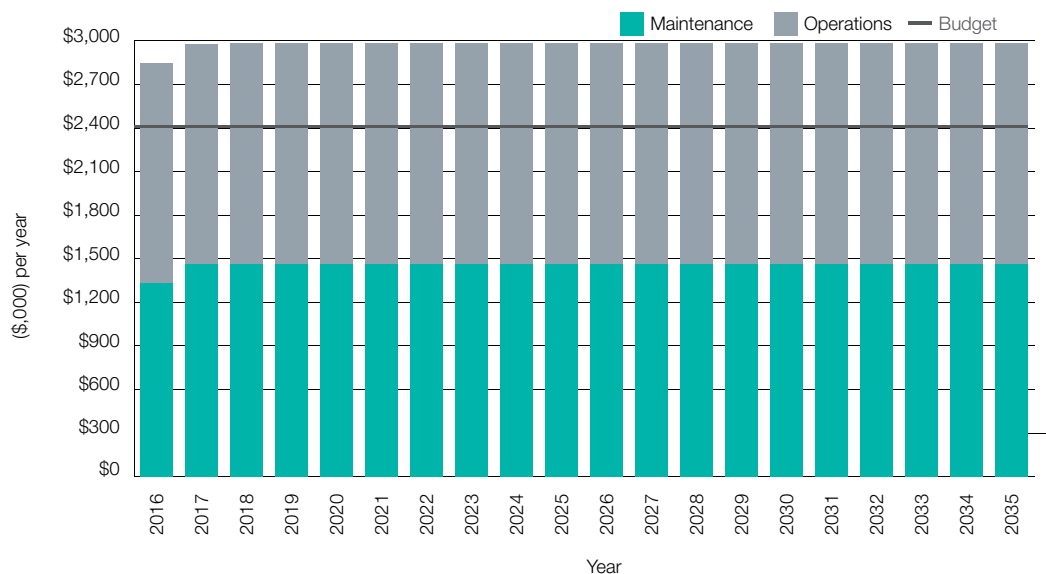
Footpaths

Although not easily visible in Figure 4 below, an increase in asset stock increases both operational and maintenance expenditure needs. This highlights the importance of taking a whole of asset lifecycle approach whereby increased resources are needed to meet new service levels brought about by new infrastructure. Similarly to roads, with the current footpath maintenance funding levels, only reactive maintenance triggered by internal and external notifications is undertaken. This means that often a number of defects within the footpath network will not be addressed, exposing Council to an increased risk of injury claims through unidentified trip or slip hazards.

Moving forward in 2015 - 16 onwards, periodic footpath defect inspections are planned to be undertaken, which will ultimately generate a planned maintenance program for the footpath network. In order to undertake these planned maintenance works, increased funding is required and will ultimately result in proactive identification and response for maintenance, ensuring that all critical defects in the footpath network are addressed in a timely manner. Again, this will reduce the amount of external notifications / complaints received for the footpath network and will reduce reactive maintenance. Therefore, it is recommended that from 2015 - 16 onwards, additional funding should be designated into a planned, more cost effective, footpath maintenance budget to eliminate this shortfall and a potential reduction in service levels.

Again, for footpaths, a revised asset maintenance schedule is currently being developed which will allow for more efficient maintenance delivery and financial reporting so that our level of service can be measured more accurately in the future.

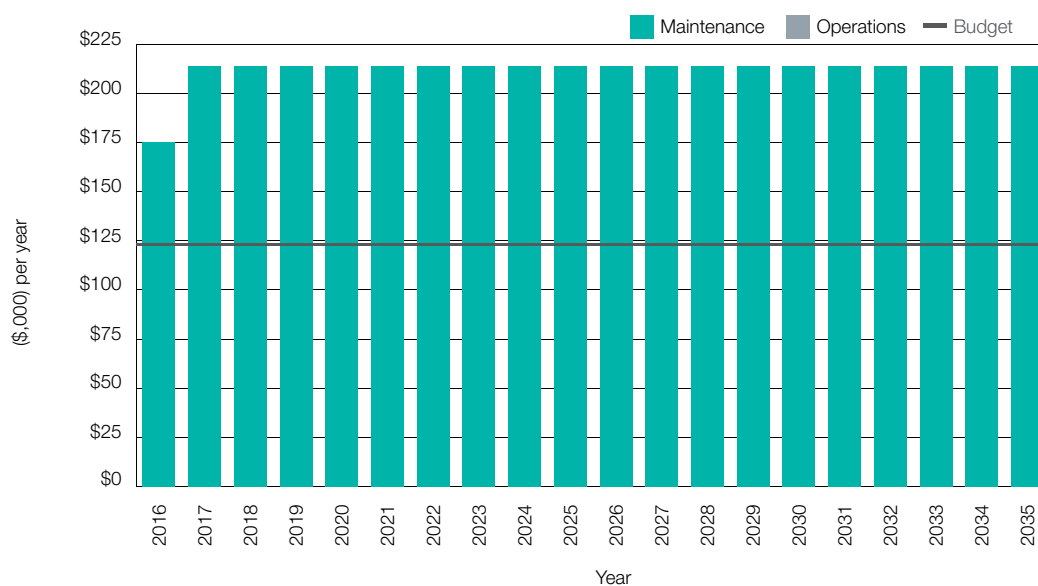
Figure 4 (Footpaths): Projected Operations and Maintenance Expenditure



Kerb and Water Table

Future operations and maintenance expenditure forecast for kerb and water table assets is shown in Figure 4. Again, the difference in the current budget and the proposed maintenance expenditure moving forward allows for the delivery of a planned maintenance program. While a planned maintenance program will require a higher budget, it will ultimately improve the service level of the asset class and reduce reactive works. A revised asset maintenance schedule is currently being developed which will allow for more efficient maintenance delivery and financial reporting so that the level of service can be measured more accurately.

Figure 4 (Kerb and Water Table): Projected Operations and Maintenance Expenditure



Bridges

Projections of future maintenance and operational costs are shown in Figure 4 below. This maintenance budget will generally account for smaller tasks, such as high pressure cleaning, repairing sections of decking timber, and replacing bolts in parkland footbridges. The difference in the current budget and the proposed maintenance expenditure moving forward allows for the delivery of a planned maintenance program. While a planned maintenance program will require a higher budget, it will ultimately improve the service level of the asset class, reduce customer complaints and reactive works, as well as ensure the asset reaches its intended useful life.

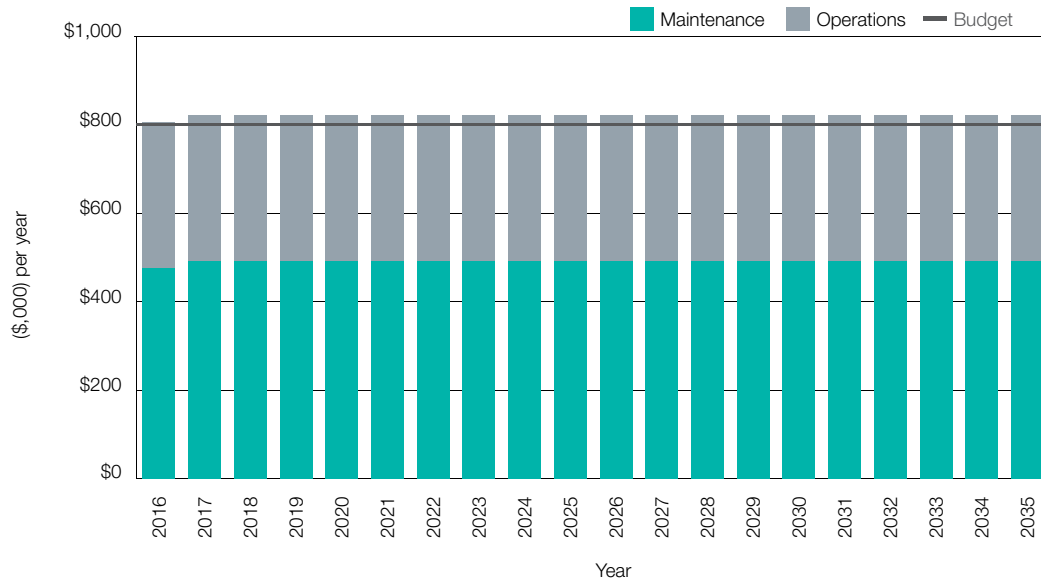
Figure 4 (Bridges): Projected Operations and Maintenance Expenditure



Traffic Signals

Figure 4 represents the projected operations and maintenance expenditure for the Traffic Signals Asset Class. There is already an established and efficient routine asset maintenance regime in place which assists in delivering an efficient maintenance and financial reporting system enabling our service levels to be measured accordingly.

Figure 4 (Traffic Signals): Projected Operations and Maintenance Expenditure



5.4 Renewal / Replacement Plan

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

5.4.1 Renewal plan

Assets requiring renewal / replacement are identified from one of three methods provided in the 'Expenditure Template'.

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year; or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems); or
- Method 3 uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the 'Expenditure template'.

Method 1 was used for the footpath, kerb and water table, traffic signals, and bridge assets within this AM Plan. It is recognised that the asset register used in Method 1 is developed to a level of maturity where it is reliable for producing a renewal forecast of medium to high confidence. The refinement of the asset register will become an important part of future AM plans and allow a renewal program of high to very high confidence to be obtained.

However, Method 2 was used for the roads component of the AM Plan.

An indicative estimate of the useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed on September 2014 (ACC2014 / 137601)

Table 5.4.1: Useful Lives of Assets

Asset class	Asset subcategory	Useful life (years)
Roads	Class 6 and 7 Road Seal	20
	Class 6 and 7 Road Pavement	50
	Class 8 and 9 Road Seal	25
	Class 8 and 9 Road Pavement	85
Footpaths (see section 5.4.A below)	Asphalt	50
	Brick Paved	50
	Gravel	30
	Concrete	70
	Flagstone	50
	Slate	50
	Granite	50
	Victoria Square Granite	50
Kerb and water table	Brick	70
	Stone	120
	Plastic Moulded	10
	Concrete Insitu	70
	Mixed	70

Table 5.4.1.1: Useful Lives of Assets *continued*

Asset class	Asset subcategory	Useful life (years)
Bridges	Road Bridge Asphalt Wearing Surface	20
	Road Bridge Deck Expansion Joints	40
	Road Bridge Balustrading	50
	Road Bridge Kerbing	50
	Road Bridge Footpaths	80
	Road Bridge Structural Concrete Elements	80
	Road Bridge Structural Steel Elements	80
	Road Bridge Bearings	40
	Minor Footbridge (Timber)	30
	Minor Footbridge (Recycled Plastic)	75
	Steel Substructure for Footbridge	50
	Timber Decking for Footbridge	30
	Timber Balustrading for Culvert Footbridges	25
	Substructure for Culvert Footbridges	80
Traffic signals	Audio Tactile	25
	Cables	60
	Conduits	60
	Controllers	10
	Detectors	15
	Lanterns	25
	Poles – Low Level	25
	Poles – Overhead	25

It is important to note that these updated useful life estimates are based on previous renewal trends, technical knowledge, and expertise from existing systems and staff members. In subsequent versions of this AM Plan, useful life data will be reviewed to improve the quality of the asset register used for asset renewal planning and financial reporting.

5.4.2 Renewal and replacement strategies

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

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

More specifically, the objective of the proposed renewal strategy in this AM Plan is to renew all Condition 4 and 5 assets within the Transportation Asset Class. For footpaths, kerb and water table, bridges, and traffic signals, this is planned over the first three years. However, for the road network a longer 15 year period will be required to reach this goal, due to the current condition and the significant investment required.

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 tonne load limit); or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. roughness of a road)¹⁰.

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

- Have a high consequence of failure;
- Have a high utilisation and subsequent impact on users would be greatest;
- The total value represents the greatest net value to the organisation;
- Have the highest average age relative to their expected lives;
- Are identified in the AM Plan as key cost factors;
- Have high operational or maintenance costs; and
- Where replacement with modern equivalent assets would yield material savings¹¹.

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

¹⁰ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

¹¹ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

Criteria	Weighting
Asset condition	100%
Asset hierarchy	
Alignment with strategic objectives	

Renewal and replacement standards

Renewal work is carried out in accordance with the following Standards and Specifications for all asset classes:

- *Urban Elements Catalogue;*
- *AS 2876-2000 Concrete kerbs and channels (gutters);*
- *Adelaide City Council – Urban Elements Catalogue;*
- *AS 1428.1 – 2009 – Australian Standard – Design for Access and Mobility - Part 1;*
- *Austroads – Part 6A: Pedestrian and Cyclist Paths;*
- *Relevant Australian Standard and specification for footpaths;*
- *AS 5100 – Bridge Design Standard;*
- *AS 1742 – Manual of Uniform Traffic Control Devices;*
- *AS 2353 – Pedestrian push-button assemblies;*
- *AS 2339 – Traffic signal posts and attachments;*
- *AS 2578.1 – Traffic signal controllers – Physical and electrical compatibility;*
- *AS 2703 – Vehicle loop detector sensors;*
- *AS 2979 – Traffic signal mast arms;*
- *AS 4113.2 – Traffic signal lamps;*
- *AS / NZS 2053 – Conduit and fittings for electrical installations;*
- *AS / NZS 2144 – Traffic signal lanterns;*
- *AS / NZS 2276 – Cables for traffic signal installations;*
- *AS / NZS 3000 – Wiring Rules;*
- *AS / NZS 3017 – Electrical Installations – Verification Guidelines;*
- *AS / NZS 3019 – Electrical Installations – Periodic Verification;*
- *AS / NZS 4360 – Risk Management Specification;*
- *South Australian Electrical Act 1996;*
- *Austroads Part 7 - Traffic Signals;*
- *DPTI Master Specifications;*
- *ACC-GE-01 Working on or near Tram Lines - Council Safe Operating Procedure; and*
- *Adelaide City Council City Works Guidelines.*

5.4.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in the figures below. Note that all amounts are shown in real values.

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

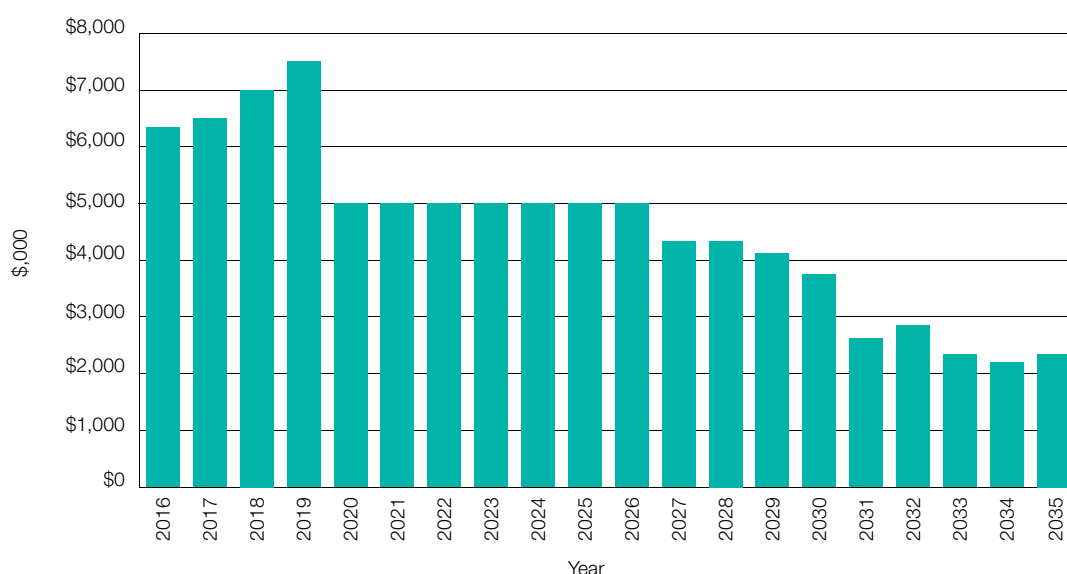
Deferred renewal and replacement, i.e. those assets identified for renewal and / or replacement and not scheduled in capital works programs are to be included in the risk analysis process in the *Risk Management Plan*.

Renewals and replacement expenditure in the organisation's capital works program will be accommodated in the LTFP. This is further discussed in Section 6.2.

Roads

As shown previously in Figure 3, which outlines the condition of Council's road network, a significant proportion of the network is in a poor to very poor condition state (i.e. Condition 4 and 5). In order to restore the health of the road network and mitigate risk to users, an incremental renewal funding strategy for Council's road network has been proposed. The associated yearly expenditure for this renewal funding strategy is represented below in Figure 5.

Figure 5 (Roads): Projected Capital Renewal and Replacement Expenditure



The roads identified under this renewal strategy, were determined using ASSETIC's strategic asset management software analysis, which was able to determine road renewal priorities. These renewal priorities were determined based on a number of specific criteria set by Council, the data obtained from the high speed data audit (e.g. cracking, roughness, deformations etc) as well as specific condition based intervention levels for each of the different road classes within Council's road hierarchy. The predicted change in road network condition associated with the funding strategy shown above can be seen in Figure 5A.

Figure 5A (Roads): Predicted Change in Road Network Condition for Proposed Funding Strategy

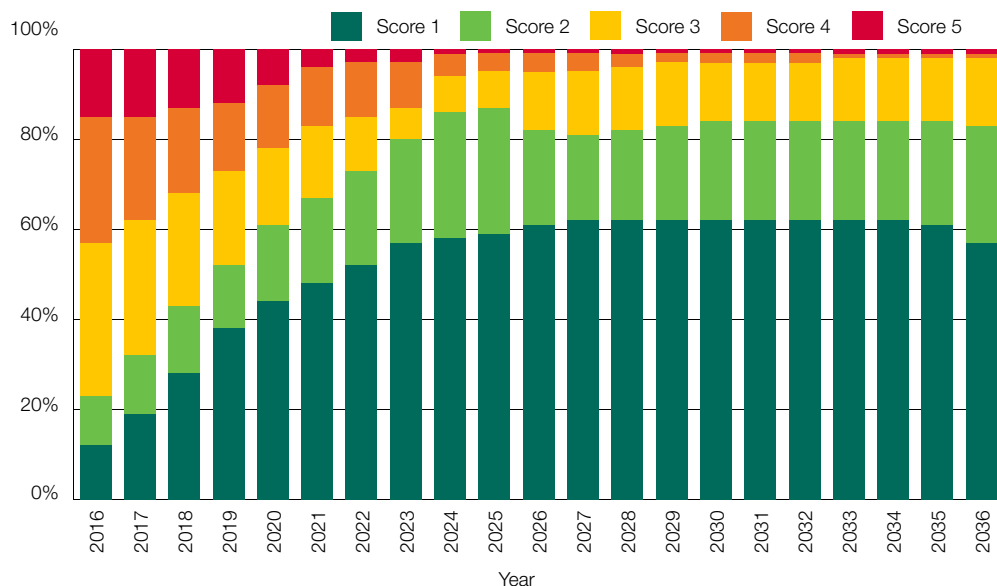
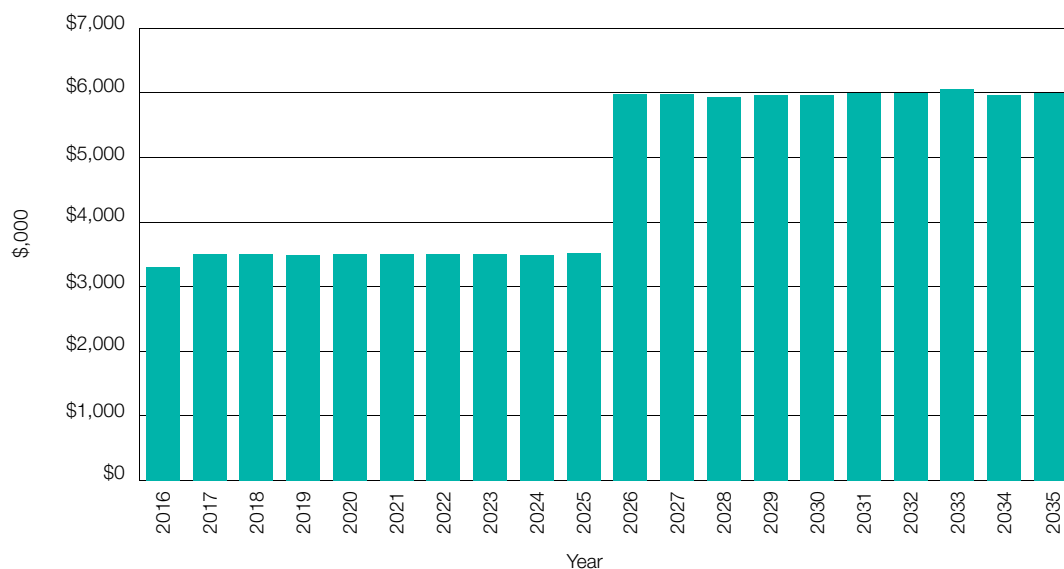


Figure 5A demonstrates a significant boost to the health of the road network over the first 10 years of proposed investment. The backlog of Condition 4 and Condition 5 assets (coloured orange and red) will be targeted for renewal. The outcome will result in a significant increase in the health of the network and eventually a decrease in the funding required to sustain service levels.

Footpaths

The projected 20-year capital renewal expenditure for footpath assets is shown below in Figure 5. Over the first 10-year planning period, the funding strategy proposed aims at spending \$3.5 million per year which anticipates improving the network health over the short to medium term with a focus on renewing Condition 4 and 5 assets within the first three years, then continuing to renew assets as required to sustain this service level. Preliminary indications of the current footpaths audit, to be completed by April 2016, indicate the footpath condition is significantly worse than currently recorded. It is likely that either investment levels or condition targets will need to be adjusted.

Figure 5 (Footpaths): Projected Capital Renewal and Replacement Expenditure



The renewal projection shows increased renewal expenditure after the first 10 years which is a function of the data and modelling used to predict future asset condition and associated expenditure demand. As the plan is updated periodically, forecast renewal expenditure figures between 2026 and 2035 will be reviewed and variations to budgeting recommendations will be made, to align with any future changes in footpath service levels.

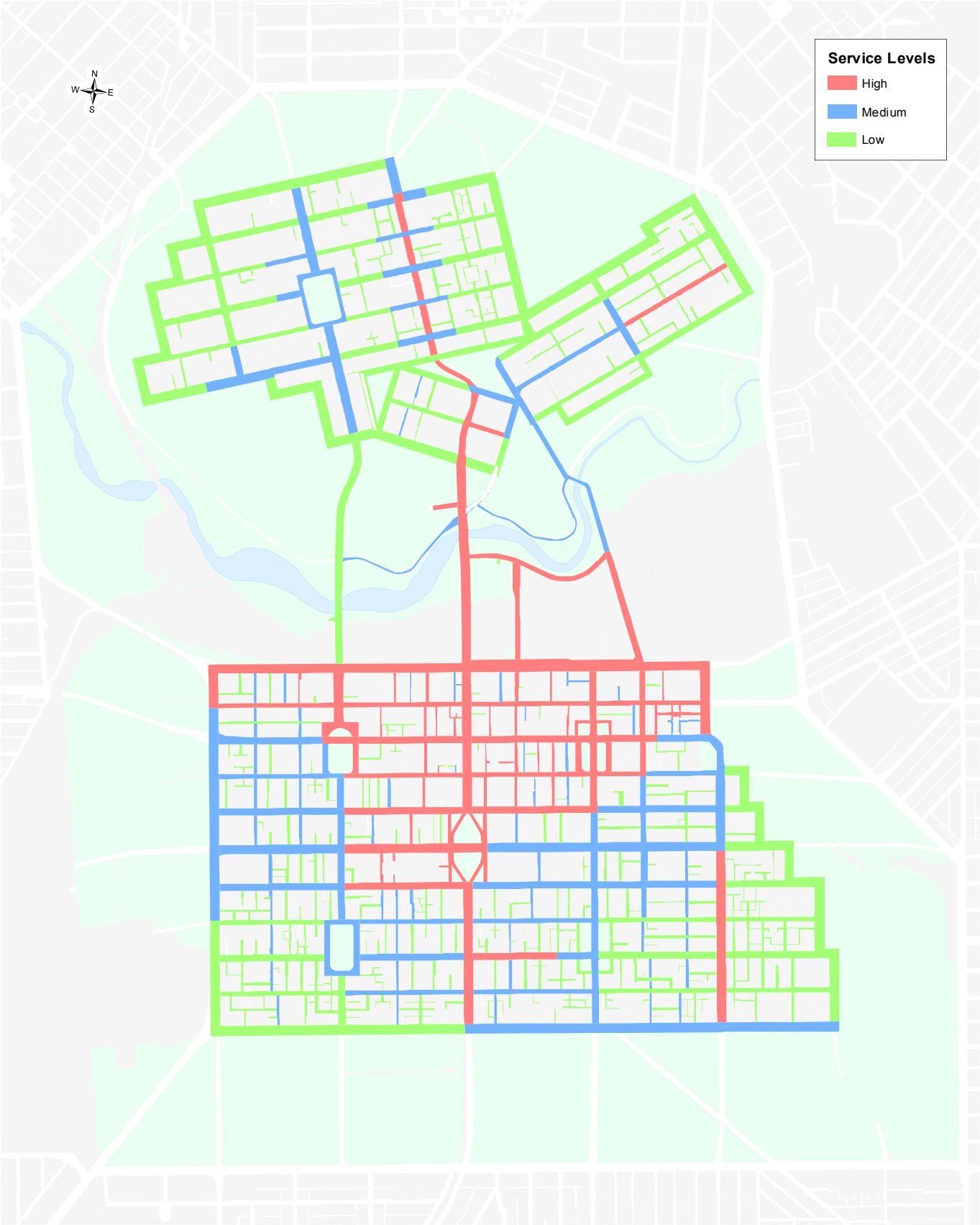
Renewal prediction analysis is based on the technical knowledge and expertise from existing systems and key staff members. This is the best available measure at the present time and improvements are underway to further increase the confidence in these forecasts for future revisions of the AM Plan. Improved data collection in the future, future revisions of asset condition and useful life data for the network will deliver greater confidence in forward works programming and budgeting.

The projected capital renewal and expenditure program as per Figure 5 above was developed by implementing an Asset Renewal Hierarchy System featured in Table 5.4.A and the map below. This approach would further refine the asset register data by disaggregating assets based on the amount of daily pedestrian traffic they received. This would directly correlate with the operating and maintenance trends of the Council and identify assets that had higher consequence of risks occurring.

Table 5.4.A: Footpath Asset Renewal Hierarchy System

Footpath type	Asset hierarchy	Pedestrian volumes and annual daily visits	Footpath location example	Risk rating
Street footpaths	High use	High	Rundle Mall, King William Street	High
	Medium use	Medium	Frome Street, Flinders Street	Medium
	Low use	Low	Residential streets	Low
Park Lands paths	High use	No data available	Park Lands trail and shared paths	High
	Medium use	No data available	Asphalt paths	Medium
	Low use	No data available	Gravel paths	Low

Footpath Classification Hierarchy



The Asset Renewal Hierarchy System enabled the refinement of the useful life data provided in Figure 5.4.1. These useful life values, which were based on the physical life of the asset, were compared to historical renewal trends which suggested that the intervention point of some footpaths was well before the physical life of the asset was reached (e.g. Rundle Mall). Using the condition rating as a basis for comparison, previous renewal trends suggested the following intervention points (Table 5.4.B below) were used for renewal based on the Asset Renewal Hierarchy System. The analysis was done using the 2013 - 14 and 2014 - 15 renewal programs compared to 2012 - 13 condition data.

Table 5.4.B: Footpath Asset Renewal intervention points

Footpath type	Asset hierarchy	Renewal intervention points (condition based)
Street footpaths	High use	3
	Medium use	3.5
	Low use	4
Park Lands paths	High use	4
	Medium use	4.5
	Low use	5

The current renewal intervention points identified above suggest that past decisions to replace footpaths have been driven heavily by aesthetic value as opposed to physical condition alone. This has resulted in assets being renewed at a rate faster than it is being physically consumed. It is recommended that further consultation is undertaken with the community regarding level of service options such that the rate of renewal is better aligned to the rate of physical consumption to ensure assets are renewed at the point where whole of life costs are minimised.

Kerb and Water Table

The projected 20-year capital renewal expenditure for kerb and water table assets is shown below in Figure 5. The renewal funding strategy aims to improve network health over the short to medium term by prioritising the renewal of all kerb and water table assets in poor condition aligned with the road renewal program and any full segment lengths of kerb and water table in poor and very poor condition. The alignment of the kerb and road renewal programs aims for both assets to meet service levels for the entire life of the pavement renewal.

Figure 5 (Kerb and Water Table): Projected Capital Renewal and Replacement Expenditure

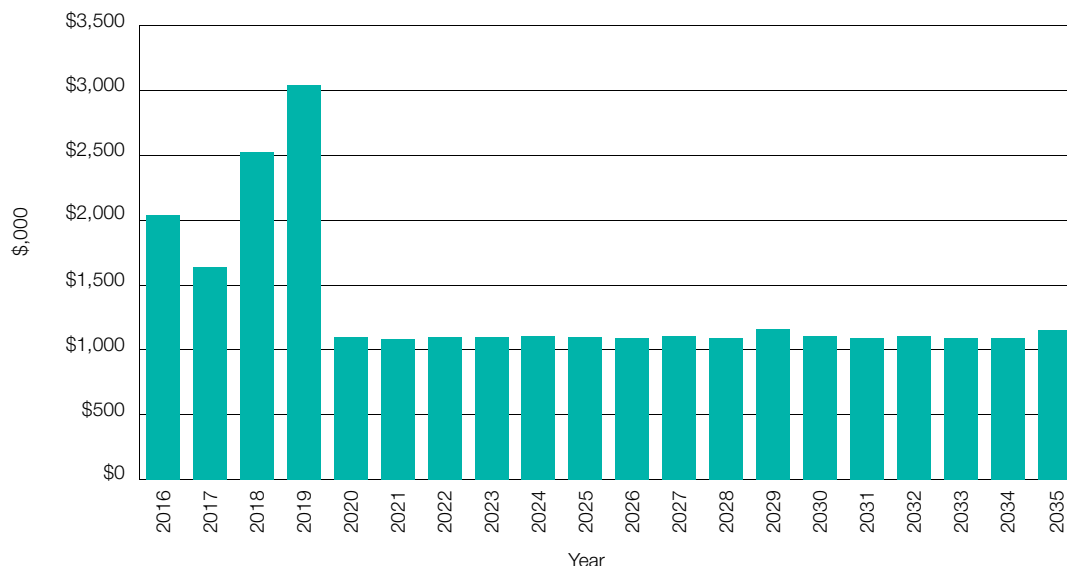
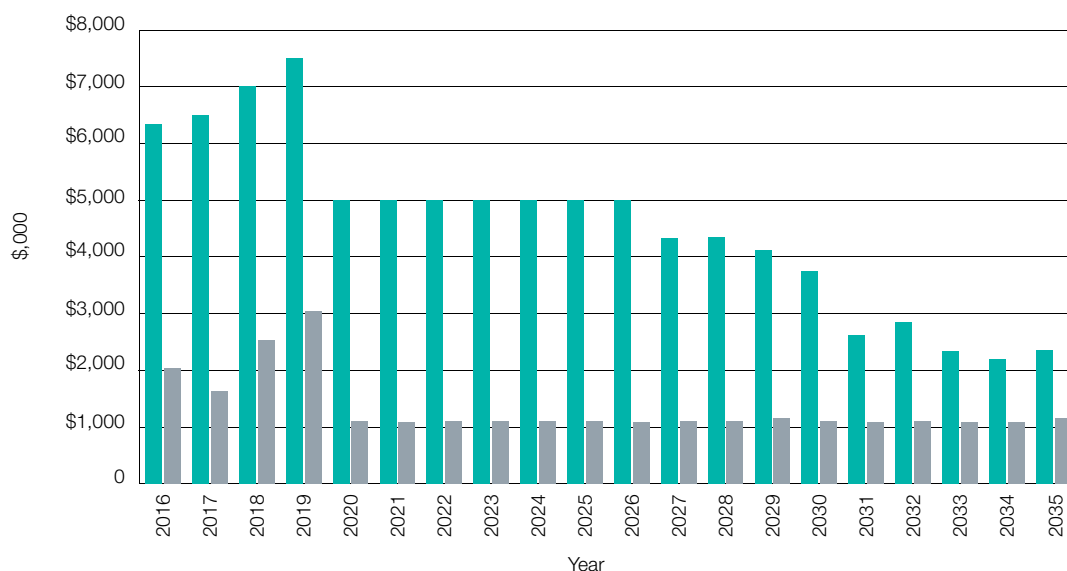


Figure 5 shows the increased level of funding in the first four years compared to the remaining years in the planning period. Figure 5A compares the funding between the road infrastructure and kerb and water table renewal funding. The expected drop in required kerb and water table renewal funding correlates to a similar the drop in road renewal funding.

Figure 5A (Kerb and Water Table): Road Renewal, Kerb and Water Table Renewal Funding Comparison

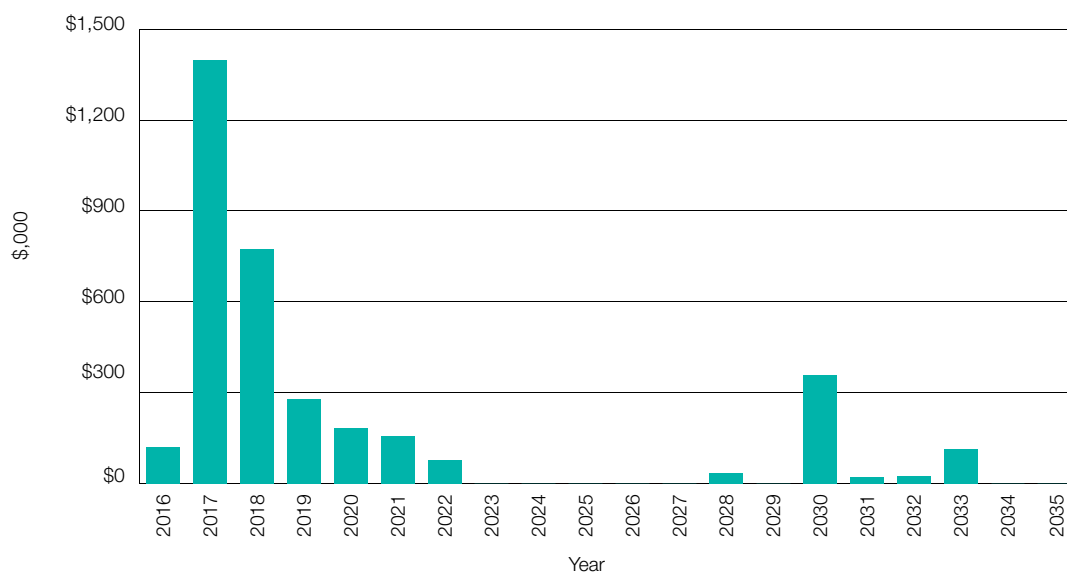


Bridges

The projected 20-year capital renewal expenditure for the Bridge Asset Class is shown below in Figure 5. The renewal funding strategy aims to undertake all necessary rehabilitation works on road bridges and major footbridges identified by GHD in the level three structural bridge inspections over the first three years of the planning period as well as renew all Condition 4 and 5 Park Lands footbridges over the first five years of the planning period. Other renewals, outside of this five-year planning period relate to assets that are predicted to have reached the end of their useful life based on condition data.

Figure 5 (Bridges): Projected Capital Renewal and Replacement Expenditure

It is important to note that due to the future works scheduled in the South Park Lands (Park 17, 18, 19, 20) for the Brown Hill



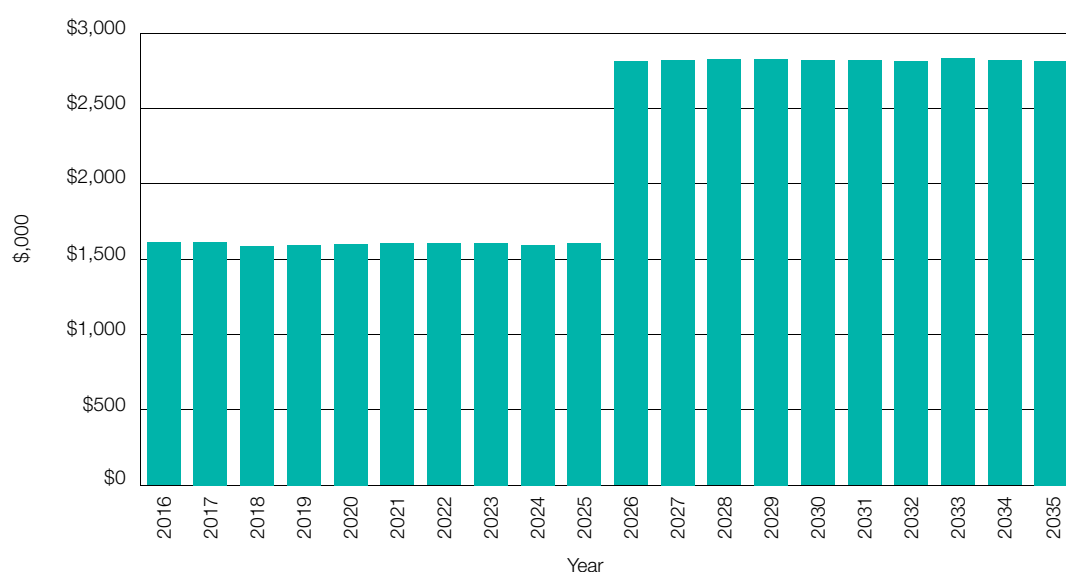
Keswick Creek Stormwater Project, no bridges in this area have been planned for renewal over the next four years. It is likely that as part of the channel widening works associated with this project, existing bridges will be disposed of and replaced with new bridges capable of spanning the widened channel, and will be accounted for as part of the Brown Hill Keswick Creek Stormwater Project costs. To ensure safety to the public, condition inspection frequencies will be increased, to monitor the deterioration of critical assets in this area.

Traffic Signals

Figure 5 below, highlights the projected renewal expenditure over the next 20 years. The annual projected expenditure figure of \$1,600,000 was determined by averaging the total projected expenditure over the first 10 years, from those assets that have been estimated to have reached the end of their useful life based on the data in the asset register. This funding strategy aims to improve the network health over the short to medium term. The renewal program anticipates to renew all Condition 5 assets in the first year of the planning period (2015 - 16) and continue to renew Condition 4 assets in the subsequent years in order to improve the overall network health. Where applicable, renewals of certain traffic signal components should coincide with the forecasted intersection / road renewal program.

Figure 5 (Traffic Signals): Projected Capital Renewal and Replacement Expenditure

The renewal projection shows increased renewal expenditure after the first 10 years which is a function of the data and modelling



used to predict future asset condition and associated expenditure demand. As the plan is updated periodically, forecast renewal expenditure figures between 2026 and 2035 will be reviewed and variations to budgeting recommendations will be made, to align with any future changes in traffic signal service levels. The projected capital renewal and expenditure program as per Figure 5 above was developed by implementing an Asset Renewal Hierarchy System featured in Table 5.4.A below.

Table 5.4.A – Traffic Signal Asset Renewal Hierarchy System

Asset hierarchy	Pedestrian volumes	Traffic signal location example	Likelihood of risk from injury
High	High	Pulteney Street / Rundle Mall	High
Medium	Medium	O'Connell Street / Ward Street	Medium
Low	Low	Port Road / Gaol Road	Low

Based on the Asset Renewal Hierarchy System the following intervention points (Table 5.4.B) were chosen using condition as a basis for comparison. The intervention points were selected to reduce the likelihood of a signalised intersection or Pedestrian Actuated Controller (PAC) section being inoperative.

Table 5.4.B – Traffic Signal Asset Renewal intervention points

Component	Asset Hierarchy		
	High	Medium	Low
Controllers	4	4	4
Detectors	4	4	4
Lantern	4	4	4
Audio Tactile	4	4	5
Cables	4	5	5
Conduits	4	5	5
Poles (Overhead and Low)	5	5	5
Target Boards	5	5	5

5.5 Creation / Acquisition / Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the organisation from land development. These assets from growth are considered in Section 4.4.

5.5.1 Selection criteria

New assets or upgrades to existing assets are identified from various sources such as councillor / director or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programs. The priority ranking criteria is detailed below (Table 5.5.1).

Table 5.5.1: New Assets Priority Ranking Criteria

Asset Class	Criteria	Weighting
All transportation assets	Upgrade of transportation assets is based on strategic plan priorities and corporate strategies (<i>Smart Move Strategy 2012</i> , <i>Park Lands Management Strategy 2014</i> , etc) to meet community expectations and needs.	AM Plans will influence project chosen to meet corporate strategies.
	Upgrade to occur with cyclic renewal of asset.	Enhancements will be considered for any asset nominated for renewal in Council's rolling three-year renewal program.

5.5.2 Capital investment strategies

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

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

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

5.5.3 Summary of future upgrade / new assets expenditure

Projected upgrade / new asset expenditures are summarised in the figures below. The projected upgrade / new capital works program is shown in Appendix C. All amounts are shown in real values. Expenditure on new assets and services in the organisation's capital works program will be accommodated in the LTFP. This is further discussed in Section 6.2.

It is important to note that funding for the ADM as well as strategic enhancements aligned with *The City of Adelaide Strategic Plan 2016 - 20* have not been considered in the funding models proposed. This will be addressed in further revisions to the AM Plan.

Roads

Due to the nature of Council's road network being fully established, there is no immediate requirement for any new assets under this AM Plan. However, when a road comes up for renewal, the opportunity for enhancement in line with strategic objectives will be investigated.

Footpaths

Figure 6 (Footpaths): Projected Capital Upgrade / New Asset Expenditure



Figure 6 currently shows all DDA compliance upgrades forecasted based on legislated time frames imposed on Local Councils. These DDA compliance upgrades will have negligible effect on the lifecycle costs (maintenance and operation) of the Footpath Asset Class. This is because these upgrades typically will only change the functionality of the asset and not the assets physical makeup. As mentioned in Section 4.5, no new assets or upgrade works outside of those required under legislation have been included in this version of the AM Plan. However, when a footpath comes up for renewal, the opportunity for enhancement in line with strategic objectives will be investigated.

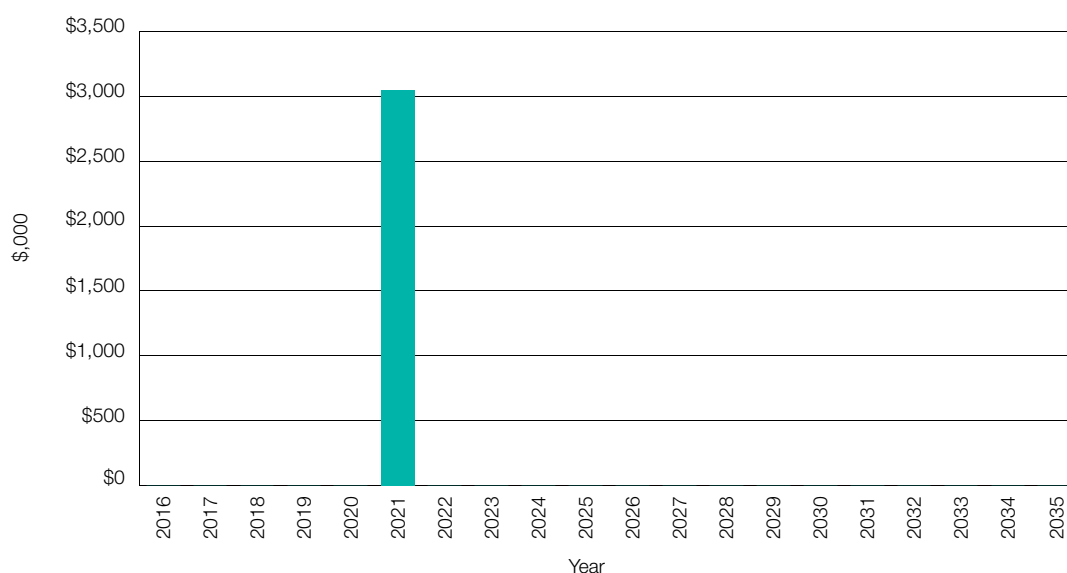
Kerb and Water Table

Due to the nature of Council's road network being fully established, there will be no requirement for any upgraded kerb and water table assets under this AM Plan. However, when any kerb and water table comes up for renewal, the opportunity for enhancement in line with strategic objectives will be investigated (i.e. protuberances and rain gardens).

Bridges

The projected upgrade / new asset expenditure for bridges is summarised in Figure 6.

Figure 6 (Bridges): Projected Capital Upgrade / New Asset Expenditure



The one upgrade / new asset expenditure shown in 2021 corresponds to the installation of vehicle crash barriers on Morphet Bridge, which was identified in the risk register presented in Table 5.2. After this upgrade work is complete, the impact on increased lifecycle costs (operations and maintenance) to the Bridge Asset Class will be investigated and any required changes will be accounted for in future revisions of the AM Plan.

Traffic Signals

There are no new signalised intersections highlighted as part of this AM Plan. However Council will continue to bid for external black spot funding for safety related traffic signal infrastructure upgrades and enhancements (e.g. Whitmore Square East). Where Council's Commonwealth Black Spot funding applications are successful, 100% funding is granted. If unsuccessful, then Council bids for the State Government Black Spot program, where Council contributes 33% of the total cost of the project with the remainder funded through the State Government (67%).

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any revenue gained from asset disposals is accommodated in Council's LTTP. Where cashflow projections from asset disposals are not available, these will be developed in future revisions of this AM Plan.

Table 5.6: Assets Identified for Disposal

Asset class	Reason for disposal	Timing	Disposal expenditure	Operations and maintenance annual savings
Roads	No assets have been identified for disposal in this AM Plan.	NA	NA	NA
Footpaths	No assets have been identified for disposal in this AM Plan.	NA	NA	NA
Kerb and water table	No assets have been identified for disposal in this AM Plan.	NA	NA	NA
Bridges	No assets have been identified for disposal in this AM Plan.	NA	NA	NA
Traffic signals	No assets have been identified for disposal in this AM Plan.	NA	NA	NA

5.7 Service Consequences and Risks

Development of the three scenarios referred to in this plan provides a method to facilitate discussions on service levels, service consequences, service risks, and financing levels.

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

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

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

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

Council have been supportive of funding Scenario 1, as presented in this AM Plan, therefore Scenario 2 and 3 have not been developed.

In order to draw comparisons between what is the current funding (Scenario 2) and what has been projected over the planning period, the 2014 - 15 renewal budgets for the associated asset classes were used. The following sections are based around adopting the 2014 - 15 funding scenarios over the 20-year planning period which has resulted in funding deficits across all asset classes.

Once this document goes out for internal consultation, has informed the financial and strategic plans, and has been endorsed by Council, a financially sustainable AM Plan (Scenario 3) will be developed.

5.7.1 What we cannot do

Based on 2014 - 15 funding levels, there were insufficient funds to provide all services at the desired service levels. These 2014 - 15 funding levels represented a shortfall of:

Roads

- An estimated \$8,949,000 total funding shortfall for priority maintenance works over the next 10 years.

Footpaths

- An estimated \$18,831,000 total funding shortfall for priority renewals over the next 10 years; and
- An estimated \$5,652,000 total funding shortfall for priority maintenance works over the next 10 years.

Kerb and Water Table

- An estimated \$15,823,000 total funding shortfall for priority renewals over the next 10 years; and
- An estimated \$861,000 total funding shortfall for priority maintenance works over the next 10 years.

Bridges

- An estimated \$1,194,000 funding shortfall over the next 10 years for priority bridge renewals;
- An estimated \$3,048,000 funding shortfall for creating a new asset in the installation of bridge crash barriers on Morphett Bridge; and
- An estimated \$1,795,000 total funding shortfall for priority maintenance works over the next 10 years.

Traffic Signals

- An estimated \$7,267,000 total funding shortfall for priority renewals over the next 10 years; and
- Full condition audit / rating for all traffic signal sites and sub-categories due to certain components not being accessible, and / or unable to access due to WHS issues, i.e. conduits and cables which are underground assets with an estimated lifespan of 60 years, but usually inaccessible due to materials of which they are composed at the time of installation and the ground conditions that they are in.

However, Council intends to fund these shortfalls over the 10-year planning period, as demonstrated by the 2015 - 16 funding levels allocated to the renewal and maintenance of transportation infrastructure.

It is important to note this AM Plan does not address the upgraded and new infrastructure initiatives associated with *The City of Adelaide Strategic Plan 2016 - 20* (i.e. greening projects, cycle link projects, and the roll-out of the ADM).

5.7.2 Service consequences

If 2014 - 15 funding levels had been continued, there would have been a progressive reduction in service levels provided by the transportation infrastructure assets including:

Roads

- The road network health won't reached the desired service levels outlined in this AM Plan, resulting in a number of roads remaining in an undesired condition;
- There will be reduced service levels to the vehicles, bicycles, and pedestrians that utilise the road network; and
- Longer response times to service requests.

Footpaths

- Increased number of surface defects; and
- Longer response times to service requests due to more assets requiring urgent maintenance.

Kerb and Water Table

- Kerb renewals may not be able to be undertaken in conjunction with road renewals, leaving poor condition kerb and water table adjacent to road renewal;
- Increased number of defects (i.e. localised ponding); and
- Longer response times to service requests due to more assets requiring urgent maintenance.

Bridges

- Bridges may have to be closed and ultimately replaced if priority renewals are not funded; and
- Lower level of safety for vehicles and pedestrians utilising Morphett Bridge.

Traffic Signals

- Failure of traffic signal components resulting in operational issues for signalised intersection or crossing such as increased delays, queueing, and frustration of motorists which could lead to increased risk of anti-social driver behaviour and potential accidents.

5.7.3 Risk consequences

The operations and maintenance activities and capital projects that could not be undertaken at 2014 - 15 funding levels increase risk for the organisation. These include:

Roads

- A loss of reputation to Council, in regards to owning and maintaining infrastructure to a high standard; and
- Accelerated ageing and general deterioration of assets (e.g. leaving a failed road seal in service beyond its useful life may lead to pavement failure caused by water ingress – ultimately requiring much more substantial funding for when road is eventually renewed).

Footpaths

- Increased maintenance and servicing costs;
- Accelerated ageing and general deterioration of assets;
- Not meeting intergeneration equity;
- Loss of reputation for Council; and
- Increased risk to public safety.

Kerb and Water Table

- Increased maintenance and servicing costs;
- Accelerated ageing and general deterioration of assets;
- Not meeting intergeneration equity;
- Loss of reputation for Council; and
- Increased risk to public safety.

Bridges

- A loss of reputation to Council, for having to close bridge service to public; and
- Potential for cars to crash off of bridge or into pedestrian traffic.

Traffic Signals

- Loss of reputation, image, community confidence, public safety both politically and financially.
- These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and Risk Management Plan's actions and expenditures included within projected expenditures.

6. FINANCIAL SUMMARY

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

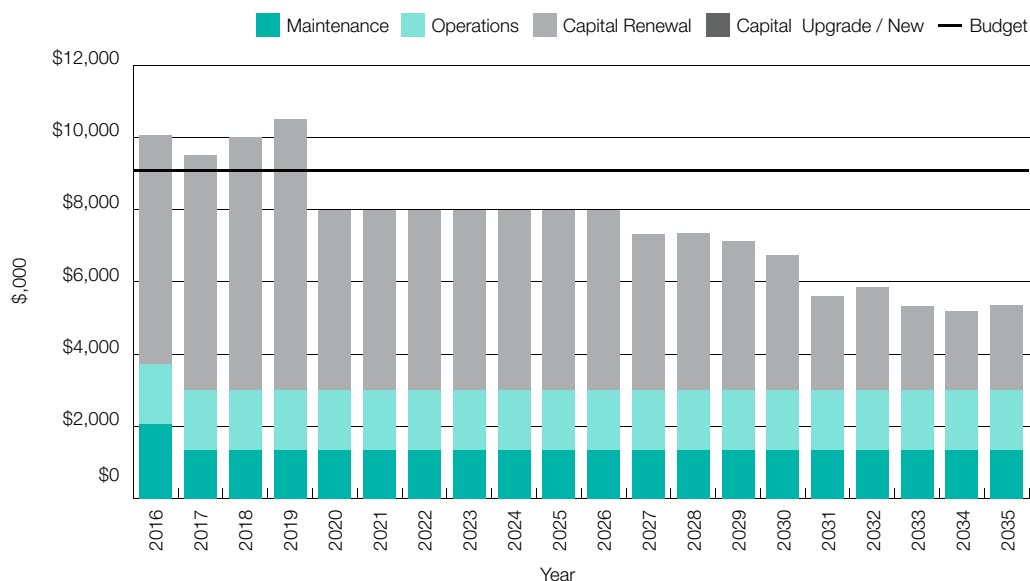
The projections are based on the best available information and are aimed at giving a direction for the future and indication of priority for asset and financial management and planning. There may be concerns about the reliability and accuracy of the data used to prepare the financial projections, however, it is important that the projections be based on best available information and improved over time as information becomes available on desired levels of service and current and projected future asset performance.

6.1 Financial Statements and Projections

The combined 20-year financial projections are shown in Figure 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade / expansion / new assets). Note that all costs are shown in real values. The following sections have drawn comparisons between current funding and future funding allocations by assuming the 2014 - 15 funding scenario is applied throughout the 20-year planning period.

Roads

Figure 7 (Roads): Projected Operating and Capital Expenditure



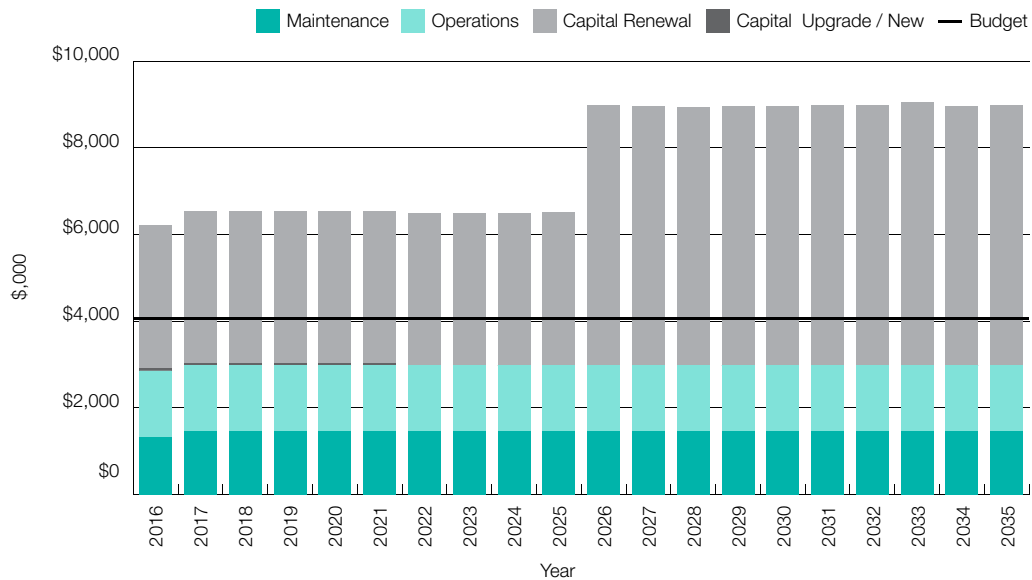
The budgeted expenditure line, shown in Figure 7, incorporates the 2014 - 15 operations budget, maintenance budget, and renewal budget. Comparing the budgeted expenditure line to the projected annual operating, maintenance, and capital expenditure, it is evident that there is a funding shortfall over the first four years, but a funding surplus between 2020 and 2035.

The proposed additional funding over the first four years is required to increase the road network's level of service through increased renewal and maintenance investments. An increase in renewal investment over the first four years is proposed to accelerate clearing the backlog of current poor condition roads. Furthermore, as discussed in the future operations and maintenance expenditures (Section 5.3.3), additional maintenance funding is also proposed in order to implement the proposed planned maintenance program, which will decrease the amount of reactive maintenance and deliver a higher level of service to users.

It should be noted that there will be no reduction in service levels associated with the lesser investment between 2020 and 2035 and the desired levels of service will be sustained during this period.

Footpaths

Figure 7 (Footpaths): Projected Operating and Capital Expenditure

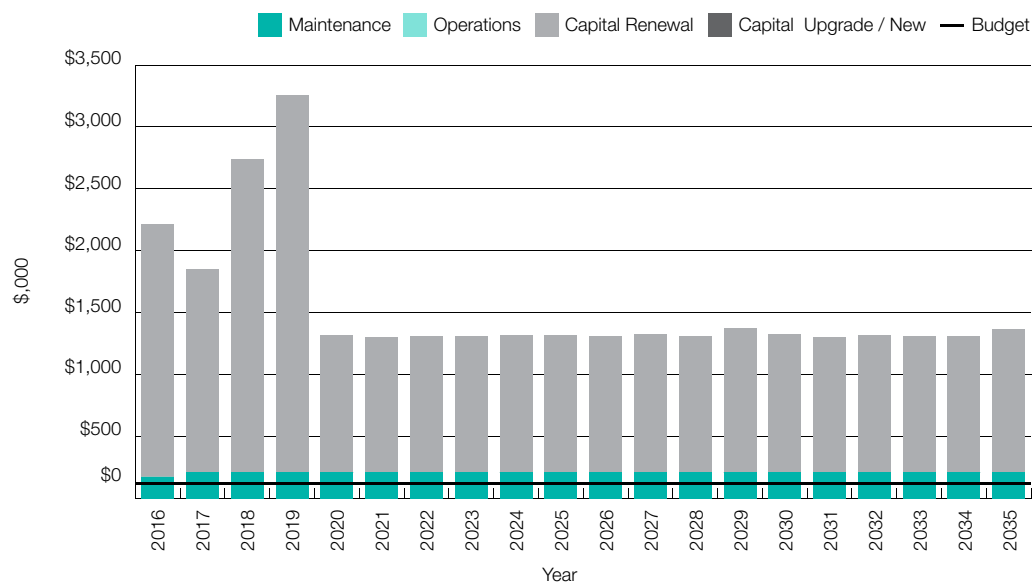


The budgeted expenditure line in Figure 7 above incorporates the 2014 - 15 operational, maintenance, and capital renewal and upgrade budgets. As discussed in section 5.4.3, the capital renewal program was based at improving network health over the short to medium term. It is evident from Figure 7 that there is significant shortfall between 2014 - 15 asset expenditure and the proposed funding strategy over the 10-year planning period.

This additional funding reflects a proposed increase in the footpath networks level of service through increased renewal and maintenance. As previously discussed in the summary of future renewal and replacement expenditure (Section 5.4.3), additional renewal funding is needed to improve network health by removing all Condition 5 and 4 assets in three years and ensuring no Condition 5 assets exist in the asset base in future years. Furthermore, as discussed in the future operations and maintenance expenditures (Section 5.3.3), additional maintenance funding will also be required in order to implement the proposed planned maintenance program. Planned maintenance will ultimately decrease the amount of reactive maintenance and result in a higher level of service.

Kerb and Water Table

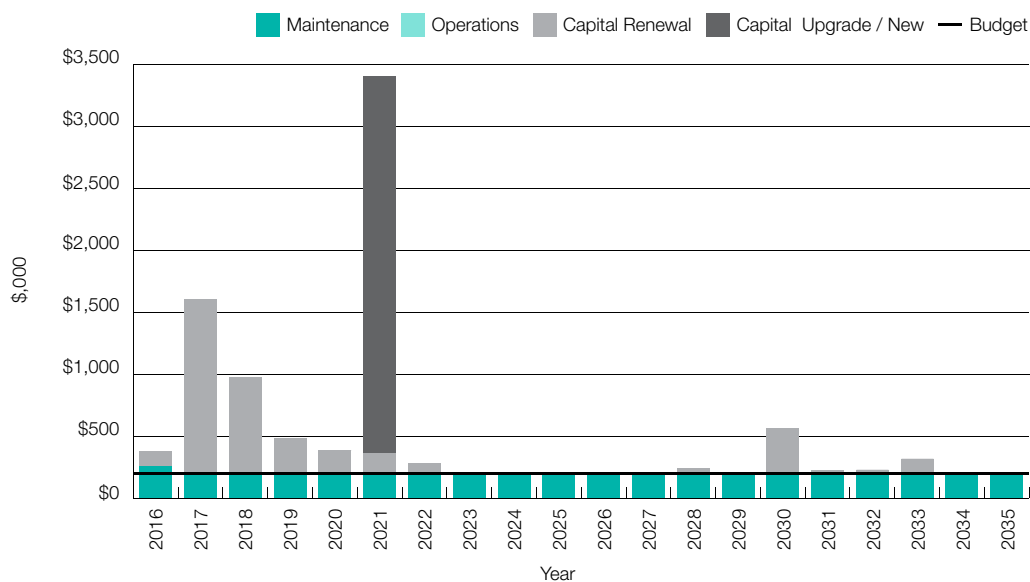
Figure 7 (Kerb and Water Table): Projected Operating and Capital Expenditure



The budgeted expenditure line, present in Figure 7, incorporates the 2014 - 15 operations budget, maintenance budget, and the renewal budget. When the budgeted expenditure line is compared to the annual projected operating, maintenance, and capital expenditures, it is evident that there is significant shortfall and additional funding is required in order to deliver the planned renewal and maintenance programs. This shortfall reflects that in past years the kerb and water table renewal was built into road and footpath renewal budgets. The first year that the Kerb and Water Table Asset Class had its own renewal budget line was 2015 - 16, hence the significant funding shortfall when proposed expenditure is compared to the 2014 - 15 budgeted expenditure.

Bridges

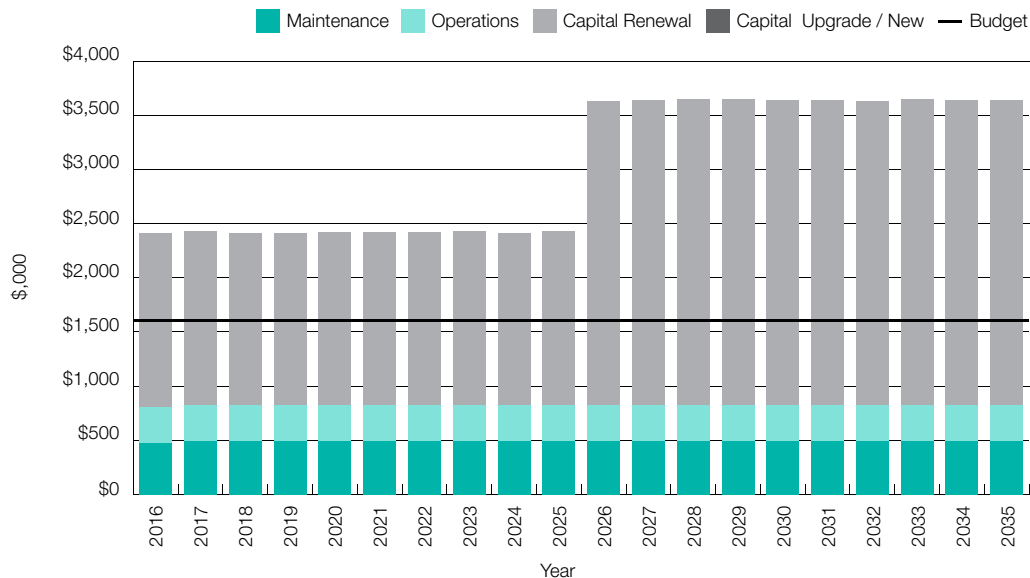
Figure 7 (Bridges): Projected Operating and Capital Expenditure



The budgeted expenditure line, present in Figure 7, incorporates the 2014 - 15 operations budget, maintenance budget, and capital renewal budget. When the projected annual expenditure is compared to the budgeted expenditure, it is evident that over 2017, 2018, and 2019 there is a significant shortfall and additional funding is required in order to deliver the required capital renewal works identified under this AM Plan. There is also a significant funding shortfall in 2021 for the capital upgrade / new asset associated with the installation of vehicle crash barriers on Morphett Bridge and additional funding will be required if this work is to be delivered.

Traffic Signals

Figure 7 (Traffic Signals): Projected Operating and Capital Expenditure



The budgeted expenditure line in Figure 7 above incorporates the 2014 - 15 operational, maintenance, and capital renewal and upgrade budgets. As discussed in section 5.4.3, the capital renewal program was based on improving network health over the short to medium term. It is evident from Figure 7 that there is significant shortfall between current renewal budget and the proposed funding strategy over the 10-year planning period.

This additional funding required is due to a proposed increase in renewals. As previously discussed in the summary of future renewal and replacement expenditure (Section 5.4.3), additional renewal funding is needed to improve network health by removing all Condition 5 assets in the first year and ensuring no Condition 4 or 5 assets remain within the network in future years of the renewal program.

6.1.1 Sustainability of service delivery

There are four key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the Asset Renewal Funding Ratio, long term lifecycle costs / expenditures, and medium term projected / budgeted expenditures over five and 10 years of the planning period.

Long term - Lifecycle Cost

Lifecycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset lifecycle. Lifecycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The lifecycle cost per year for the services covered in this AM Plan are shown in Table 6.1.1.A, and include average operations and maintenance expenditure plus depreciation expense projected over 10 years.

Lifecycle costs can be compared to lifecycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Lifecycle expenditure includes operations, maintenance, and capital renewal expenditure. Lifecycle expenditure will vary depending on the timing of asset renewals. The lifecycle expenditure per year over the 10-year planning period are shown in Table 6.1.1.A, and include average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years.

A shortfall between lifecycle cost and lifecycle expenditure is the lifecycle gap and is based on current 2014 - 15 funding. The lifecycle gap for services per year for assets covered by this AM Plan are shown in Table 6.1.1.A (-ve = gap, +ve = surplus).

Lifecycle expenditure of lifecycle costs are also shown in Table 6.1.1.A.

The lifecycle costs and lifecycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term. If the lifecycle expenditure is less than that lifecycle cost, it is most likely that outlays will need to be increased or cuts in services made in the future.

Knowing the extent and timing of any required increase in outlays and the service consequences if funding is not available will assist organisations in providing services to their communities in a financially sustainable manner. This is the purpose of the AM Plan and LTFP.

Table 6.1.1.A: Long Term Lifecycle Costs

Asset class	Asset renewal funding ratio	Lifecycle cost	Lifecycle expenditure	Lifecycle gap	Lifecycle indicator %
Roads	119%	\$7,742,000	\$9,076,000	+\$1,334,000	117%
Footpaths	46%	\$7,179,000	\$4,001,000	-\$3,178,000	56%
Kerb and water table	0%	\$1,278,000	\$124,000	-\$1,154,000	10%
Bridges	55%	\$1,710,000	\$207,000	-\$1,503,000	12%
Traffic signals	55%	\$2,847,000	\$1,675,000	-\$1,172,000	59%

Medium term – 10-year financial planning period

This AM Plan identifies the projected operations, maintenance, and capital renewal expenditures required to provide an agreed level of service to the community over a 10-year period. This provides input into 10-year financial and funding plans aimed at providing the required services in a sustainable manner.

These projected expenditures may be compared to budgeted expenditures in the 10-year period to identify any funding shortfall. In a core AM Plan, a gap is generally due to increasing asset renewals for ageing assets.

Table 6.1.1.B presents the 10-year operating, maintenance, and renewal project expenditure, the 10-year operating, maintenance, and renewal LTFP budget expenditure, the 10-year financing shortfall as well as the financing indicator percentage.

Table 6.1.1.B: Medium Term – 10-year Financial Planning Period

Asset class	10-year operating, maintenance, and renewal projected expenditure	10-year operating, maintenance, and renewal budget (2014 - 15)	10-year financing shortfall	10-year financing indicator as % age
Roads	\$8,805,000	\$9,076,000	+\$271,000	103%
Footpaths	\$6,452,000	\$4,001,000	-\$2,451,000	62%
Kerb and water table	\$1,792,000	\$124,000	-\$1,668,000	7%
Bridges	\$506,000	\$207,000	-\$299,000	41%
Traffic signals	\$2,422,000	\$1,675,000	-\$746,000	69%

Medium Term – 5-year financial planning period

Table 6.1.1.C presents the five-year operating, maintenance, and renewal project expenditure, the five-year operating, maintenance, and renewal LTFP budget expenditure, the five-year financing shortfall as well as the financing indicator percentage.

Table 6.1.1.C: Medium Term – 5-year Financial Planning Period

Asset class	5-year operating, maintenance, and renewal projected expenditure	5-year operating, maintenance, and renewal budget (2014 - 15)	5-year financing shortfall	5-year financing indicator as % age
Roads	\$9,610,000	\$9,076,000	-\$534,000	94%
Footpaths	\$6,416,000	\$4,001,000	-\$2,415,000	62%
Kerb and water table	\$2,273,000	\$124,000	-\$2,150,000	5%
Bridges	\$763,000	\$207,000	-\$557,000	27%
Traffic signals	\$2,419,000	\$1,675,000	-\$744,000	69%

Asset management financial indicators

Figure 7A, for each of the transportation asset classes below show the asset management financial indicators over the 10-year planning period and for the long term lifecycle.

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

In Appendix D, Table 6.1.1 for each of the transportation asset classes show the shortfall between proposed renewal and replacement expenditures and the 2014 - 15 renewal budget projected over the planning period. A gap between proposed asset renewal / replacement expenditure and amounts accommodated in the LTFP indicates that further review is required to lower / adjust service levels in the AM Plan (or alternatively increase funding in the LTFP). The AM Plan will be revised following review by council to meet required service levels within approved funding. Until then, the 'gap' will be managed by providing guidance on future service levels and resources required to provide these services, and review future services, service levels, and costs with the community.

Roads

Figure 7A (Roads): Asset Management Financial Indicators

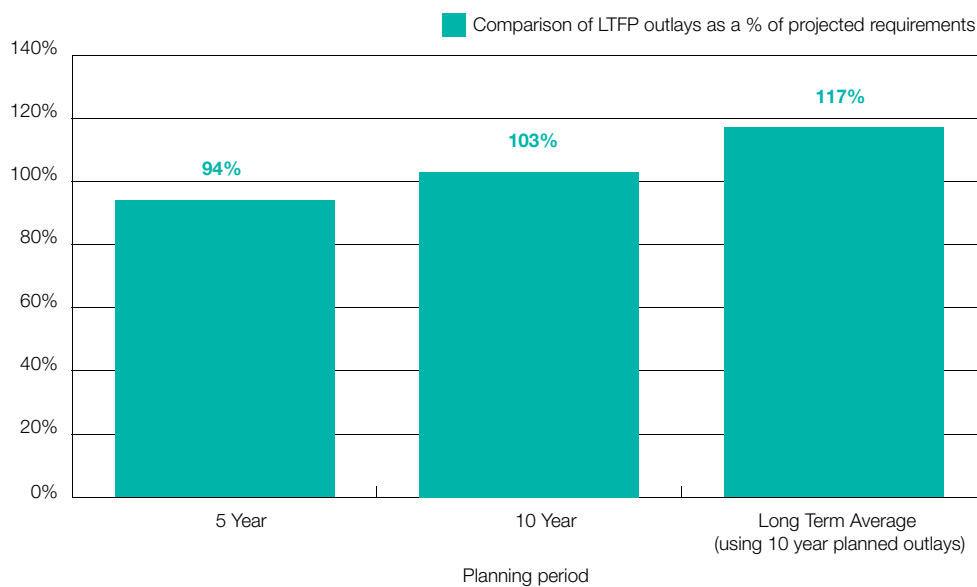


Figure 7A above shows that in the five-year planning period, there is insufficient funding in order to meet desired services levels and clear the backlog of poor condition roads. However, for the 10-year and long term planning the proposed funding option is financially sustainable with indicator of 103% and 117%.

Footpaths

Figure 7A (Footpaths): Asset Management Financial Indicators

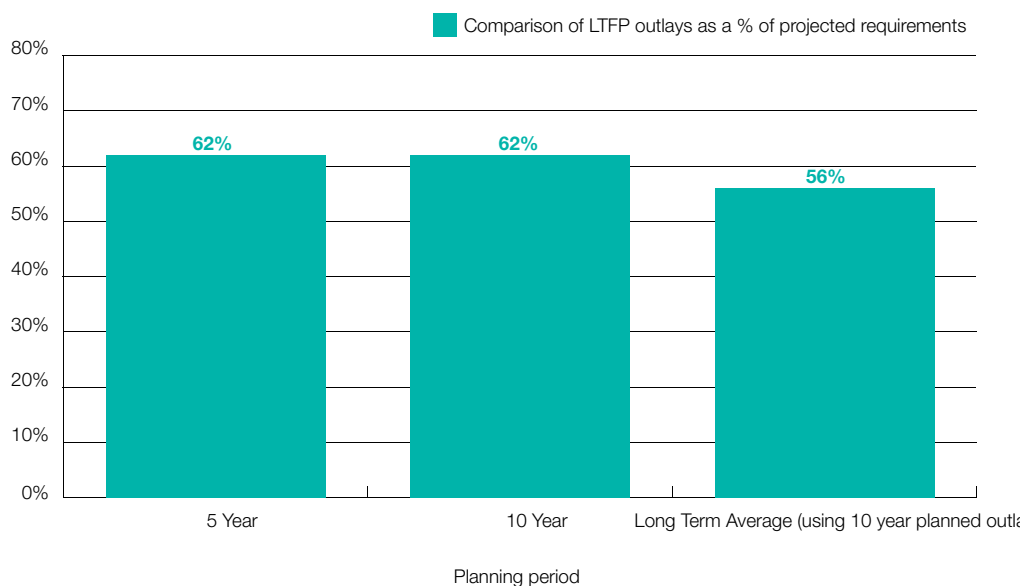


Figure 7A above shows that there are funding shortfalls in the five-year, 10-year, and long term planning periods which indicates the desired service levels are unlikely to be met. The proposed funding strategy over the 10-year planning period aims at ensuring the desired service levels for the footpath network can be sustainably met into the future.

Kerb and Water Table

Figure 7A (Kerb and Water Table): Asset Management Financial Indicators

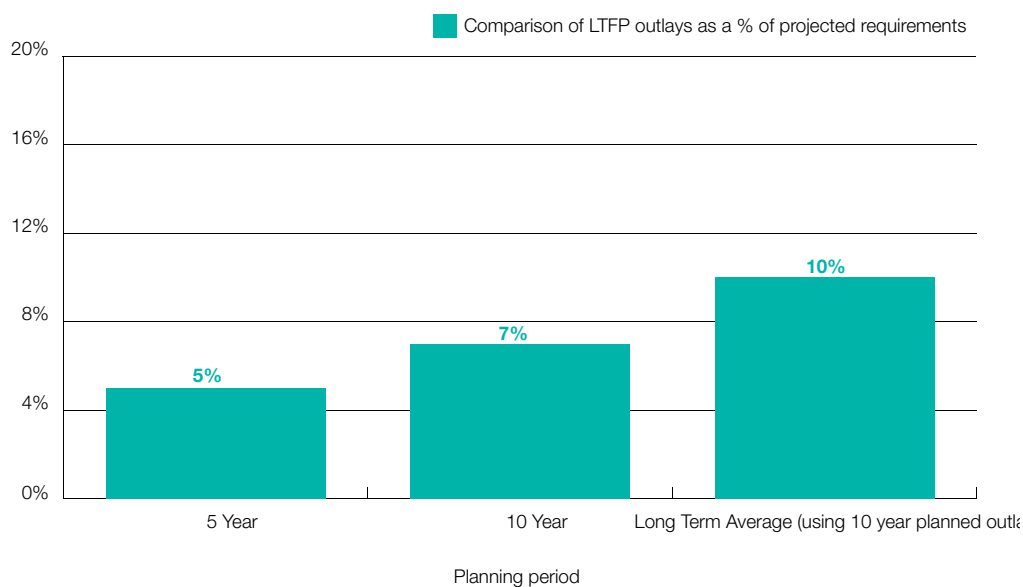


Figure 7A above shows that there is significant funding shortfall in the five-year, 10-year, and long term planning periods. It is important to note, as previously discussed, that this funding shortfall is expected as 2015 - 16 will be the first year that the kerb and water table will have its own renewal budget line. The proposed funding strategy over the 10-year planning period aims to sustainably meet the service levels of the kerb and water table network.

Bridges

Figure 7A (Bridges): Asset Management Financial Indicators

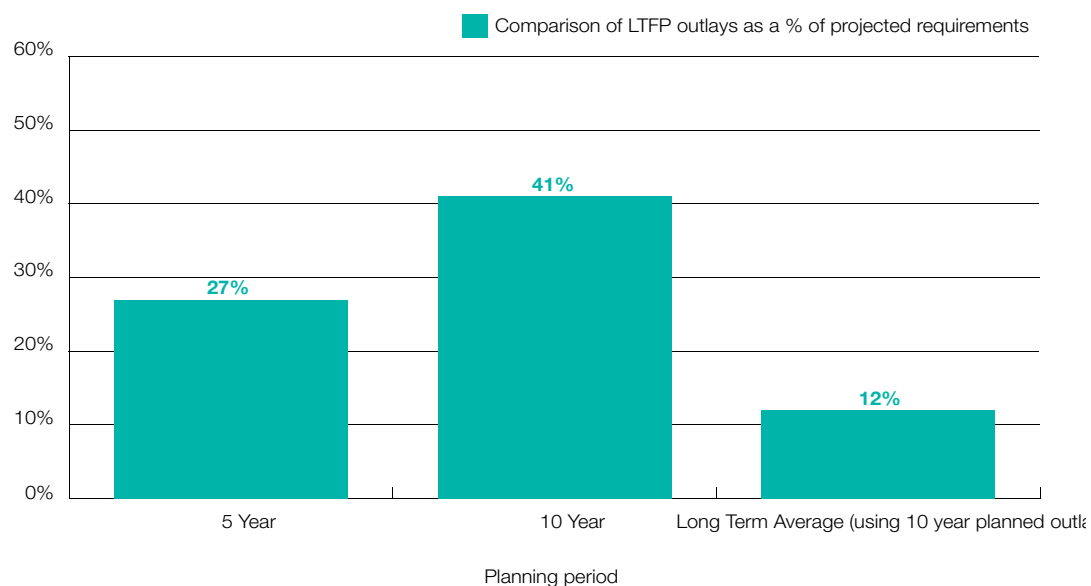


Figure 7A above shows that there are funding shortfalls in the five-year, 10-year, and long term planning periods in order to meet desired service levels and renew critical assets. The proposed funding strategy over the 10-year planning period aims to increase the sustainability of the bridge network.

Traffic Signals

Figure 7A (Traffic Signals): Asset Management Financial Indicators

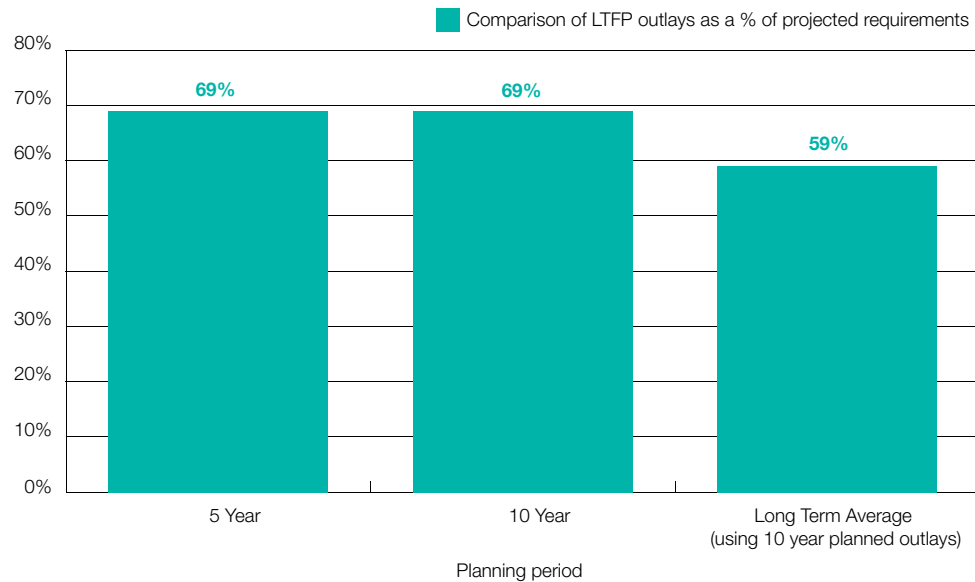


Figure 7A above shows that there are funding shortfalls in the five-year, 10-year, and long term planning periods in order to meet desired service levels. The proposed funding strategy over the 10-year planning period aims to increase the sustainability of the traffic signal network.

6.1.2 Projected expenditures for LTFP

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

Expenditure projections are in 2014 - 15 real values.

Roads

Table 6.1.2 (Roads): Projected Expenditures for LTFP (\$,000)

Year	Operations (\$,000)	Maintenance (\$,000)	Projected capital renewal (\$,000)	Capital upgrade / new (\$,000)	Disposals (\$,000)
2016	\$1,645	\$2,073	\$6,337	\$0	\$0
2017	\$1,645	\$1,354	\$6,500	\$0	\$0
2018	\$1,645	\$1,354	\$7,000	\$0	\$0
2019	\$1,645	\$1,354	\$7,500	\$0	\$0
2020	\$1,645	\$1,354	\$4,999	\$0	\$0
2021	\$1,645	\$1,354	\$5,000	\$0	\$0
2022	\$1,645	\$1,354	\$5,000	\$0	\$0
2023	\$1,645	\$1,354	\$5,000	\$0	\$0
2024	\$1,645	\$1,354	\$5,000	\$0	\$0
2025	\$1,645	\$1,354	\$5,000	\$0	\$0

Footpaths

Table 6.1.2 (Footpaths): Projected Expenditures for LTFP (\$,000)

Year	Operations (\$,000)	Maintenance (\$,000)	Projected capital renewal (\$,000)	Capital upgrade / new (\$,000)	Disposals (\$,000)
2016	\$1,515	\$1,336	\$3,305	\$50	\$0
2017	\$1,515	\$1,464	\$3,504	\$50	\$0
2018	\$1,515	\$1,464	\$3,501	\$50	\$0
2019	\$1,515	\$1,464	\$3,495	\$50	\$0
2020	\$1,515	\$1,464	\$3,503	\$50	\$0
2021	\$1,515	\$1,464	\$3,504	\$50	\$0
2022	\$1,515	\$1,464	\$3,504	\$0	\$0
2023	\$1,515	\$1,464	\$3,503	\$0	\$0
2024	\$1,515	\$1,464	\$3,495	\$0	\$0
2025	\$1,515	\$1,464	\$3,517	\$0	\$0

Kerb and Water Table

Table 6.1.2 (Kerb and Water Table): Projected Expenditures for LTFP (\$,000)

Year	Operations (\$,000)	Maintenance (\$,000)	Projected capital renewal (\$,000)	Capital upgrade / new (\$,000)	Disposals (\$,000)
2016	\$0	\$175	\$2,041	\$0	\$0
2017	\$0	\$214	\$1,636	\$0	\$0
2018	\$0	\$214	\$2,524	\$0	\$0
2019	\$0	\$214	\$3,039	\$0	\$0
2020	\$0	\$214	\$1,099	\$0	\$0
2021	\$0	\$214	\$1,086	\$0	\$0
2022	\$0	\$214	\$1,096	\$0	\$0
2023	\$0	\$214	\$1,095	\$0	\$0
2024	\$0	\$214	\$1,105	\$0	\$0
2025	\$0	\$214	\$1,102	\$0	\$0

Bridges

Table 6.1.2 (Bridges): Projected Expenditures for LTFP (\$,000)

Year	Operations (\$,000)	Maintenance (\$,000)	Projected capital renewal (\$,000)	Capital upgrade / new (\$,000)	Disposals (\$,000)
2016	\$0	\$256	\$120	\$0	\$0
2017	\$0	\$201	\$1,400	\$0	\$0
2018	\$0	\$201	\$775	\$0	\$0
2019	\$0	\$201	\$280	\$0	\$0
2020	\$0	\$201	\$184	\$0	\$0
2021	\$0	\$201	\$157	\$3,048	\$0
2022	\$0	\$201	\$78	\$0	\$0
2023	\$0	\$201	\$0	\$0	\$0
2024	\$0	\$201	\$0	\$0	\$0
2025	\$0	\$201	\$0	\$0	\$0

Traffic Signals

Table 6.1.2 (Traffic Signals): Projected Expenditures for LTFP (\$,000)

Year	Operations (\$,000)	Maintenance (\$,000)	Projected capital renewal (\$,000)	Capital upgrade / new (\$,000)	Disposals (\$,000)
2016	\$330	\$475	\$1,609	\$0	\$0
2017	\$330	\$492	\$1,613	\$0	\$0
2018	\$330	\$492	\$1,587	\$0	\$0
2019	\$330	\$492	\$1,594	\$0	\$0
2020	\$330	\$492	\$1,600	\$0	\$0
2021	\$330	\$492	\$1,604	\$0	\$0
2022	\$330	\$492	\$1,603	\$0	\$0
2023	\$330	\$492	\$1,606	\$0	\$0
2024	\$330	\$492	\$1,594	\$0	\$0
2025	\$330	\$492	\$1,606	\$0	\$0

6.2 Funding Strategy

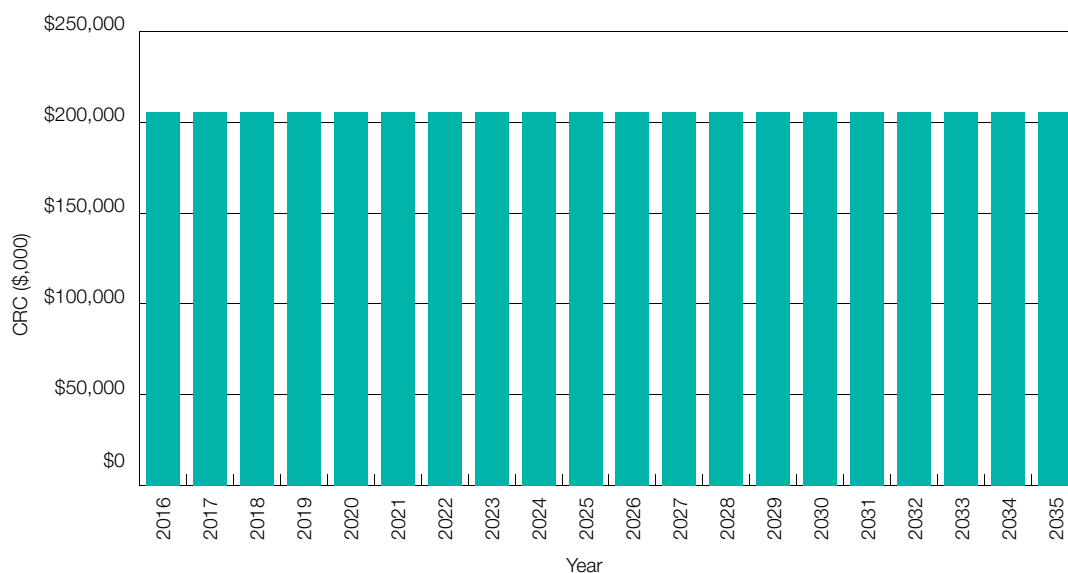
After reviewing service levels, to ensure ongoing financial sustainability projected expenditures identified in Section 6.1.2 will be accommodated in the Council's 10-year LTFP. If the proposed funding strategies cannot be adopted, then the transportation asset base condition will deteriorate and service levels will decline.

6.3 Valuation Forecasts

Roads

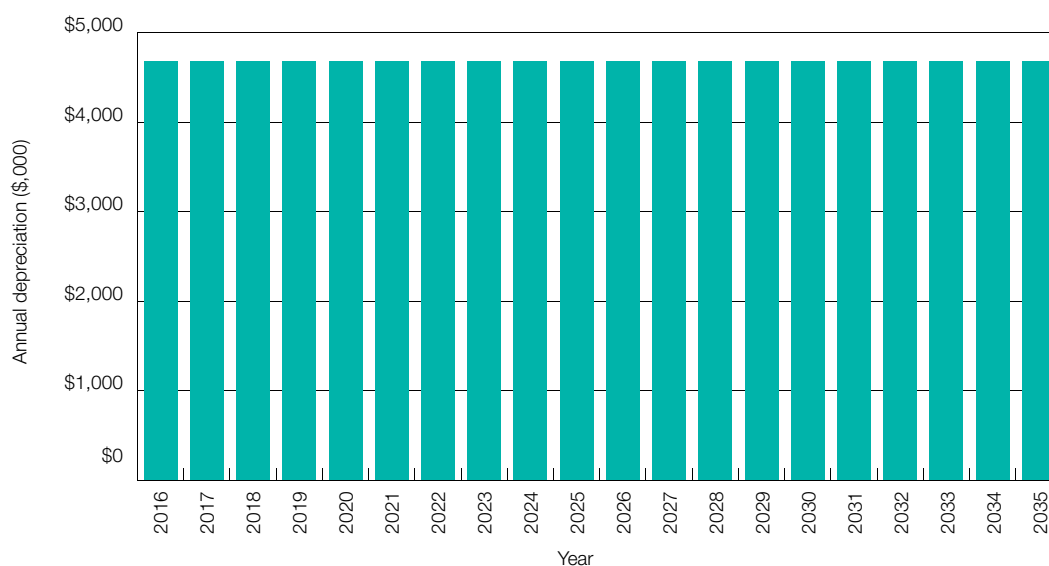
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 9 shows the projected replacement cost asset values over the planning period in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

Figure 9 (Roads): Projected Asset Values



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

Figure 10 (Roads): Projected Depreciation Expense



Due to no new assets being added to the roads asset stock, the changes to the projected values in Figure 10 above are negligible. The projected depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 11.

Figure 11 (Roads): Projected Depreciated Replacement Cost

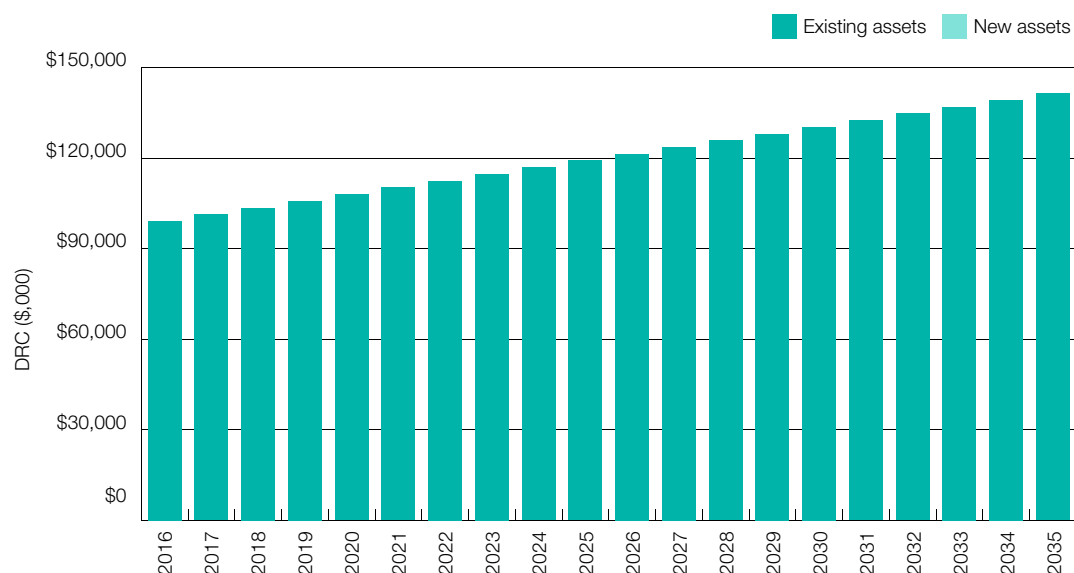
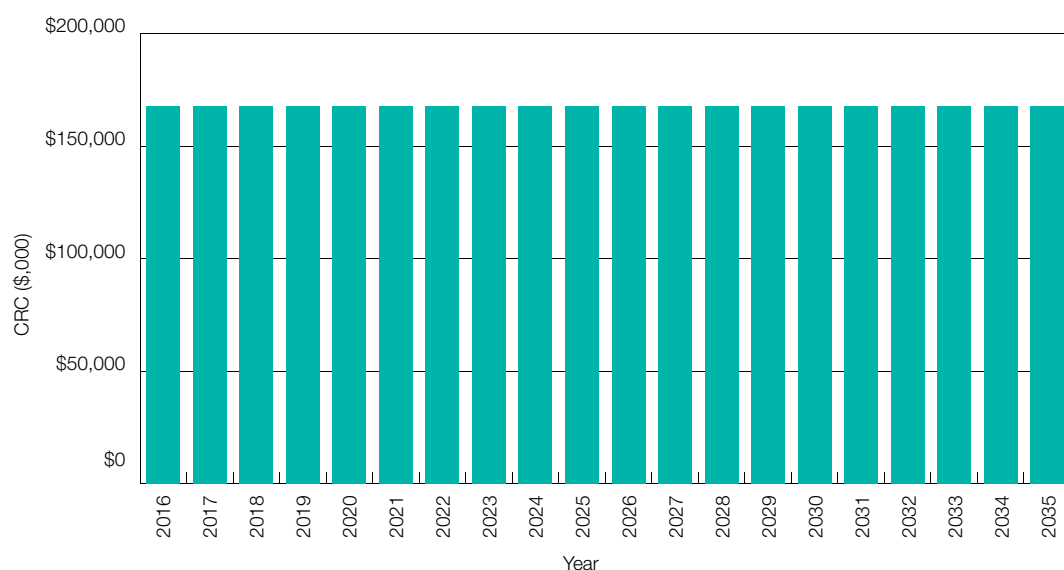


Figure 11 above shows a steady increase in the depreciated replacement cost of the road network over the 20-year period. This is because the current 2014 - 15 budget for renewal (\$6,900,000) is greater than the projected depreciation expense (\$4,700,000 / year – as per Figure10), therefore each year the projected replacement cost of road network will increase. While this indicates the current renewal budget is adequate in order to restore the health to the road network in the long term, it is still important to adopt the proposed incremental renewal funding strategy in order to remove the backlog of poor condition roads currently affecting the network at an accelerated rate, to deliver the desired service levels.

Footpaths

Figure 9 shows the projected replacement cost asset values over the planning period in real values.

Figure 9 (Footpaths): Projected Asset Values



Due to the minimal amount of new assets being added to the footpath asset stock, the changes to the projected values in Figure 9 above are negligible.

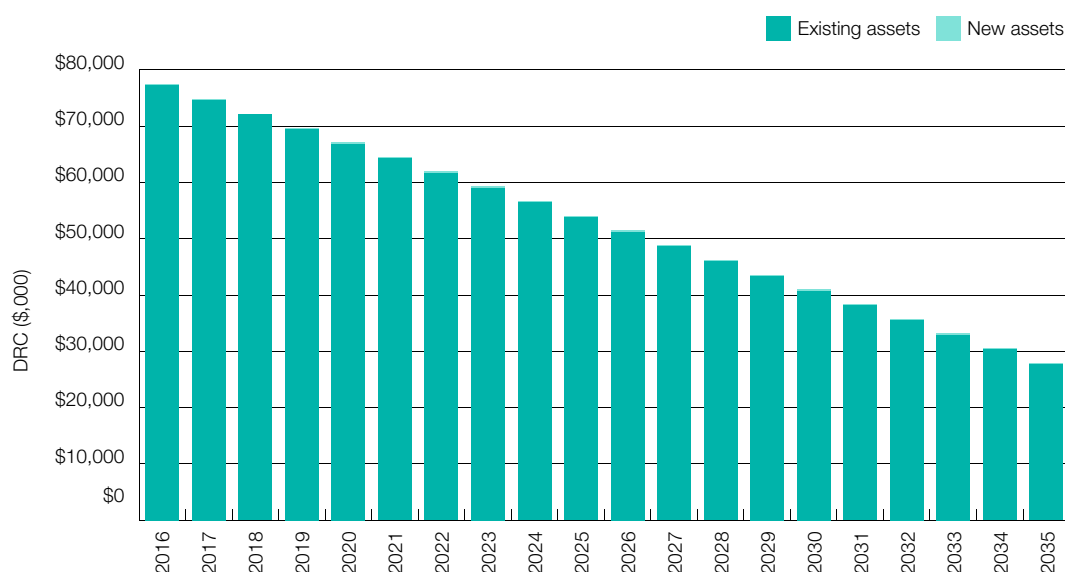
Depreciation expense values are forecast in line with asset values as shown in Figure 10.

Figure 10 (Footpaths): Projected Depreciation Expense



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

Figure 11 (Footpaths): Projected Depreciated Replacement Cost

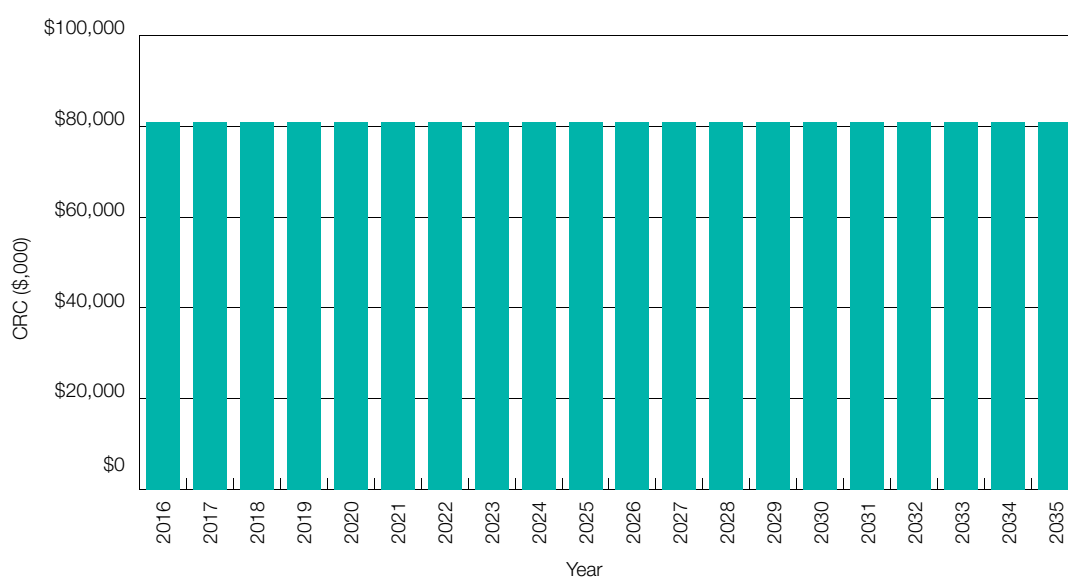


The depreciated replacement cost of the footpath network is declining gradually over the planning period suggesting that the organisation is currently not replacing the assets when they are due. As discussed in Section 5.4 (Footpaths) the current intervention point for renewal is based on both condition and where the footpath resides within the asset hierarchy. To reduce the rate of consumption of the asset base, these intervention points may be revised effectively reducing the level of service provided by the asset base. The proposed funding strategy aims at improving network health and increasing service and asset value.

Kerb and Water Table

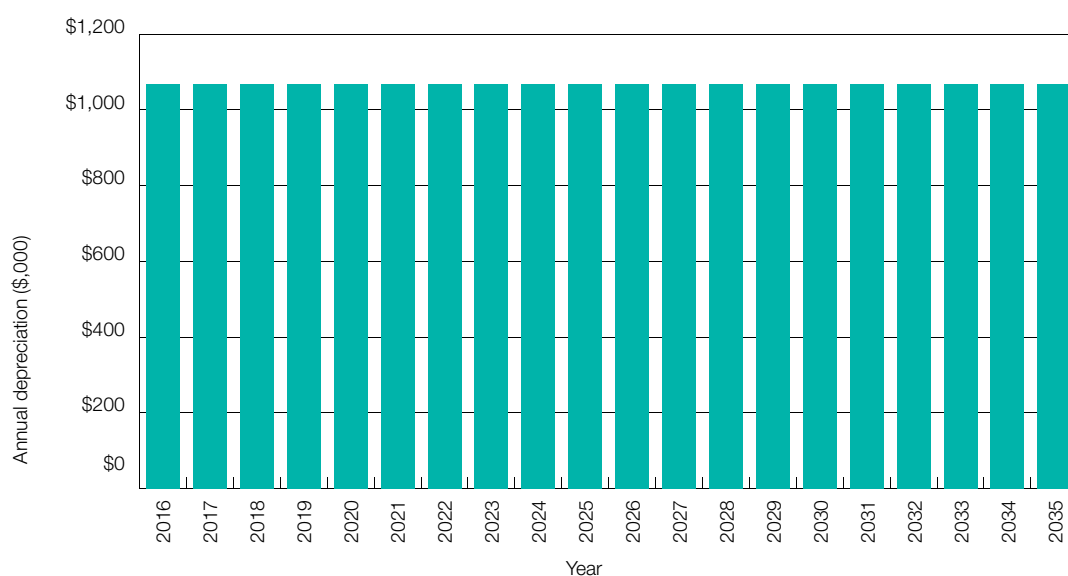
Figure 9 shows the projected replacement cost asset values over the planning period in real values.

Figure 9 (Kerb and Water Table): Projected Asset Values



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

Figure 10 (Kerb and Water Table): Projected Depreciation Expense



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

Figure 11 (Kerb and Water Table): Projected Depreciated Replacement Cost

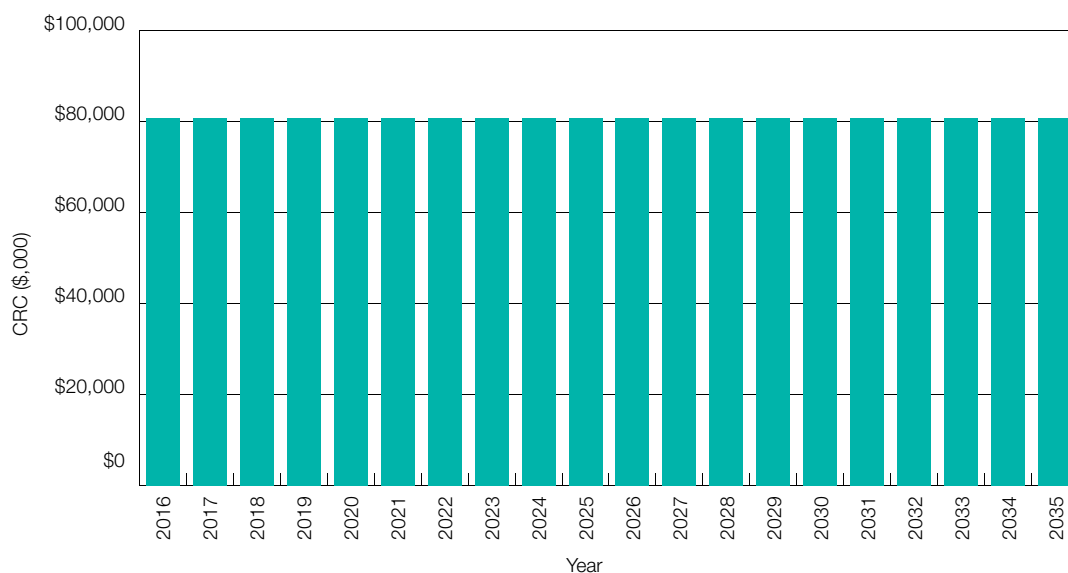


Figure 11 above shows a decrease in the depreciated replacement cost of the kerb and water table network under the current renewal funding strategy. As previously discussed, this is to be expected as in the past there has been no kerb and water table budget line in order to restore health to the network. Once this budget line is implemented in future years, it is expected that this decrease in the depreciated replacement cost will be eliminated.

Bridges

Figure 9 shows the projected replacement cost asset values over the planning period in real values.

Figure 9 (Bridges): Projected Asset Values



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

Figure 10 (Bridges): Projected Depreciation Expense



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

Figure 11 (Bridges): Projected Depreciated Replacement Cost

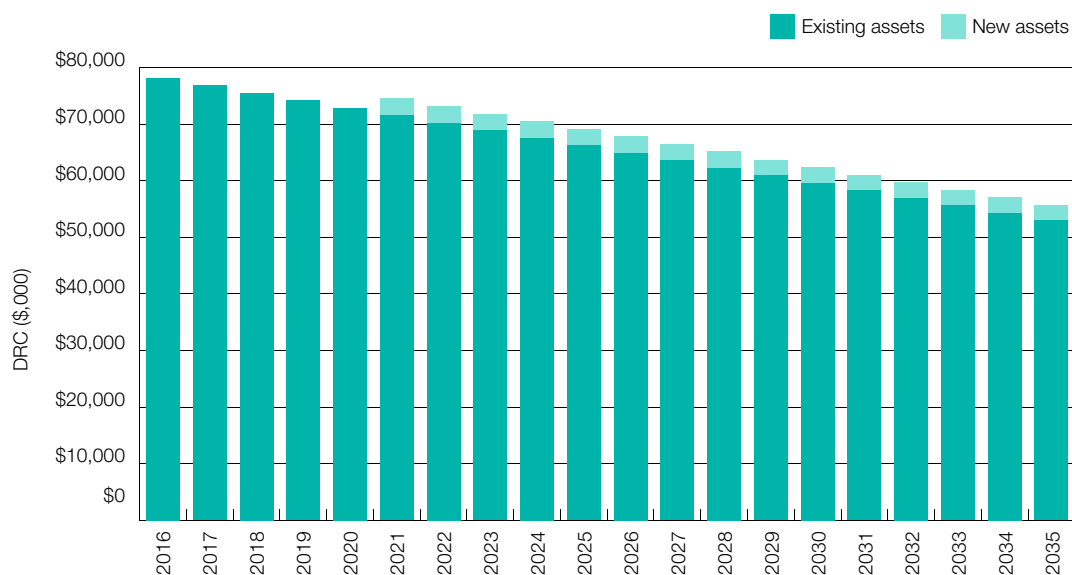
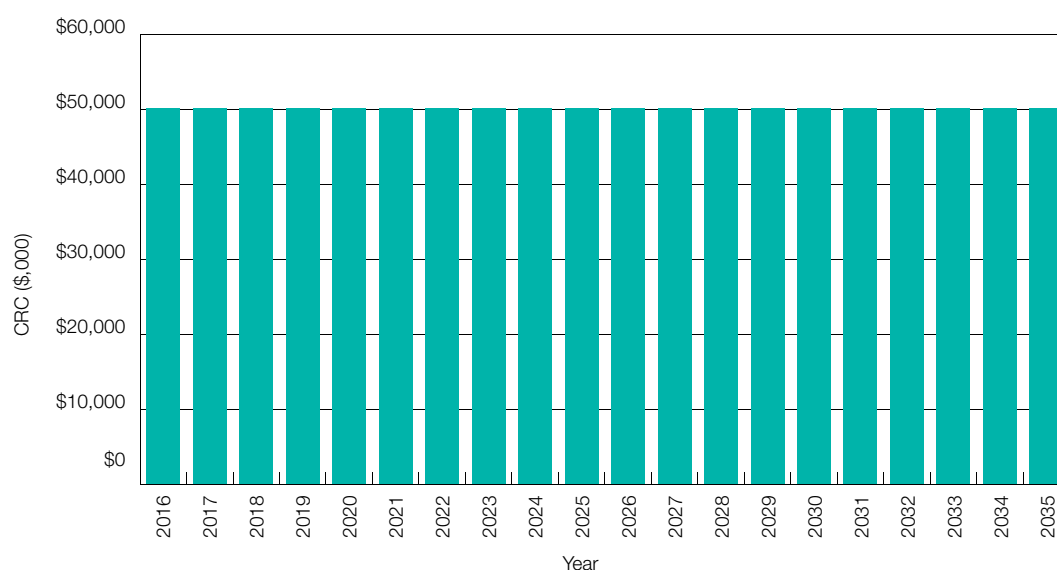


Figure 11 above shows the steady decrease in the projected depreciated replacement cost of the bridge network. However, this is acceptable because it has been accepted that at some point in the future (outside of the 20-year planning period) significant investment will be required to renew structural elements of the road bridges (currently all in good to fair condition), which will boost the depreciated replacement cost of the bridge portfolio.

Traffic Signals

Figure 9 shows the projected replacement cost asset values over the planning period in real dollar values.

Figure 9 (Traffic Signals): Projected Asset Values



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

Figure 10 (Traffic Signals): Projected Depreciation Expense



The depreciated replacement cost will vary over the forecast period depending on the rates of additional new assets, disposal of old assets, and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 11 below.

Figure 11 (Traffic Signals): Projected Depreciated Replacement Cost



Figure 11 above shows a severe decrease in the depreciated replacement cost of the traffic signal network under the current renewal funding strategy. This indicates that additional renewal funding is essential in order to maintain the assets health and avoid running the asset class into the ground.

6.4 Key Assumptions Made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this AM Plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense, and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this AM Plan and risks that these may change are shown in Table 6.4.

Table 6.4: Key Assumptions made in Asset Management Plan and Risks of Change

Key assumptions	Risk of change to assumptions
The assets will remain in the organisations ownership throughout the planning period.	Low
Required maintenance is assumed to take place in accordance with relevant guidelines / standards.	Medium
All expenditure stated is in current 2014 - 15 dollar values.	Low
Depreciation forecast based on accurate valuations of assets.	High
Budget forecast based on previous 2014 - 15 renewal, maintenance, and operational budgets.	Low
Asset condition deteriorates linearly.	Low
Useful life values are assumed to be the economic life of the assets.	High

6.5 Forecast Reliability and Confidence

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

Table 6.5: Data Confidence Grading System

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

The estimated confidence levels for and reliability of data used in this AM Plan are presented in Appendix E (Table 6.5.1).

Over all data sources, the data confidence is assessed as being of low to medium confidence and this applies to the data used in the preparation of this AM Plan.

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

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Since 2004, Council have used the Technology One Finance One System. It is a finance system where all income and expenditures are recorded. The General Ledger captures all financial activities for Council, and is comprised of three sub ledgers:

- Capital Works Ledger for all capital budgets;
- Property Ledger for property budgets; and
- Public Realm Ledger for all depot works.

All three ledgers are consolidated into the General Ledger.

The Capital Works Ledger records all the budgets for the renewals program. All costs for renewals are tracked through this ledger. Through the XLOne tool, reports can be generated on an individual project as well as asset category level. This allows project managers and asset managers to keep track of their project spend on a regular basis. Once projects are completed and they are then capitalised into the HANSEN Asset Management System.

Accountabilities for financial systems

All financial information in relation to all asset classes (buildings, land, roads, footpaths, stormwater, bridges, traffic signals, kerbs, landscaping, lighting, and appurtenances) are stored in the Corporate Asset Management System – HANSEN. IT Equipment and Plant and Fleet assets are stored in Finance One.

Finance One also stores General Ledger information, Accounts Payable / Receivable, Bank Reconciliation, and Balance Sheet.

Accounting standards and regulations

There are various regulations and accounting standards that we must comply with; however, those that are specifically related to asset management are:

- *South Australian Local Government Act 1999 and Local Government (Financial Management) Regulations 2011;*
- *AASB 116 Property Plant and Equipment;* and
- *AASB 13 Fair Value Measurement.*

Capital / maintenance threshold

Council maintain an asset accounting policy which sets the threshold of materiality for all asset classes at \$5,000. Where an individual asset falls below the threshold amount but those individual assets form part of a network e.g. stormwater assets, street and Park Lands furniture, then those assets get capitalised given the aggregated value of the assets above the threshold.

Required changes to accounting financial systems arising from this AM Plan

Council is currently implementing RAMM Asset Maintenance Management System across all asset classes. It is anticipated that some changes to the financial systems arising from the integration of Finance One with RAMM.

Improvements to the reporting of renewal / enhancement / new asset capital expenditure, reactive, and planned maintenance and operating expenses have been identified to enhance future versions of this AM Plan.

7.1.2 Asset management system

Council currently uses Hansen as its Asset Management System. This system is linked to ArcGIS.

Council is in the process of implementing RAMM maintenance management software which has some core functionality as an Asset Management System.

Council also uses SPM assets software for condition audits and long term planning of building assets.

Asset registers

Currently all infrastructure assets (excluding bridges and traffic signals) have been established in RAMM. Buildings and Plant and Fleet assets are managed in Hansen.

Linkage from asset management to financial system

There is no direct interface between the asset management systems and the financial systems. As part of the RAMM Implementation this has been scheduled to occur in the 2015 - 16 financial year for infrastructure assets. Buildings and Plant and Fleet will not be included in this implementation.

Accountabilities for asset management system and data maintenance

Processes have been established to ensure that data in the asset management systems are up-to-date and audit processes are in place to maintain and improve the data integrity.

Required changes to asset management system arising from this AM Plan

Council has recognised that improved analysis of data for long term predictive modelling, and integration of valuations and unit rates into Asset Information Systems is very crucial to achieve asset management outcomes.

7.2 Improvement Plan

The Asset Management Improvement Plan to improve the management of Council's transportation assets is detailed in Table 7.2.

All Transportation Assets

Table 7.2 (All Transportation Assets): Improvement Plan

Task no.	Task	Responsibility	Resources required	Timeline
1	Review of unit rates and asset valuations.	Infrastructure Assets	Internal	12 months
2	Review of capital renewal and maintenance strategies.	Infrastructure Assets	Internal	12 months
3	Maintain an annual review of the AM Plan incorporating an update of service level performance, financial projections, and risk.	Infrastructure Assets	Internal	12 months
4	Update the AM Plan for any gifted assets.	Infrastructure Assets	Internal	12 months
5	Undertake regular reporting on maintenance and cleansing tasks to ensure targets are being met and costs recorded.	Infrastructure Assets, Asset Systems, Public Realm	Internal	12 months
6	Investigate alternate renewal treatments to reduce renewal costs or significantly extend useful life to improve low asset renewal ratios.	Infrastructure Assets	Internal	12 months
7	Incorporate impacts of ADM in future plan revisions.	Infrastructure Assets	External / Internal	12 months
8	Implement strategic upgrades, resulting from <i>The City of Adelaide Strategic Plan 2016 - 20</i> into this AM Plan.	Infrastructure Assets	Internal	12 months

Roads

Table 7.2 (Roads): Improvement Plan

Task no.	Task	Responsibility	Resources required	Timeline
1	Additional research needs to be undertaken in future revisions of this AM Plan to quantify the impact on the road infrastructure of the forecast growth.	Infrastructure Assets	Internal	12 months
2	Investigate alternate renewal treatments to reduce renewal costs or significantly extend useful life to improve low asset renewal ratios.	Infrastructure Assets	Internal	12 months
3	Incorporate off street car parks into AM Plan.	Infrastructure Assets	Internal	12 months

Footpaths

Table 7.2 (Footpaths): Improvement Plan

Task no.	Task	Responsibility	Resources required	Timeline
1	Review of footpath hierarchy to further disaggregate the network and achieve better renewal forecasting accuracy.	Infrastructure Assets, Asset Systems	Internal	6 months
2	Undertake a new condition assessment so that it is uniform across the whole asset category.	Infrastructure Assets, Asset Systems	Internal	9 months
3	Implement an continuous improvement strategy to assess the performance of Council controlled footpath assets.	Infrastructure Assets, Asset Systems, Public Realm	Internal	12 months
4	Incorporate findings from RTLP strategic AM Plan.	Infrastructure Assets	Internal	12 months
5	Develop functional and capacity / utilisation rating system.	Infrastructure Assets	Internal	12 months
6	Collect asset utilisation and functionality data to identify areas where asset upgrades / new assets may be required.	Infrastructure Assets	External / Internal	12 months

Kerb and Water Table

Table 7.2 (Kerb and Water Table): Improvement Plan

Task no.	Task	Responsibility	Resources required	Timeline
1	Adjust useful lives to include environmental damage (trees).	Infrastructure Assets	Internal	12 months
2	Visual inspection of condition data compared to on site.	Infrastructure Assets	Internal	12 months
3	Historical analysis of Condition 1 data to gain actual installation dates (Google Earth maps, project briefs, etc).	Infrastructure Assets	Internal	12 months
4	Create a maintenance inspection program which results in a prioritised list with ranking criteria.	Infrastructure Assets	Internal	6 months

Bridges

Table 7.2 (Bridges): Improvement Plan

Task No	Task	Responsibility	Resources required	Timeline
1	Improve recording methods, to obtain a better understanding of what works have been done to the bridges in the past.	Infrastructure Assets	Internal resources	All future operations
2	Update AM Plan following results of load capacity review on Adelaide Bridge and Albert Bridge.	Infrastructure Assets	External	24 months
3	Update AM Plan following a review of bridge barriers and balustrading to check compliance with standards.	Infrastructure Assets	Internal	12 months
4	Undertake regular reporting on maintenance and cleansing tasks to ensure targets are being met and costs recorded.	Infrastructure Assets, Asset Systems, Public Realm	Internal	6 months

Traffic Signals

Table 7.2 (Traffic Signals): Improvement Plan

Task No	Task	Responsibility	Resources required	Timeline
1	Traffic Control Devices (TDCs) to be included in yearly review of AM Plan – roundabouts and traffic islands have already been included in the kerb and water table asset data in this AM Plan.	Traffic Signals Consultant, Infrastructure Assets Team, and Infrastructure Maintenance Team	Internal	12 months
2	Review emergency response plans (ERPs) and upgrades both plans as appropriate, including this AM Plan where required.	Traffic Signals Consultant, Infrastructure Assets Team, and responsible Council Program for ERPs	Internal	24 months
3	Review how Council's asset systems (HANSEN, RAMMs) and Finance system can be utilised to their full potential such as uploading existing condition audit data, as well as future data collection aimed at improving traffic signal assets by prioritising capital works programs.	Traffic Signal Consultant, Infrastructure Assets Team, Asset Systems Team, and Finance and Risk Program	Internal	12 months
4	Update inventory, valuation, and condition data for the SCATS network.	Infrastructure Assets, Assets Systems	External	12 months

7.3 Monitoring and Review Procedures

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

The AM Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade and disposal expenditures, and projected expenditure values adjusted in line with the organisation's LTFP.

This AM Plan has a nominal life of four years (Council / Board election cycle) and is due for complete revision and updating within 12 months of each Council / Board election.

7.4 Performance Measures

The effectiveness of the AM Plan can be measured in the following ways:

- The degree to which the required proposed expenditures identified in this AM Plan are incorporated into Council's LTFP;
- The degree to which one to five-year detailed works programs, budgets, business plans, and organisational structures take into account the 'global' works program trends provided by the AM Plan;
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks, and residual risks are incorporated into the Council's Strategic Plan and associated plans; and
- The Asset Renewal Funding Ratio target of 1.0 is achieved (financial sustainability measure).

8. REFERENCES

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9. APPENDICES

Appendix A	Maintenance Response Levels of Service
Appendix B	Projected Three-year Capital Renewal and Replacement Works Program
Appendix C	LTFP Budgeted Expenditures Accommodated in AM Plan
Appendix D	Projected and LTFP Budgeted Renewals and Financing Shortfall
Appendix E	Data Confidence Assessment for Data Used in AM Plan
Appendix F	Findings from formal consultation
Appendix G	Abbreviations
Appendix H	Glossary

Appendix A: Maintenance Response Levels of Service



The maintenance response levels of service for transportation assets will be made available from December 2015, after community consultation.

Appendix B: Projected Three-year Capital Renewal and Replacement Works Program

A full list of capital renewal projects, projected over the next three years can be found at the following link [ACC2014 / 198814](#).



Appendix C: LTFP Budgeted Expenditures Accommodated in AM Plan

Roads

NAMS.PLUS3 Asset Management		Adelaide CC								
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2015_Roads_S1_V20 Asset Management Plan		 								
First year of expenditure projections		2016 (financial yr ending)								
2015_Roads Asset values at start of planning period Current replacement cost \$205,691 (000) Depreciable amount \$205,691 (000) Depreciated replacement cost \$96,903 (000) Annual depreciation expense \$4,672 (000)		Calc CRC from Asset Register \$205,691 (000) This is a check for you.								
Planned Expenditures from LTFP 20 Year Expenditure Projections		Operations and Maintenance Costs for New Assets Additional operations costs % of asset value 0.00% Additional maintenance 0.00% Additional depreciation 2.27% Planned renewal budget (information only) You may use these values calculated from your data or overwrite the links.								
Note: Enter all values in current		2016 values								
Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645	\$1,645
Maintenance										
Reactive maintenance budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Planned maintenance budget	\$531	\$531	\$531	\$531	\$531	\$531	\$531	\$531	\$531	\$531
Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total maintenance	\$531	\$531	\$531	\$531	\$531	\$531	\$531	\$531	\$531	\$531
Capital										
Planned renewal budget	\$6,900	\$6,900	\$6,900	\$6,900	\$6,900	\$6,900	\$6,900	\$6,900	\$6,900	\$6,900
Planned upgrade/new budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asset Disposals										
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$1,542	\$823	\$823	\$823	\$823	\$823	\$823	\$823	\$823	\$823
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 20 Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
User Comments #2										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Forms 2A & 2B	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Forecast Capital Upgrade from Form 2C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Appendix C: LTFP Budgeted Expenditures Accommodated in AM Plan *continued*

Footpaths

NAMS.PLUS3 Asset Management		Adelaide CC								
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2015_Footpaths_S1_V13 Asset Management Plan		 								
First year of expenditure projections		2016 (financial yr ending)								
2015_Footpaths										
Asset values at start of planning period		Calc CRC from Asset Register								
Current replacement cost	\$167,539 (000)	\$167,539 (000)								
Depreciable amount	\$167,539 (000)	This is a check for you.								
Depreciated replacement cost	\$79,911 (000)									
Annual depreciation expense	\$4,211 (000)									
Planned Expenditures from LTFP		Operations and Maintenance Costs for New Assets Additional operations costs: 0.90% Additional maintenance: 0.53% Additional depreciation: 2.51% Planned renewal budget (information only) You may use these values calculated from your data or overwrite the links.								
20 Year Expenditure Projections		Note: Enter all values in current 2016 values								
Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515
Maintenance										
Reactive maintenance budget	\$886	\$886	\$886	\$886	\$886	\$886	\$886	\$886	\$886	\$886
Planned maintenance budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total maintenance	\$886	\$886	\$886	\$886	\$886	\$886	\$886	\$886	\$886	\$886
Capital										
Planned renewal budget	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600
Planned upgrade/new budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asset Disposals										
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$450	\$578	\$578	\$578	\$578	\$578	\$578	\$578	\$578	\$578
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
User Comments #2										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Forms 2A & 2B	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forecast Capital Upgrade from Form 2C	\$50	\$50	\$50	\$50	\$50	\$50	\$0	\$0	\$0	\$0

Appendix C: LTFP Budgeted Expenditures Accommodated in AM Plan *continued*

Kerb and Water Table

NAMS.PLUS3 Asset Management		Adelaide CC								
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b and Watertable_S1_V20 Asset Management Plan		 								
First year of expenditure projections		2016 (financial yr ending)								
2015_Kerb and Watertable Asset values at start of planning period		Calc CRC from Asset Register \$80,804 (000) This is a check for you.								
Current replacement cost	\$80,804 (000)									
Depreciable amount	\$80,804 (000)									
Depreciated replacement cost	\$45,384 (000)									
Annual depreciation expense	\$1,068 (000)									
Planned Expenditures from LTFP		Operations and Maintenance Costs for New Assets								
20 Year Expenditure Projections Note: Enter all values in current 2016 values		Additional operations costs: 0.00% Additional maintenance: 0.00% Additional depreciation: 1.32% Planned renewal budget (information only) You may use these values calculated from your data or overwrite the links.								
Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance										
Reactive maintenance budget	\$124	\$124	\$124	\$124	\$124	\$124	\$124	\$124	\$124	\$124
Planned maintenance budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total maintenance	\$124	\$124	\$124	\$124	\$124	\$124	\$124	\$124	\$124	\$124
Capital										
Planned renewal budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Planned upgrade/new budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asset Disposals										
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$51	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
User Comments #2										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Forms 2A & 2B	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Forecast Capital Upgrade from Form 2C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Appendix C: LTFP Budgeted Expenditures Accommodated in AM Plan *continued*

Bridges

NAMS.PLUS3 Asset Management		Adelaide CC								
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2015_Bridges_S1_V20		Asset Management Plan								
2015_Bridges		IPWEA INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA								
First year of expenditure projections		JRA								
2016 (financial yr ending)										
Asset values at start of planning period Current replacement cost \$155,759 (000) Depreciable amount \$155,759 (000) Depreciated replacement cost \$79,471 (000) Annual depreciation expense \$1,503 (000)		Calc CRC from Asset Register \$155,759 (000) This is a check for you.								
Planned Expenditures from LTFP 20 Year Expenditure Projections		Operations and Maintenance Costs for New Assets Additional operations costs 0.00% Additional maintenance 0.02% Additional depreciation 0.97% Planned renewal budget (information only) You may use these values calculated from your data or overwrite the links.								
Note: Enter all values in current		2016 values								
Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance										
Reactive maintenance budget	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$27
Planned maintenance budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total maintenance	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$27
Capital										
Planned renewal budget	\$180	\$180	\$180	\$180	\$180	\$180	\$180	\$180	\$180	\$180
Planned upgrade/new budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asset Disposals										
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$229	\$174	\$174	\$174	\$174	\$174	\$174	\$174	\$174	\$174
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
User Comments #2										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Forms 2A & 2B	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Forecast Capital Upgrade from Form 2C	\$0	\$0	\$0	\$0	\$0	\$3,048	\$0	\$0	\$0	\$0

Appendix C: LTFP Budgeted Expenditures Accommodated in AM Plan *continued*

Traffic Signals

NAMS.PLUS3 Asset Management		Adelaide CC								
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Traffic Signals_S1_V20 Asset Management Plan		 								
First year of expenditure projections		2016 (financial yr ending)								
Traffic Signals Asset values at start of planning period Current replacement cost \$50,300 (000) Depreciable amount \$50,300 (000) Depreciated replacement cost \$27,269 (000) Annual depreciation expense \$2,027 (000)		Calc CRC from Asset Register \$50,300 (000) This is a check for you.								
Planned Expenditures from LTFP 20 Year Expenditure Projections		Operations and Maintenance Costs for New Assets Additional operations costs 0.00% Additional maintenance 0.00% Additional depreciation 4.05% Planned renewal budget (information only) You may use these values calculated from your data or overwrite the links.								
Note: Enter all values in current		2016 values								
Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330	\$330
Maintenance										
Reactive maintenance budget	\$470	\$470	\$470	\$470	\$470	\$470	\$470	\$470	\$470	\$470
Planned maintenance budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total maintenance	\$470	\$470	\$470	\$470	\$470	\$470	\$470	\$470	\$470	\$470
Capital										
Planned renewal budget	\$875	\$875	\$875	\$875	\$875	\$875	\$875	\$875	\$875	\$875
Planned upgrade/new budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asset Disposals										
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$5	\$21	\$21	\$21	\$21	\$21	\$21	\$21	\$21	\$21
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
User Comments #2										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Forms 2A & 2B	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Forecast Capital Upgrade from Form 2C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall

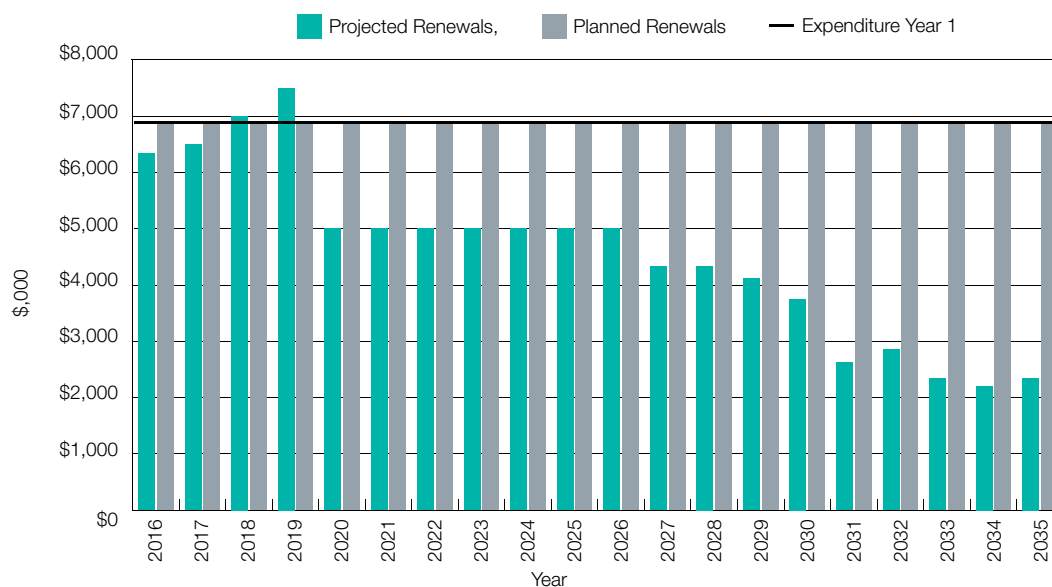
Roads

Table 6.1.1 (Roads): Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected renewals (\$,000)	LTFP renewal budget (\$,000)	Renewal financing shortfall (\$,000) (-ve gap, +ve surplus)	Cumulative shortfall (\$,000) (-ve gap, +ve surplus)
2016	\$6,337	\$6,900	\$563	\$563
2017	\$6,500	\$6,900	\$400	\$963
2018	\$7,000	\$6,900	-\$100	\$863
2019	\$7,500	\$6,900	-\$600	\$263
2020	\$4,999	\$6,900	\$1,901	\$2,164
2021	\$5,000	\$6,900	\$1,900	\$4,064
2022	\$5,000	\$6,900	\$1,900	\$5,964
2023	\$5,000	\$6,900	\$1,900	\$7,863
2024	\$5,000	\$6,900	\$1,900	\$9,763
2025	\$5,000	\$6,900	\$1,900	\$11,663
2026	\$5,000	\$6,900	\$1,900	\$13,563
2027	\$4,329	\$6,900	\$2,571	\$16,134
2028	\$4,338	\$6,900	\$2,562	\$18,696
2029	\$4,120	\$6,900	\$2,780	\$21,475
2030	\$3,750	\$6,900	\$3,150	\$24,626
2031	\$2,620	\$6,900	\$4,280	\$28,906
2032	\$2,850	\$6,900	\$4,050	\$32,956
2033	\$2,340	\$6,900	\$4,560	\$37,517
2034	\$2,203	\$6,900	\$4,697	\$42,214
2035	\$2,347	\$6,900	\$4,553	\$46,767

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Figure 8 (Roads): Projected and LTFP Budgeted Renewal Expenditure



Planned renewals are those that can be accommodated under the 2014 - 15 renewal budget.

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

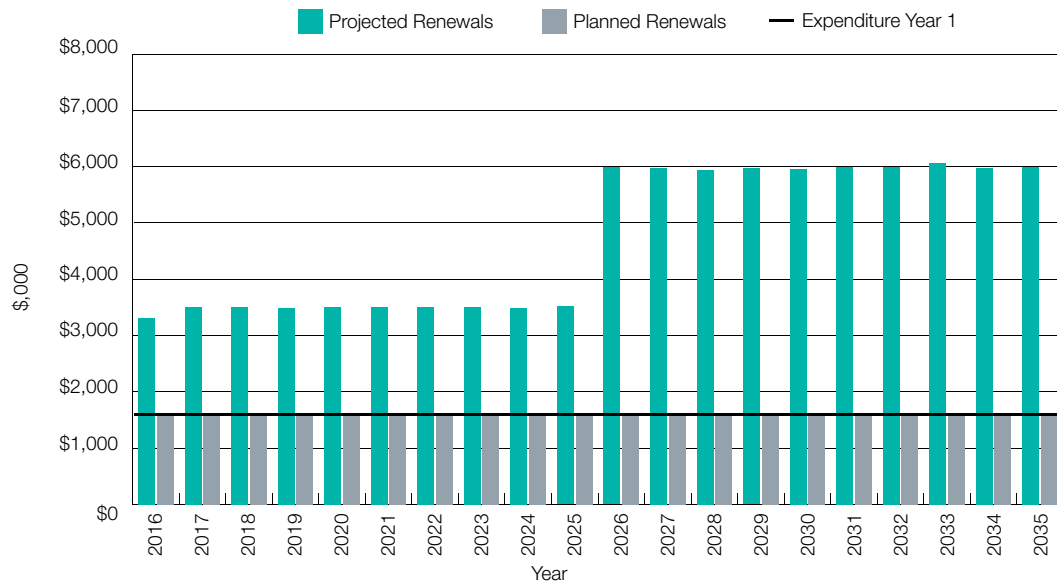
Footpaths

Table 6.1.1 (Footpaths): Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected renewals (\$,000)	LTFP renewal budget (\$,000)	Renewal financing shortfall (\$,000) (-ve gap, +ve surplus)	Cumulative shortfall (\$,000) (-ve gap, +ve surplus)
2016	\$3,305	\$1,600	-\$1,705	-\$1,705
2017	\$3,504	\$1,600	-\$1,904	-\$3,609
2018	\$3,501	\$1,600	-\$1,901	-\$5,510
2019	\$3,495	\$1,600	-\$1,895	-\$7,405
2020	\$3,503	\$1,600	-\$1,903	-\$9,307
2021	\$3,504	\$1,600	-\$1,904	-\$11,212
2022	\$3,504	\$1,600	-\$1,904	-\$13,116
2023	\$3,503	\$1,600	-\$1,903	-\$15,018
2024	\$3,495	\$1,600	-\$1,895	-\$16,913
2025	\$3,517	\$1,600	-\$1,917	-\$18,830
2026	\$5,984	\$1,600	-\$4,384	-\$23,214
2027	\$5,977	\$1,600	-\$4,377	-\$27,591
2028	\$5,940	\$1,600	-\$4,340	-\$31,931
2029	\$5,967	\$1,600	-\$4,367	-\$36,298
2030	\$5,961	\$1,600	-\$4,361	-\$40,660
2031	\$5,994	\$1,600	-\$4,394	-\$45,054
2032	\$5,994	\$1,600	-\$4,394	-\$49,447
2033	\$6,066	\$1,600	-\$4,466	-\$53,914
2034	\$5,973	\$1,600	-\$4,373	-\$58,287
2035	\$5,995	\$1,600	-\$4,395	-\$62,681

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Figure 8 (Footpaths): Projected and LTFP Budgeted Renewal Expenditure



* Planned renewals are those that can be accommodated under the 2014 - 15 renewal budget.

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Kerb and Water Table

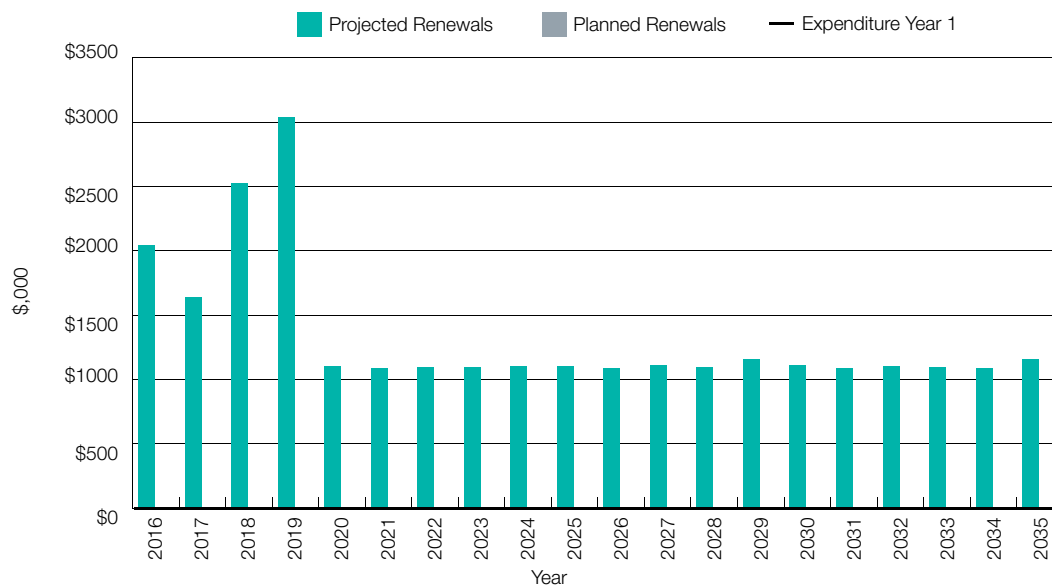
Table 6.1.1 (Kerb and Water Table): Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected renewals (\$,000)	LTFP renewal budget (\$,000)	Renewal financing shortfall (\$,000) (-ve gap, +ve surplus)	Cumulative shortfall (\$,000) (-ve gap, +ve surplus)
2016	\$2,041	\$0	-\$2,041	-\$2,041
2017	\$1,636	\$0	-\$1,636	-\$3,676
2018	\$2,524	\$0	-\$2,524	-\$6,200
2019	\$3,039	\$0	-\$3,039	-\$9,239
2020	\$1,099	\$0	-\$1,099	-\$10,339
2021	\$1,086	\$0	-\$1,086	-\$11,425
2022	\$1,096	\$0	-\$1,096	-\$12,521
2023	\$1,095	\$0	-\$1,095	-\$13,616
2024	\$1,105	\$0	-\$1,105	-\$14,721
2025	\$1,102	\$0	-\$1,102	-\$15,823
2026	\$1,091	\$0	-\$1,091	-\$16,914
2027	\$1,108	\$0	-\$1,108	-\$18,022
2028	\$1,094	\$0	-\$1,094	-\$19,116
2029	\$1,156	\$0	-\$1,156	-\$20,271
2030	\$1,108	\$0	-\$1,108	-\$21,380
2031	\$1,087	\$0	-\$1,087	-\$22,467
2032	\$1,106	\$0	-\$1,106	-\$23,573
2033	\$1,092	\$0	-\$1,092	-\$24,665
2034	\$1,091	\$0	-\$1,091	-\$25,756
2035	\$1,154	\$0	-\$1,154	-\$26,910

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

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Figure 8 (Kerb and Water Table): Projected and LTFP Budgeted Renewal Expenditure



* Planned renewals are those that can be accommodated under the 2014 - 15 renewal budget.

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Bridges

Table 6.1.1 (Bridges): Projected and LTFP Budgeted Renewals and Financing Shortfall

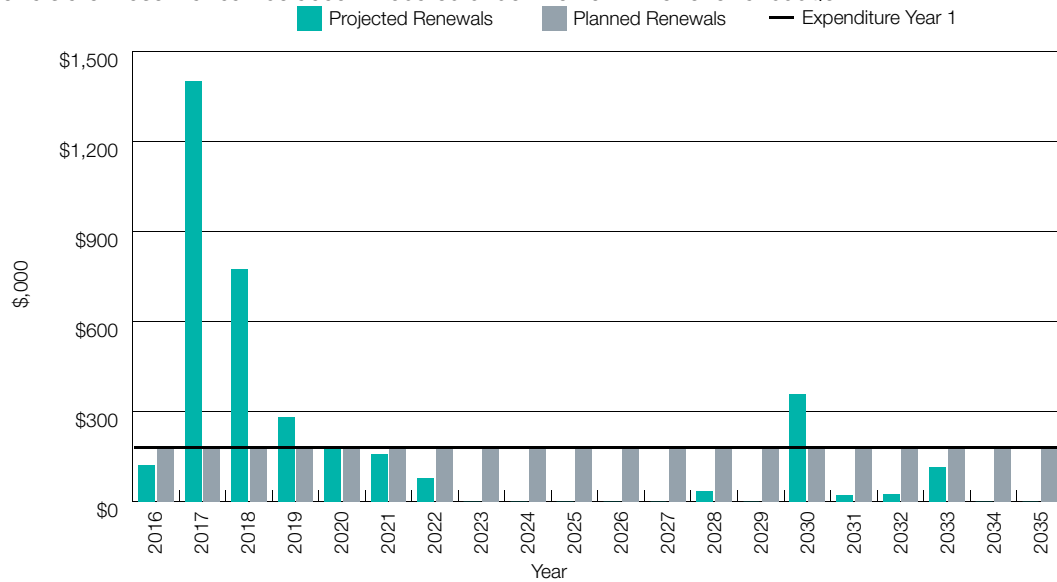
Year	Projected renewals (\$,000)	LTFP renewal budget (\$,000)	Renewal financing shortfall (\$,000) (-ve gap, +ve surplus)	Cumulative shortfall (\$,000) (-ve gap, +ve surplus)
2016	\$120	\$180	\$60	\$60
2017	\$1,400	\$180	-\$1,220	-\$1,160
2018	\$775	\$180	-\$595	-\$1,755
2019	\$280	\$180	-\$100	-\$1,855
2020	\$184	\$180	-\$4	-\$1,859
2021	\$157	\$180	\$23	-\$1,836
2022	\$78	\$180	\$102	-\$1,734
2023	\$0	\$180	\$180	-\$1,554
2024	\$0	\$180	\$180	-\$1,374
2025	\$0	\$180	\$180	-\$1,194
2026	\$0	\$180	\$180	-\$1,014
2027	\$0	\$180	\$180	-\$834
2028	\$36	\$180	\$144	-\$691
2029	\$0	\$180	\$180	-\$511
2030	\$359	\$180	-\$179	-\$690
2031	\$23	\$180	\$157	-\$533
2032	\$26	\$180	\$154	-\$379
2033	\$115	\$180	\$65	-\$314
2034	\$0	\$180	\$180	-\$134
2035	\$0	\$180	\$180	\$46

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

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Figure 8 (Bridges): Projected and LTFP Budgeted Renewal Expenditure

* Planned renewals are those that can be accommodated under the 2014 - 15 renewal budget.



Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Traffic Signals

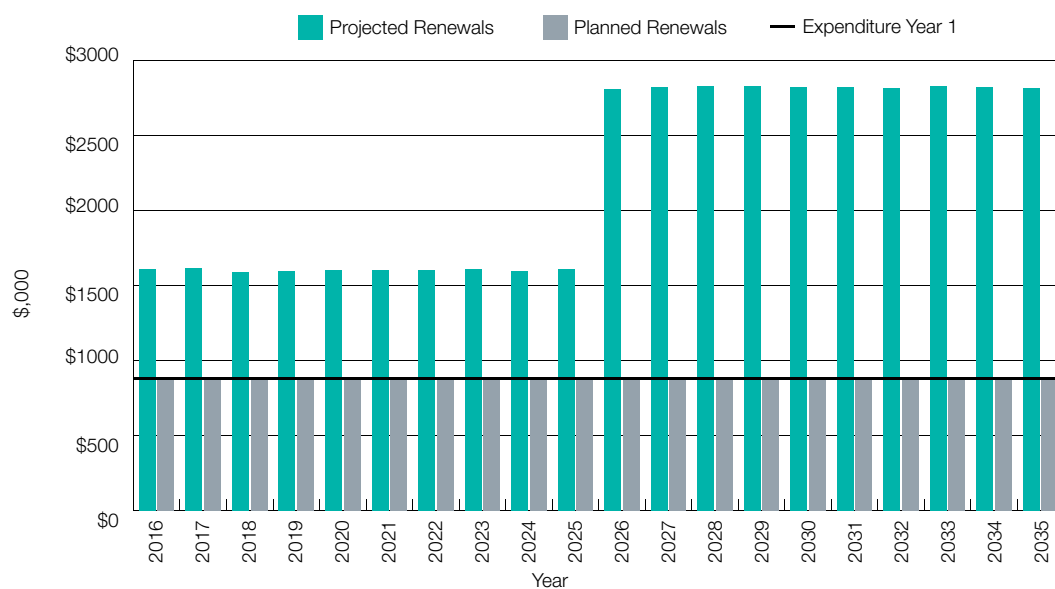
Table 6.1.1 (Traffic Signals): Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected renewals (\$,000)	LTFP renewal budget (\$,000)	Renewal financing shortfall (\$,000) (-ve gap, +ve surplus)	Cumulative shortfall (\$,000) (-ve gap, +ve surplus)
2016	\$1,609	\$875	-\$734	-\$734
2017	\$1,613	\$875	-\$738	-\$1,472
2018	\$1,587	\$875	-\$712	-\$2,184
2019	\$1,594	\$875	-\$719	-\$2,903
2020	\$1,600	\$875	-\$725	-\$3,628
2021	\$1,604	\$875	-\$729	-\$4,357
2022	\$1,603	\$875	-\$728	-\$5,085
2023	\$1,606	\$875	-\$731	-\$5,816
2024	\$1,594	\$875	-\$719	-\$6,536
2025	\$1,606	\$875	-\$731	-\$7,267
2026	\$2,810	\$875	-\$1,935	-\$9,202
2027	\$2,822	\$875	-\$1,947	-\$11,149
2028	\$2,825	\$875	-\$1,950	-\$13,099
2029	\$2,826	\$875	-\$1,951	-\$15,050
2030	\$2,818	\$875	-\$1,943	-\$16,994
2031	\$2,819	\$875	-\$1,944	-\$18,937
2032	\$2,812	\$875	-\$1,937	-\$20,874
2033	\$2,830	\$875	-\$1,955	-\$22,829
2034	\$2,818	\$875	-\$1,943	-\$24,772
2035	\$2,816	\$875	-\$1,941	-\$26,714

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

Appendix D: Projected and LTFP Budgeted Renewals and Financing Shortfall *continued*

Figure 8 (Traffic Signals): Projected and LTFP Budgeted Renewal Expenditure



* Planned renewals are those that can be accommodated under the 2014 - 15 renewal budget.

Appendix E: Data Confidence Assessment for Data Used in AM Plan

Roads

Table 6.5.1 (Roads): Data Confidence Assessment for Data used in Asset Management Plan

Data	Confidence assessment	Comment
Demand drivers	Reliable	Demand drivers have been sourced from a number of Council strategic plans and policies including <i>Smart Move</i> , <i>Park Lands Management Strategy</i> , <i>Community Land Management Plans</i> , <i>Council Strategic Plan</i> , and State Government's <i>30-year Plan for Greater Adelaide</i> .
Growth projections	Reliable	Provided by Council's strategic plans and <i>30-year Plan for Greater Adelaide</i> .
Operations expenditures	Reliable	Obtained from financial systems.
Maintenance expenditures	Reliable	Obtained from financial systems. The spread of budget from planned to unplanned has not been documented.
Projected renewal expenditures	Reliable	Unit rates used for the valuations have been obtained from a register of Public Realm labour rates and cost of materials and plant.
- Asset values		
- Asset residual values	Not Applicable	There are no asset residual values used in this plan.
- Asset useful lives	Reliable	An analysis was undertaken to determine where our current renewal intervention points lie to determine a useful life for the different asset types. Whether or not this intervention point agrees with the true economic life of the asset is something that will need further investigation.
- Condition modelling	Reliable	
- Network renewals	NA	Method 1 was adopted, no network renewals.
- Defect repairs	NA	Method 1 was adopted, no defect repairs.
Upgrade / new expenditures	NA	No upgrade / new expenditures were identified under this AM Plan.
Disposal expenditures	NA	There are no assets to be disposed of in this AM Plan.

Appendix E: Data Confidence Assessment for Data Used in AM Plan *continued*

Footpaths

Table 6.5.1 (Footpaths): Data Confidence Assessment for Data used in Asset Management Plan

Data	Confidence assessment	Comment
Demand drivers	Reliable	Demand drivers have been sourced from a number of Council strategic plans and policies including <i>Smart Move</i> , <i>Park Lands Management Strategy</i> , <i>Community Land Management Plans</i> , <i>Council Strategic Plan</i> , and State Government's <i>30-year Plan for Greater Adelaide</i> .
Growth projections	Reliable	Provided by Council's strategic plans and <i>30-year Plan for Greater Adelaide</i> .
Operations expenditures	Reliable	Obtained from financial systems and confirmed with cleansing department.
Maintenance expenditures	Uncertain	No ability to track maintenance expenditure at asset level as this is not currently recorded.
Projected renewal expenditures - Asset values	Reliable	Unit rates used for the valuations have been obtained from a register of Public Realm labour rates and cost of materials and plant.
- Asset residual values	NA	There are no asset residual values used in this AM Plan.
- Asset useful lives	Uncertain	Asset useful lives have been assumed for all footpath assets as installation dates for all footpath assets is unknown. Renewal habits over the past four years were reviewed to identify condition based intervention points for renewal however greater analysis is needed to validate alignment with actual useful lives.
- Condition modelling	Street footpaths – Unreliable Park Lands paths - Reliable	Condition assessments done on the street paths and Park Lands paths were done separately and to different standards. The street paths condition assessment was undertaken in 2012 and is already two years out of date. The condition assessment grossly under-evaluated the true condition of the network.
- Network renewals	NA	Method 1 was adopted, no network renewals.
- Defect repairs	NA	Method 1 was adopted, no defect repairs.
Upgrade / new expenditures	Reliable	The upgrade requirements identified are for DDA compliance of which there is a legislated deadline to have all bus stops reach DDA compliancy by 2021.
Disposal expenditures	NA	There are no assets to be disposed of in this AM Plan.

Appendix E: Data Confidence Assessment for Data Used in AM Plan *continued*

Kerb and Water Table

Table 6.5.1 (Kerb and Water Table): Data Confidence Assessment for Data used in Asset Management Plan

Data	Confidence assessment	Comment
Demand drivers	Reliable	Demand drivers have been sourced from a number of Council strategic plans and policies including <i>Smart Move</i> , <i>Park Lands Management Strategy</i> , <i>Community Land Management Plans</i> , <i>Council Strategic Plan</i> , and State Government's <i>30-year Plan for Greater Adelaide</i> .
Growth projections	Reliable	Provided by Council's strategic plans and <i>30-year Plan for Greater Adelaide</i> .
Operations expenditures	Reliable	Obtained from financial systems.
Maintenance expenditures	Reliable	Obtained from financial systems. The spread of budget from planned to unplanned has not been documented.
Projected renewal expenditures - Asset values	NA	There are no asset residual values used in this AM Plan.
- Asset residual values	Reliable	An analysis was undertaken to determine where our current renewal intervention points lie to determine a useful life for the different asset types. Whether or not this intervention point agrees with the true economic life of the asset is something that will need further investigation.
- Asset useful lives	Reliable	An analysis was undertaken to determine where our current renewal intervention points lie to determine a useful life for the different asset types. Whether or not this intervention point agrees with the true economic life of the asset is something that will need further investigation.
- Condition modelling	Uncertain	Based on most recent valuations (2014).
- Network renewals	NA	Method 1 was adopted, no network renewals.
- Defect repairs	NA	Method 1 was adopted, no defect repairs.
Upgrade / new expenditures	Reliable	The upgrade requirements identified are for DDA compliance of which there is a legislated deadline to have all bus stops reach DDA compliancy by 2021.
Disposal expenditures	NA	There are no assets to be disposed of in this AM Plan.
Disposal expenditures	NA	There are no assets to be disposed of in this AM Plan.

Appendix E: Data Confidence Assessment for Data Used in AM Plan *continued*

Bridges

Table 6.5.1 (Bridges): Data Confidence Assessment for Data used in Asset Management Plan

Data	Confidence assessment	Comment
Demand drivers	Reliable	Based on local corporate knowledge and State Government projections.
Growth projections	Reliable	Based on State Government projections.
Operations expenditures	Highly Reliable	Council records.
Maintenance expenditures	Highly Reliable	Council records.
Projected renewal expenditures - Asset values	Reliable	Based on 2015 valuation undertaken by GHD and RLB.
- Asset residual values	Highly Reliable	No residual value.
- Asset useful lives	Reliable	Updated, calculated as a function of condition and base life.
- Condition modelling	Reliable	Level 2 ARRB bridge inspections at component level.
- Network renewals	NA	Method 1 was adopted, no network renewals.
- Defect repairs	NA	Method 1 was adopted, no defect repairs.
Upgrade / new expenditures	Uncertain	Calculated using inflated unit rate of a previous similar project.
Disposal expenditures	Highly Reliable	No disposals.
Disposal expenditures	Highly reliable	No disposals.

Appendix E: Data Confidence Assessment for Data Used in AM Plan *continued*

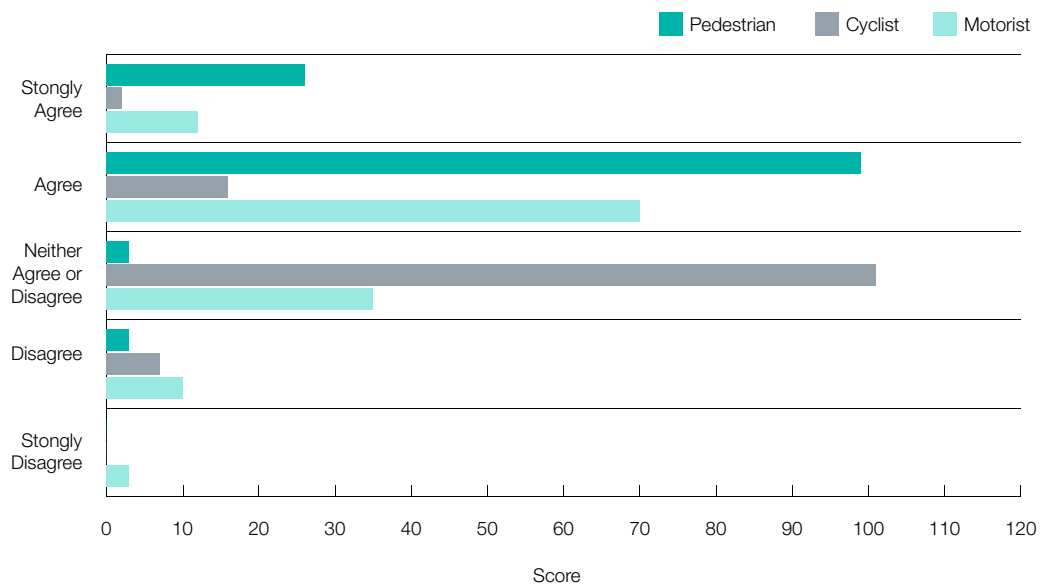
Traffic Signals

Table 6.5.1 (Traffic Signals): Data Confidence Assessment for Data used in Asset Management Plan

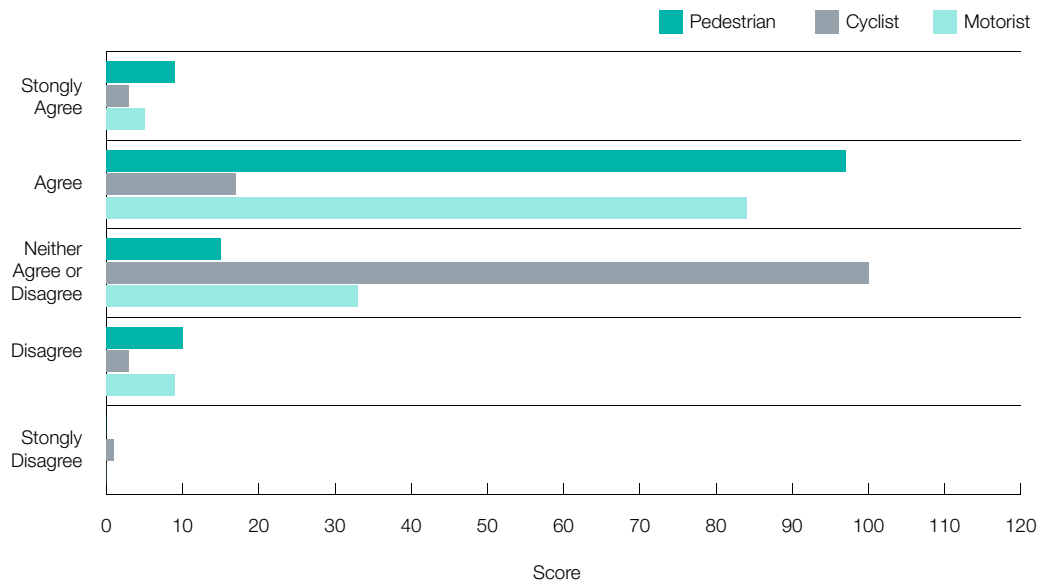
Data	Confidence assessment	Comment
Demand drivers	Reliable	Based on Local and State Government projects as well as local knowledge.
Growth projections	Reliable	Based on State Government projections.
Operations expenditures	Highly Reliable	Council records.
Maintenance expenditures	Highly Reliable	Council records.
Projected renewal expenditures - Asset values	Uncertain	Based on most recent valuations (2012) and have been inflated (3% p.a.) to reflect current day value.
- Asset residual values	Reliable	NA
- Asset useful lives	Reliable	Calculated as a function of condition and base life.
- Condition modelling	Reliable	All accessible assets and components rated by GHD in 2012.
- Network renewals	NA	Method 1 was adopted, no network renewals.
- Defect repairs	NA	Method 1 was adopted, no defect repairs.
Upgrade / new expenditures	Uncertain	Calculated using inflated unit rate of a previous similar project.
Disposal expenditures	Highly Reliable	NA

Appendix F: Findings of Formal Public Consultation

Is it easy to move around the city?

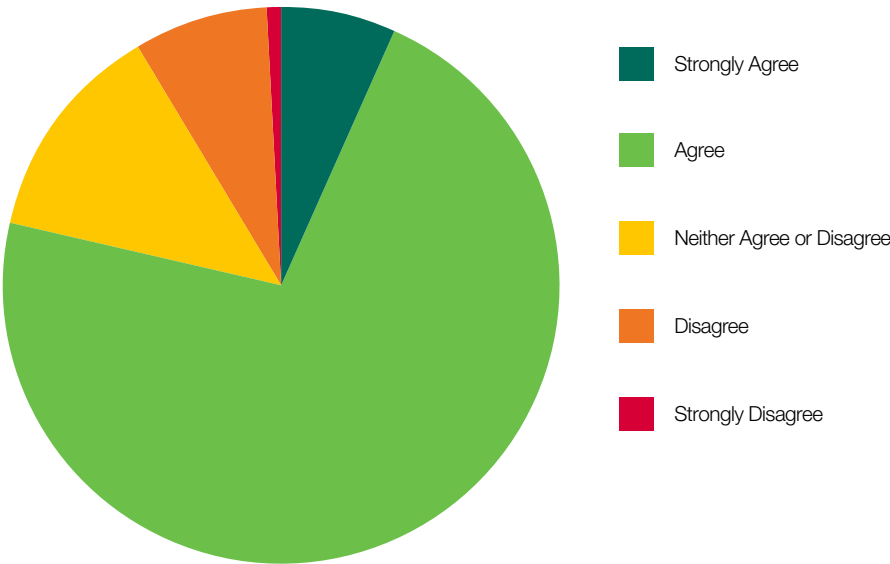


Are paths and roads well maintained?

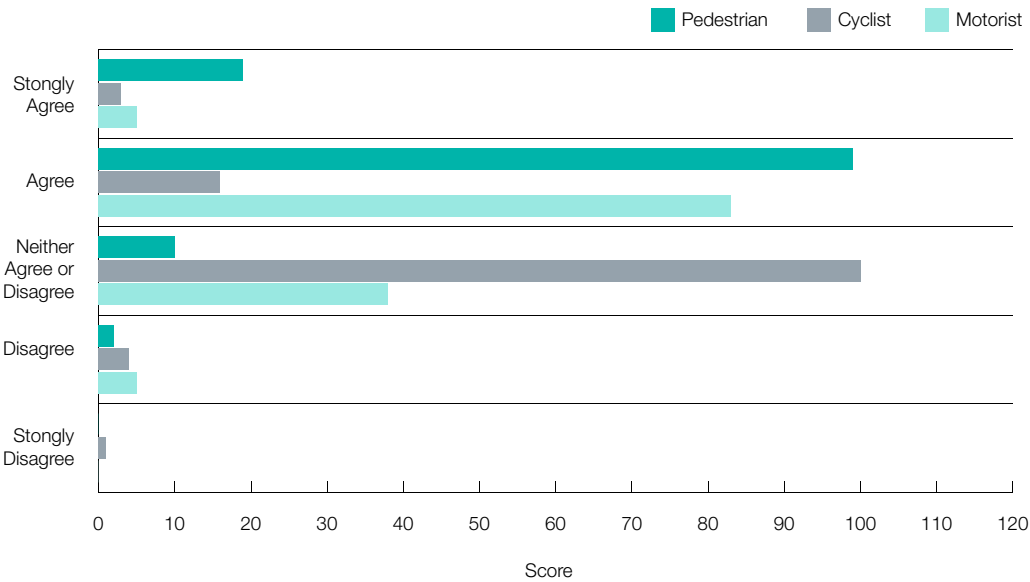


Appendix F: Findings of Formal Public Consultation *continued*

Are footpaths clean?

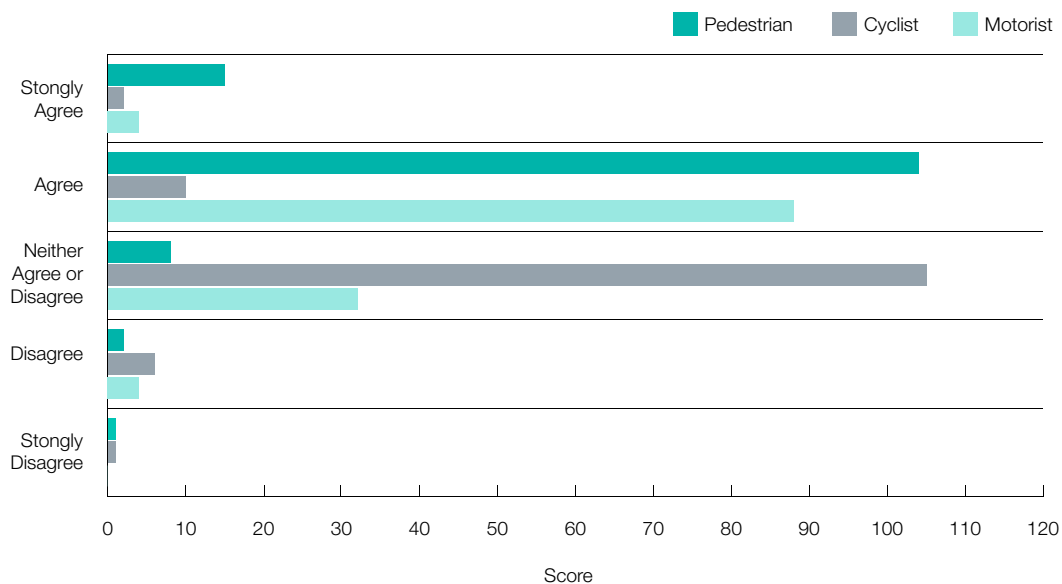


Are paths and roads accessible?

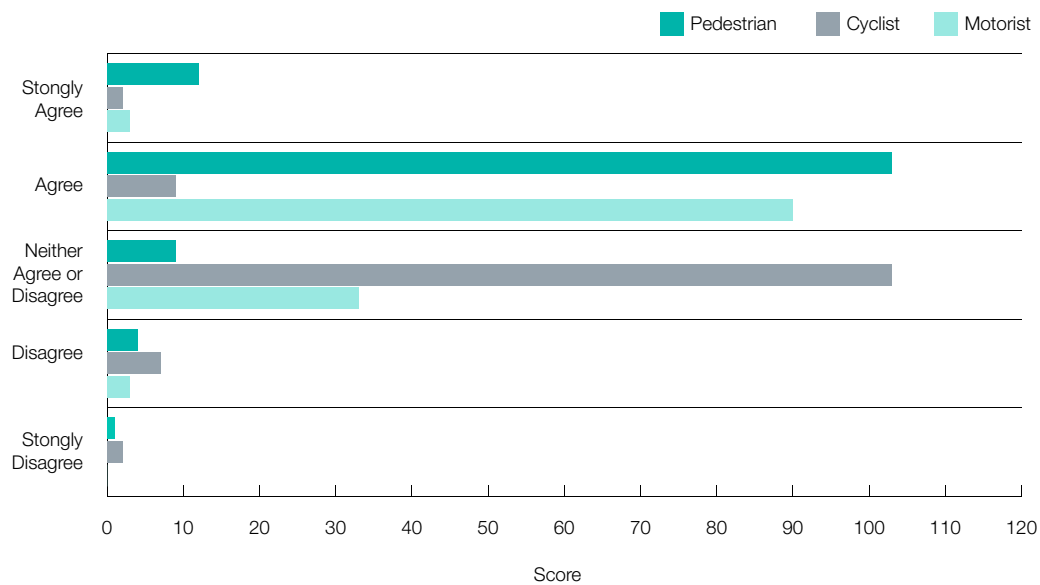


Appendix F: Findings of Formal Public Consultation *continued*

Do paths and roads meet your requirements?

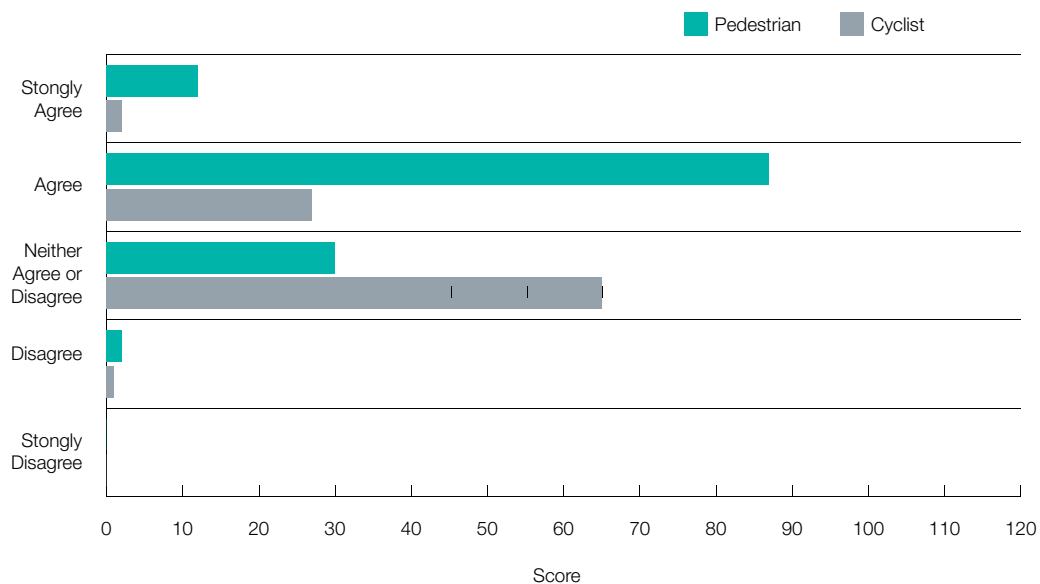


Are paths and roads safe?

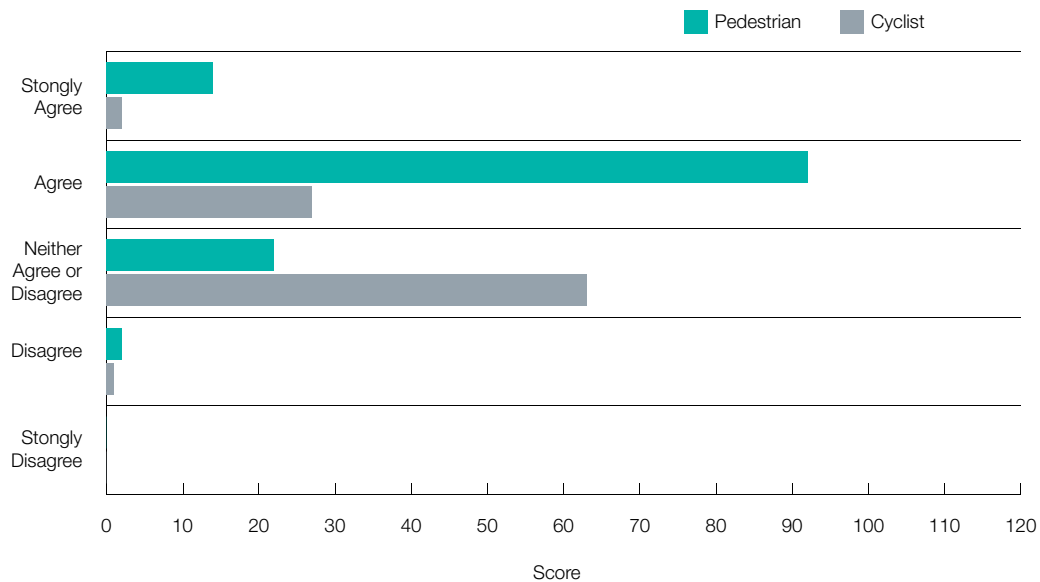


Appendix F: Findings of Formal Public Consultation *continued*

Are Park Lands paths well maintained?

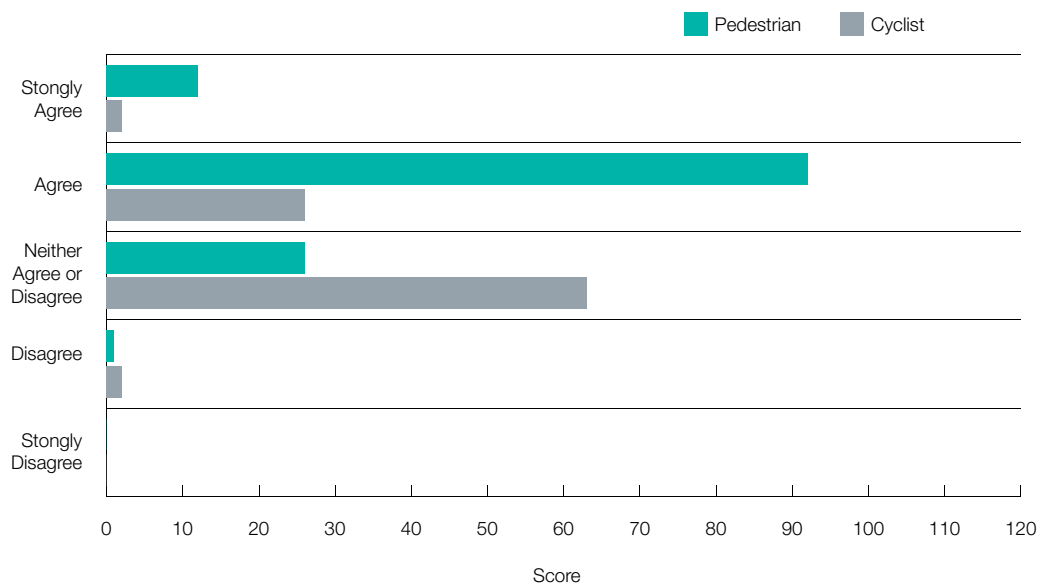


Are Park Lands paths accessible?

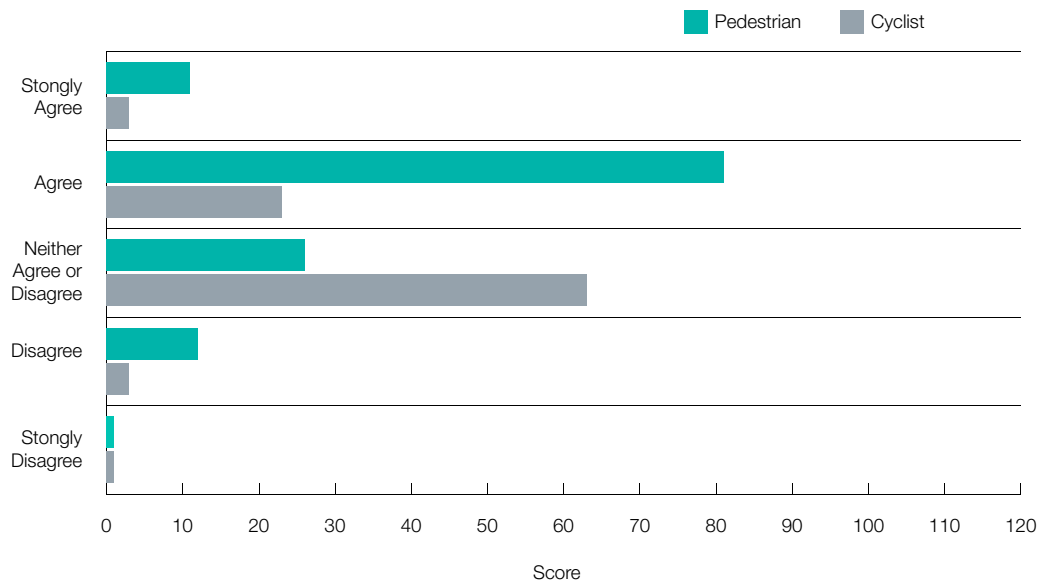


Appendix F: Findings of Formal Public Consultation *continued*

Do Park Lands paths meet your requirements?



Are Park Lands paths safe?



Appendix G: Abbreviations

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

Appendix H: Glossary

Annual service cost (ASC)

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

Asset

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

Asset category

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

Asset class

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

Asset condition assessment

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

Asset hierarchy

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

Asset management (AM)

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

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10-year period in a Long Term Financial Plan relative to the net present value of projected capital renewal expenditures identified in an Asset Management Plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

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

Borrowings

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

Capital expenditure

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

Capital expenditure - expansion

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

Capital expenditure - new

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

Capital expenditure - renewal

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

Capital expenditure - upgrade

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

Capital funding

Funding to pay for capital expenditure.

Capital grants

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

Capital investment expenditure

See 'capital expenditure' definition.

Capitalisation threshold

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

Carrying amount

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

Class of assets

See 'asset class' definition.

Component

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

Core asset management

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

Cost of an asset

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

Critical assets

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

Current replacement cost (CRC)

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

Deferred maintenance

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

Depreciable amount

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

Depreciated replacement cost (DRC)

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

Depreciation / amortisation

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

Economic life

See 'useful life' definition.

Expenditure

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

Expenses

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

Fair value

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

Financing gap

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

Heritage asset

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

Impairment loss

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

Infrastructure assets

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

Investment property

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

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

Key performance indicator

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

Level of service

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

Lifecycle cost (LCC) *

1. Total LCC

The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation, and disposal costs.

2. Average LCC

The LCC is average cost to provide the service over the longest asset lifecycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The LCC does not indicate the funds required to provide the service in a particular year.

Lifecycle expenditure

The lifecycle expenditure (LCE) is the average operations, maintenance, and capital renewal expenditure accommodated in the *Long Term Financial Plan* over 10 years. LCE may be compared to average lifecycle cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See 'borrowings'.

Maintenance

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

- **Planned maintenance**

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

- **Reactive maintenance**

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

- **Specific maintenance**

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

- **Unplanned maintenance**

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

Maintenance expenditure *

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

Materiality

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

Modern equivalent asset

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

Net present value (NPV)

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

Non-revenue generating investments

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

Operations

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

Operating expenditure

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

Operating expense

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

Operating expenses

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

Operations, maintenance, and renewal financing ratio

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

Operations, maintenance, and renewal gap

Difference between budgeted expenditures in a Long Term Financial Plan (or estimated future budgets in absence of a Long Term Financial Plan) and projected expenditures for operations, maintenance, and renewal of assets to achieve / maintain specified service levels, totalled over a defined time (e.g. five, 10, and 15 years).

Pavement management system (PMS)

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

PMS score

A measure of condition of a road segment determined from a pavement management system.

Rate of annual asset consumption *

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

Rate of annual asset renewal *

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

Rate of annual asset upgrade / new *

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

Recoverable amount

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

Recurrent expenditure

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

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See 'capital renewal expenditure' definition above.

Remaining useful life

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

Renewal

See 'capital renewal expenditure' definition above.

Residual value

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

Revenue generating investments

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

Risk management

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

Section or segment

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

Service potential

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

Service potential remaining

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

Specific maintenance

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

Strategic Longer-Term Plan

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

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

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

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

Value in use

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

Source: IPWEA, 2009, AIFMG Glossary

Additional and modified glossary items shown *

