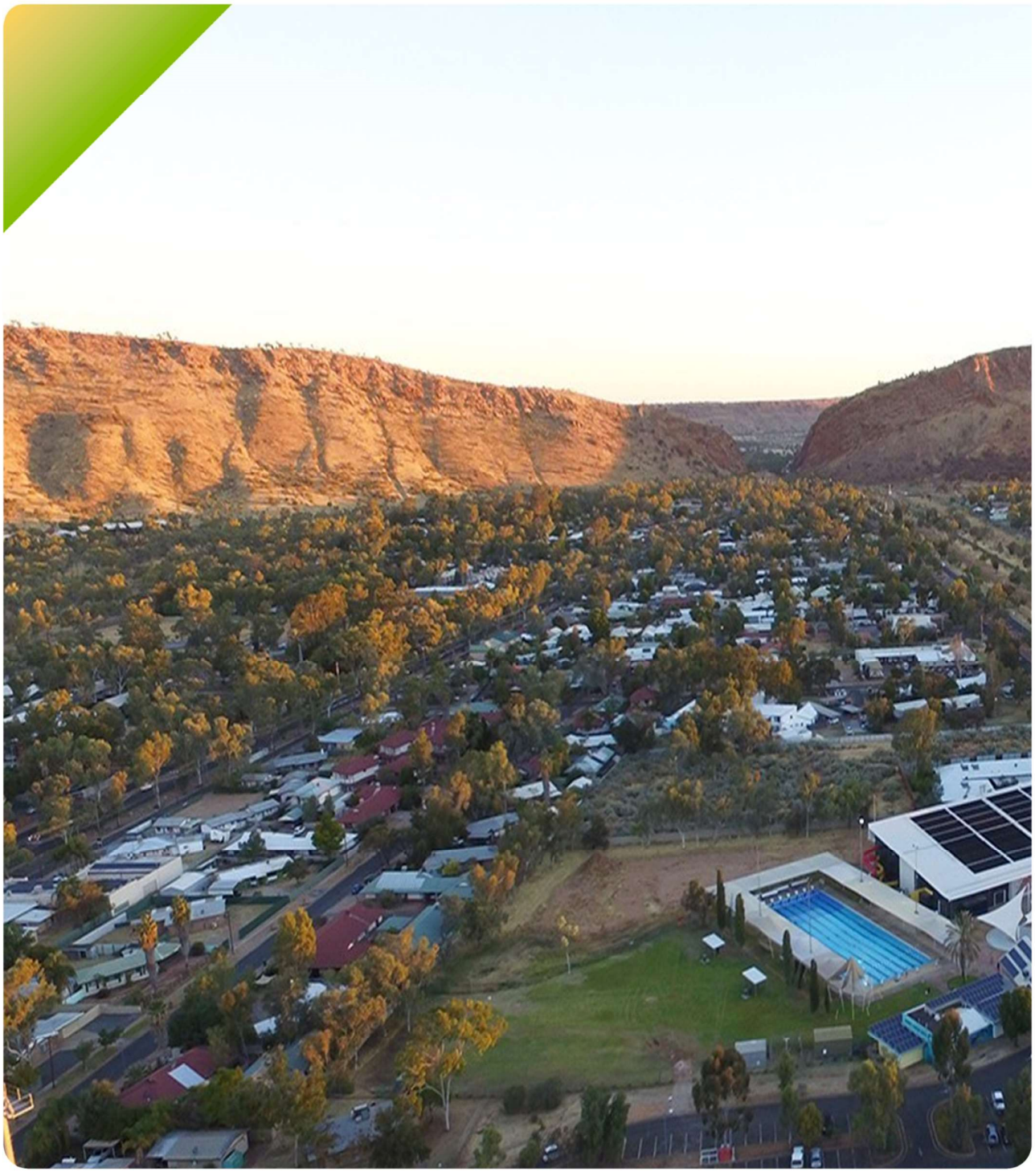

Asset Management Plan

Infrastructure Asset Management Plan

Alice Springs Town Council

Reference: 511230

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Document control record

Document prepared by:

Aurecon Australasia Pty Ltd
ABN 54 005 139 873
Level 5, 116 Military Road
Neutral Bay NSW 2089
PO Box 538
Neutral Bay NSW 2089
Australia

T +61 2 9465 5599
F +61 2 9465 5598
E sydney@aurecongroup.com
W aurecongroup.com

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Author signature		Approver signature	
Name	Hal Belmonte	Name	Matt Aberline
Title	Associate, Asset Management	Title	Principle, Asset Management

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Executive Summary

This Asset Management Plan (AMP) examines the management of the Alice Springs Town Council (ASTC) infrastructure assets, such as roads, stormwater, landfill, community facilities, sports facilities and operational buildings. The plan considers the full lifecycle of the assets and that the planned management of the assets align to the strategic asset management objectives of ASTC. The plan considers the levels of service required from the assets, their operational and maintenance requirements, associated risks and mitigation techniques, costs and asset management practises that impact the organisation.

Levels of Service

Limited data was available on customer expectations in terms of desired levels of service and prioritisation of those services. This information needs to be further researched for future updates of the AMP. It is recommended that for each sector definition of levels of service are developed. These levels of service should then be socialised with the community in stakeholder engagements along with the associated budget implications that will be required to sustain the levels of service. Then to work with the community to establish the community's priorities for each of level of service and the desired level of service, that can be provided by the ASTC in a sustainable manner.

Future Demand

It is understood that the population of Alice Springs is not expected to grow and thus the support base to fund the increased levels of asset service are not likely to increase, potentially limiting the extent to which higher levels of service could be sustained. It is recommended that a more detailed study is undertaken to understand the expected demographic changes over the next twenty years that Alice Springs can expect. This study should also provide insight into the expected funding support levels that the ASTC should be able to expect from the community and should inform discussions with the community around the Services delivered by the council, the desired level of service and the potential trade-offs that can be made given a finite budget.

Lifecycle Management

Asset Value

The ASTC's 2019/2020 asset register represents the most comprehensive data currently available on the ASTC infrastructure portfolio, and it was used as the basis for developing the Revised Asset Register for ASTC's infrastructure assets (detailed in Appendix 1). The Revised Asset Register was used to conduct the asset lifecycle analyses in this Asset Management Plan.

From the Revised Asset Register for ASTC's infrastructure assets, the replacement value of the infrastructure has been determined by considering the Current Replacement Cost (CRC) with modern infrastructure of equivalent functionality. Replacement value has been calculated based on adjustment for inflation to a dollar value in 2021 terms. The current value has also been determined on a Depreciated Replacement Cost (DRC) basis. Presented in Table 0-1 is the replacement value, associated current value and annual depreciation of the ASTC's infrastructure portfolio by sector.

Table 0-1 Current and Replacement Value of ASTC Infrastructure Portfolio at Sector Level

Sector	Replacement Costs (CRC)	Current Value (DRC)	DRC as % of CRC	Annual Depreciation
Roads	$247,126,639	$207,421,397	83.9%	$4,464,337
Stormwater	$45,821,162	$35,015,693	76.4%	$575,875
Landfill	$18,940,650	$12,894,376	68.1%	$835,925
Community Facilities	$44,790,772	$25,324,797	56.5%	$2,430,958
Sports Facilities	$69,882,819	$46,917,713	67.1%	$2,316,162
Operational Building	$11,619,897	$8,750,956	75.3%	$355,757
Solar	$1,104,373	$883,498	80.0%	$55,219
Grand Total	**$439,286,313**	**$337,208,431**	**76.8%**	**$11,034,233**

Table 0-1 shows the total replacement value of the ASTC infrastructure assets, which have a replacement value of around $ 439.3 million, and a current value of $ 337.2 million, as at 30 June 2020. The average percentage of current value divided by the replacement value for all asset groups is about 76.8%, which indicates that on average the infrastructure portfolio has just over three quarters of remaining useful life left, suggesting that the overall infrastructure portfolio of the ASTC to be in good health. The annual depreciation shows that about $ 11.0 million (or 2.5%) of total asset portfolio value is consumed by depreciation each year.

Operation and Maintenance

The operations and maintenance (O&M) expenditure required for the infrastructure assets was determined from the data available within the Revised Asset Register for ASTC's infrastructure assets. Using industry benchmarks, best practice and typical percentages of O&M costs based on the asset's replacement value (CRC) for the different Asset Sub-classes, sourced where feasible from similar regional council organisations, to provide the relevant and reliable estimates. The resultant O&M expenditure derived was then checked against the available data on historic O&M costs and validated with key ASTC stakeholders. The resultant annual O&M expenditure developed by sector is presented in Table 0-2 and Figure 0-1.

Table 0-2 Annual Operational & Maintenance Expenditure

Sector	Replacement Costs (CRC)	O&M Expenditure	% of CRC	% of Total
Roads	$247,126,639	$4,242,870	1.7%	32.2%
Stormwater	$45,821,162	$692,883	1.5%	5.3%
Landfill	$18,940,650	$1,667,588	8.8%	12.7%
Community Facilities	$69,882,819	$2,143,433	3.1%	16.3%
Sports Facilities	$44,790,772	$3,843,849	8.6%	29.2%
Operational Building	$11,619,897	$548,360	4.7%	4.2%
Solar	$1,104,373	$34,342	3.1%	0.3%
Grand Total	**$439,286,313**	**$13,173,324**	**3.0%**	

From Table 0-2 it can be seen that the ASTC will require $13,173,324 per annum to operate and maintain the 3609 infrastructure assets in their asset portfolio. This represents 3% of the replacement costs of the infrastructure asset portfolio of the ASTC.

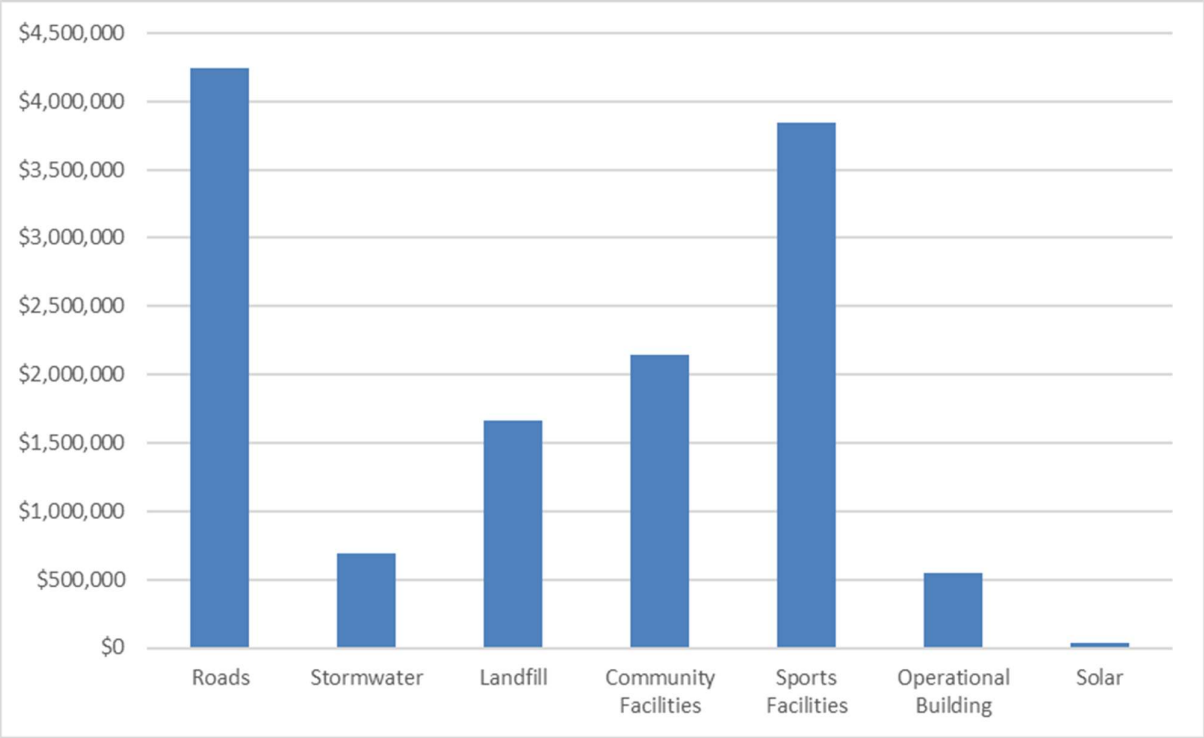

Figure 0-1 Annual Operational & Maintenance Expenditure by Sector

Financial Summary

Expected Infrastructure Funding Requirements Forecast

The expected funding required for the ASTC's infrastructure assets over the next ten years is presented in Table 0-3. From Table 0-3 it can be seen that the O&M funding requirements calculated for the current asset base amounts to $13,173,324 per annum.

Table 0-3 Expected Infrastructure Funding Forecast over next 10 financial years

Financial Year	Renewal	Additions	Disposal	O&M	Total
2021/22	$8,072,985	$0	$0	$13,173,324	$21,246,309
2022/23	$4,332,135	$0	$0	$13,173,324	$17,505,459
2023/24	$3,027,301	$0	$0	$13,173,324	$16,200,625
2024/25	$2,089,668	$0	$0	$13,173,324	$15,262,992
2025/26	$5,597,751	$0	$0	$13,173,324	$18,771,075
2026/27	$4,886,003	$13,750,000	$0	$13,173,324	$31,809,327
2027/28	$3,295,442	$0	$8,250,000	$13,173,324	$24,718,766
2028/29	$4,116,551	$0	$0	$13,173,324	$17,289,875
2029/30	$4,102,124	$0	$0	$13,173,324	$17,275,448
2030/31	$4,368,696	$0	$0	$13,173,324	$17,542,020

The expected capital funding requirements (i.e. funding to address asset renewals, and confirmed asset additions and disposals required) over the next 25-year period by sector is presented in Figure 0-2.

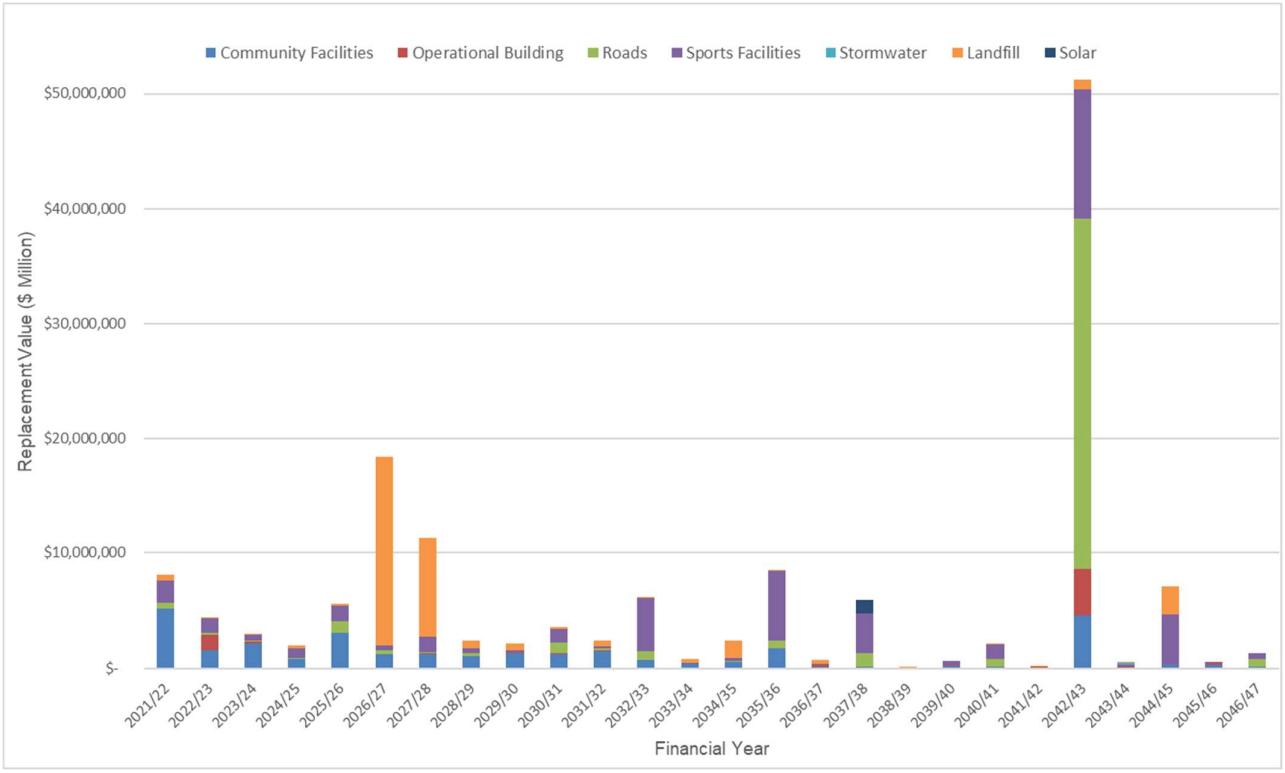

Figure 0-2 Expected Capital Infrastructure Funding Forecast for next 25 years by Sector

The asset criticality represents the potential impact to the organisation should an asset or system fail, which considers the effect of the failure on health & safety, cost, reputation, service delivery and environmental damage. This allows the asset criticality rating to provide an indicative mechanism to identify the potential for deferral of asset capital expenditure in an environment of constrained funding. Presented in Figure 0-3 is the expected capital infrastructure funding required by asset criticality.

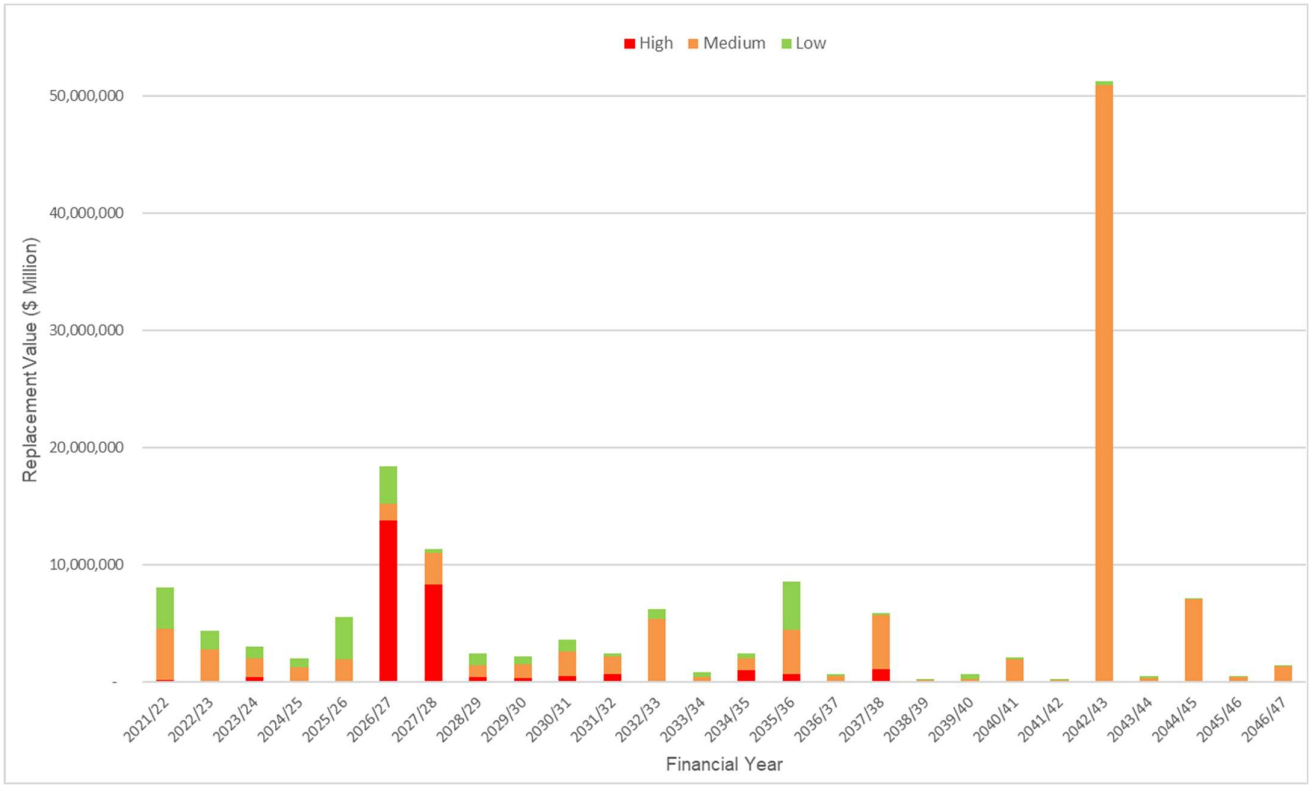

Figure 0-3 Expected Capital Infrastructure Funding Forecast for next 25 years by Criticality

From Figure 0-3 the indicative level of annual investment required over the next 25-year period to **only** fund the infrastructure asset capital requirements for:

- The high criticality assets, is around $ 1.1 million per annum;
- The high and medium criticality assets, is around $ 4.0 million per annum; and
- All the assets (high, medium, and low criticality assets), is around $ 6.1 million per annum.

Funding Strategy

Funding for assets is provided from the budget and access to grant funding and the ASTC intends to utilise their reserve fund, available state grants along with council rates to fund their infrastructure budgets required to provide the services required by the community. It is recommended that the ASTC develop a strategy to address any funding gaps between their current funding and the expected budget requirements for the infrastructure assets.

Asset Management Practices

Presented in Table 0-4 is the summary of ASTC's maturity per Subject Group, which provides an overall rating of 2.05 for the ASTC, which indicates a maturity between **Developing** and **Competent**.

Table 0-4 ASTC Average Rating per Subject Group

Subject Group	Average of Rating
1. AM Strategy & planning	1.8
2. AM Decision-making	1.6
3. Lifecycle Delivery Activities	2.36
4. Asset Knowledge Enablers	1.25
5. Organisation & People Enablers	2.8
6. Risk, Review & Continual Improvement	2.0

Recommendations

The key recommendations and follow-up actions required to give effect to the infrastructure Asset Management Plan are:

- The asset information available on the infrastructure portfolio is not at a level where it can support the decision making required, it is recommended that the infrastructure Asset Register is redeveloped by:
  - Developing a fit-for-purpose asset classification hierarchy.
  - Reviewing and amending the asset attributes to be captured for each asset within the Asset Register to ensure that the required asset information to support decision-making is available. This would include defining gradation scales for condition, utilisation, criticality, and operating environment.
  - Re-compilation of the asset register ideally based on a full physical verification of the asset base, to inspect and capture all the asset information required (i.e. asset attributes for assets as per the asset hierarchy classification).
  - Review the key accountabilities and governance structures for the asset management policy, processes and procedures to ensure that the asset information is utilised and regularly updated and maintained.
- A risk management framework has been developed by the ASTC but it has not been implemented, it is recommended that:
  - The asset criticality of the infrastructure portfolio is assessed using the criticality framework developed.
  - Risk registers are compiled and maintained for both asset and non-asset risks for the infrastructure assets.
  - Develop resilience measures based on asset monitoring and review procedures.
- Further develop and improve the Asset Management guidance and governance by:
  - Developing the Asset Management Framework with a dedicated Asset Management Policy and Strategic Asset Management Plan.
  - Formalise the approach to capital investment decision-making through the development of procedures to guide these decisions and capture in future asset management plans.
  - Enhance the key performance index framework deployed at ASTC to include appropriate asset management indicators to drive good behaviours across the organisation.

1 Introduction

1.1 Background

This Asset Management Plan (AMP) examines the management of the Alice Springs Town Council (ASTC) assets including roads, stormwater, landfill, community facilities, sports facilities and operational buildings throughout its full lifecycle and that planned management of the assets align to the strategic asset management objectives. It considers the levels of service required by the assets, their operational and maintenance requirements, associated risks and mitigation techniques, costs and asset management practises that impact the organisation.

1.2 Organisational Context

As a Town Council in the Northern Territory State of the Commonwealth of Australia, the ASTC has legislative requirements it must follow relating to the management of its infrastructure assets. Presented in Table is a summary of the Legislative Requirements that the ASTC operates under.

Table 1-1 ASTC Legislative Requirements

Legislation	Requirement
Aboriginal Land Act	Outlines issues local governments need to consider where its assets may be impacted by Aboriginal Land.
NT Aboriginal Sacred Sites Act	An Act to effect a practical balance between the recognised need to preserve and enhance Aboriginal cultural tradition in relation to certain land in the Territory and the aspirations of the Aboriginal and all other peoples of the Territory for their economic, cultural and social advancement, by establishing a procedure for the protection and registration of sacred sites, providing for entry onto sacred sites and the conditions to which such entry is subject, establishing a procedure for the avoidance of sacred sites in the development and use of land and establishing an Authority (AAPA) for the purpose of the Act.
Australian Standards	Provides guidance for transport asset managers in use of transport services such as AS 1742; Manual of Uniform Traffic Control Devices
Environmental Assessment Act	Outlines legislative issues local governments need to consider in relation to the assessment of the environmental effects of development proposals and for the protection of the environment
Environmental Offences and Penalties Act 1996	Outlines offences local governments (and other parties) may be liable for where their acts and omissions maybe detrimental to the protection of the environment.
Essential Goods and Services Act	Outlines legislative issues local governments need to consider in relation to the impacts that the management and control of shortages of prescribed goods or services may have on local government assets e.g. water shortages; delivery of goods and services over council controlled roads when trafficking is not appropriate due to saturation of pavements.

Legislation	Requirement
Building Code of Australia/National Construction Code	All Building and associated infrastructure comply with the latest BCA or NCA as may be applicable from time to time
AS 3745 - Planning for emergencies in facilities	The objective of this Standard is to enhance the safety of people in facilities, by providing a framework for emergency planning, utilizing the built facilities as appropriate. The objective of this revision is to make a greater distinction between emergency plans and emergency/evacuation procedures. It also includes expanded and revised sections on: (a) developing the emergency plan; (b) the duties of the emergency planning committee (EPC) and emergency control organization (ECO); (c) provisions for occupants with a disability; (d) education and training; and (e) (e) guidance on how to determine the size of the emergency control organization
Fire and Emergency Act	Outlines legislative issues local governments need to consider in relation to the prevention of fires and other emergencies as an owner and occupier of land
Land Title Act & Regulations	Outlines legislative issues local governments need to consider in relation to land ownership, easements and other purposes that may impact on various assets, such as roads, stormwater and buildings that the local government has under it care and control.
Lands Acquisition Act & Regulations	Outlines legislative issues local governments need to consider in relation to land they own that could be compulsorily acquired by the Northern Territory for the purpose of the provision of essential services and facilities being power (including gas), water, sewerage, road or communication services or facilities to or across the prescribed land, or access to any of them.
NT Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a Long-Term Financial Plan (as per the Municipal Plan) supported by asset management plans for sustainable service delivery.
Local Government Grants Commission Act	Sets out the role, purpose, responsibilities and powers of a Local Government Grants Commission to make recommendations concerning the distribution of financial assistance to local government bodies and for related purposes
Occupation Safety and Health Act	Sets out the rules and responsibilities to secure the health, safety and welfare of persons at work
Planning Act & Regulations	Outlines legislative issues local governments need to consider in relation to providing for appropriate and orderly planning and control of the use and development of land within the municipality

Legislation	Requirement
Power and Water Corporation Act	Outlines legislative issues local governments need to consider in relation to Power and Water Corporation whose power, water and sewerage infrastructure may impact on the local governments' assets such as the road network, parks and reserves and other land.
Road Transport Reform (Vehicles and Traffic) Act	Sets out the role, responsibilities and powers of a local government in relation to the regulation of traffic on council-controlled roads
Roads to Recovery Program	Provides for access to Commonwealth funding for roads expenditure by local governments
Water Act & Regulations	Outlines legislative issues local governments need to consider in relation to the use of water for its assets e.g. parks, gardens, buildings and other public facilities.

1.3 Organisational Goals and Objectives

This asset management plan is prepared under the direction of the Alice Springs Town Council's vision, mission, goals and objectives.

The ASTC vision is:

"A vibrant and thriving community that embraces our culture, diversity and environment."

ASTC mission statement is:

"Through leadership and innovation, we provide local government services and we enable and advocate for our community."

ASTC strategic objectives as set out in the Strategic Plan are:

1. *Create a Dynamic Community: To create a dynamic, prosperous community where everyone is included, underpinned by safe, reliable infrastructure and social investment.*
2. *Provide a Great Place to Live: To provide a great place to live that attracts and retains residents because of the unmatched leisure and healthy living opportunities and embrace of our unique landscape and culture.*
3. *Provide Leadership in Sustainability: To be a leader in sustainability and best practice, living well in our desert context and minimising our impact.*
4. *Dynamic Council: A well governed Council that leads by example, advocates for our community, innovates and delivers excellent services, and works with others collaboratively to help create the community we want to live in.*

Relevant goals and objectives and how these are addressed in this asset management plan are as shown in Table 1-2.

Table 1-2 ASTC Goals and Objectives

Strategic Goal Number	Strategic Goal	Outcome	How Goal and Objectives are addressed in AMP
1	A Dynamic Community	Safe and reliable public infrastructure	Programmed renewal and upgrade of Transport Infrastructure
1	A Dynamic Community	Inclusiveness and support	Advocate Northern Territory Government and Commonwealth partnerships with council, to establish suitable, contemporary community facilities.
2	A Great Place to Live	Community life, promoting a healthy, vibrant culture	Road infrastructure reconstruction project where paths are at back of kerb; and for strategic redevelopment of precincts Programmed renewal and upgrade of Building and Land improvements Assets
2	A Great Place to Live	Sense of place and public amenity	Maintain and improve built and social infrastructure in open spaces, by adopting placemaking strategies
3	Leadership in Sustainability	Reduce Alice Springs' carbon footprint	Advocating for greater Council role in planning and development. Ensuring the lighting for streets, footpaths and public places using sustainable technologies.

ASTC 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 asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management, improvements on assets and future investments.
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan (as per the Municipal Plan) which identifies required, affordable expenditure and how it will be allocated.

1.4 Scope of Asset Management Plan

This AMP examines the management of the ASTC infrastructure assets including roads, stormwater, landfill, community facilities, sports facilities and operational buildings throughout its full lifecycle and that planned management of the assets align to the strategic asset management objectives. It considers levels of service of the assets, their operational and maintenance requirements, associated risks and mitigation techniques, costs and best practises that impact the organisation.

The asset management principles, fundamentals and objectives in this asset management plan are based on and aligned with:

- International Infrastructure Management Manual 2015
- ISO 550001

Good asset information is critical to ensuring sound asset management decision making, and the infrastructure asset register thus forms the foundation for asset management planning. The ASTC is embarking on a journey to improve its asset management practices and it is understood that the current asset register is outdated and has issues with its structure and completeness. As the available asset information has limitations means that this asset management plan will thus reflect the organisations current maturity.

This document has been developed using the full asset management plan structure, to outline what the ASTC should aspire to, but to also guide and inform the areas where further development will be required. Practically this means that this document should be read as an asset management improvement plan in the structure of an asset management plan.

2 Level of Service

2.1 Customer Research and Expectations

Limited data was available on customer expectations in term of desired levels of service and prioritisation for the infrastructure assets. This information needs to be further researched for future updates of the AMP. It is recommended that stakeholder engagement sessions are conducted to develop an understanding of the customer expectations, regarding the levels of services delivery and prioritisation, for ASTC's infrastructure assets. This would also assist in understanding changes to future demand and drawing up list of prioritisation works required.

2.2 Levels of Service

Service levels are defined service levels in two terms, customer levels of service and technical levels of service. These are supplemented by organisational measures.

Customer Levels of Service measure how the customer receives the service and whether value has been provided to the customer. Customer levels of service measures used in the asset management plan are:

Quality - How good is the service ... what is the condition or quality of the service?

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

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

The current and expected customer service levels are detailed for each asset type are presented in Table 2-1 to Table 2-8. These tables provide the expected levels of service based on resource levels in the current Long-Term Financial Plan (as per the Municipal Plan).

Organisational measures are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very good.

These Organisational measures provide a balance in comparison to the customer perception that may be more subjective.

Table 2-1 Customer Level of Service for Sealed Roads

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget.
Service Objective: To provide well maintained transport infrastructure to the community of Alice Springs				
Quality	Sealed roads provide safe and smooth travel	Service requests relating to ride quality	Acceptable	Unacceptable
		Organisational measure. % of sealed roads in very good/good and poor/very poor condition and confidence level	95% Very good 5% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		High	Medium
Function	Sealed roads meet transport program needs	Service requests relating to usage and availability	Acceptable	Unacceptable

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget.
		Organisational measure. % of sealed roads in very good/good and poor/very poor condition and confidence level	95% Very good 5% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low
Capacity and Use	Sealed roads are appropriate for usage	Service requests relating to congestion or underuse	Acceptable	Unacceptable
		Organisational measure. % of sealed roads in very good/good and poor/very poor condition and confidence level	95% Very good 5% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low

Table 2-2 Customer Levels of Service for Unsealed Roads

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget.
Service Objective: To provide well maintained transport infrastructure to the community of Alice Springs				
Quality	Unseated roads provide safe and smooth travel	Service requests relating to ride quality	Acceptable	Unacceptable
		Organisational measure. % of unsealed roads in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		High	Medium
Function	Unseated roads meet transport program needs	Service requests relating to usage and availability	Acceptable	Unacceptable

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget.
		Organisational measure. % of unsealed roads in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence	levels		Medium
Capacity and Use	Unsealed roads meet transport needs	Service requests relating to congestion or underuse	Acceptable	Unacceptable
		Organisational measure. % of unsealed roads in very good/good and poor/very poor condition and confidence level	90 Very good 10% Good and Poor	75% fiery good 10% Good and Poor 15% Very Poor
	Confidence Levels		Medium	

Table 2-3 Customer Levels of Service for Stormwater Drainage

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Service Objective: To provide well maintained transport infrastructure to the community of Alice Springs				
Quality	Drainage systems meet users' needs	Service requests relating to blocked drains	Acceptable	Unacceptable
		Organisational measure. % of stormwater in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	85% Very good 10% Good and Poor 5% Very Poor
	Confidence levels		Medium	Low
Function	Drainage areas are appropriately serviced	Service requests relating to flooding of property	Acceptable	Unacceptable

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
		Organisational measure. % of stormwater in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	85% Very good 10% Good and Poor 5% Very Poor
	Confidence levels		Medium	Low
Capacity and Use	Drainage areas capacity is appropriate	Service requests relating to flooding of property	Acceptable	Unacceptable
		Organisational measure. % of stormwater in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	85% Very good 10% Good and Poor 5% Very Poor
	Confidence levels		High	High

Table 2-4 Customer Levels of Service for Verges

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Service Objective: To provide well maintained transport infrastructure to the community of Alice Springs				
Quality	Verges maintained to a safe/neat standard	Service requests relating to unsafe/untidy verges	Acceptable	Unacceptable
		Organisational measure. % of stormwater in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		High	Medium
Function	Verges maintained to an acceptable standard	Service requests relating to usage and availability	Acceptable	Unacceptable

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
		Organisational measure. % of verges in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low
Capacity and Use	Verges are safe for use	Service requests relating to congestion or underuse	Acceptable	Unacceptable
		Organisational measure. % of verges in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low

Table 2-5 Customer Levels of Service for Footpaths/bicycle paths

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Service Objective: To provide well maintained transport infrastructure to the community of Alice Springs				
Quality	Footpaths/bicycle paths provide safe and smooth travel	Service requests relating to ride quality	Acceptable	Unacceptable
		Organisational measure. % of footpaths/bicycle paths in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		High	Medium
Function	Footpaths/bicycle paths meet transport program needs	Service requests relating to usage and availability	Acceptable	Unacceptable

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
		Organisational measure. % of footpaths/bicycle paths in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low
Capacity and Use	Footpaths/bicycle paths meet transport needs	Service requests relating to congestion or underuse	Acceptable	Unacceptable
		Organisational measure. % of footpaths/bicycle paths in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low

Table 2-6 Customer Levels of Service for Bridges

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Service Objective: To provide well maintained transport infrastructure to the community of Alice Springs				
Quality	Bridges provide safe and smooth travel	Service requests relating to ride quality	Acceptable	Unacceptable
		Organisational measure. % of bridges in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		High	Medium
Function	Bridges meet transport program needs	Service requests relating to usage and availability	Acceptable	Unacceptable

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
		Organisational measure. % of bridges in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low
Capacity and Use	Bridges meet transport needs	Service requests relating to congestion or underuse	Acceptable	Unacceptable
		Organisational measure. % of bridges in very good/good and poor/very poor condition and confidence level	90% Very good 10% Good and Poor	75% Very good 10% Good and Poor 15% Very Poor
	Confidence levels		Medium	Low

Table 2-7 Customer Levels of Service for Buildings

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Service Objective: To provide well maintained buildings to the community of Alice Springs				
Quality	Provide quality building facilities. Buildings and fixtures that are in good condition & fit for purpose	Internal assessment annually	Underperforming due to lack of funds	No change
	Confidence levels		High	Medium
Function	Provide building facilities that meet user requirements	Customer's feedback in relating to functionality	Underperforming due to lack of funds.	No change
	Confidence levels		Medium	Low
Safety	Provide safe suitable building facilities. Buildings and fixtures that are compliant with legislation	Customer feedback	Underperforming due to lack of funds	No change
	Confidence levels			

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Capacity	Provide public toilets at regular intervals across the CBD and Park Lands	Internal inspection and assessments	Undersupply of public toilets across town	Undersupply of public toilets
	Confidence levels			

Table 2-8 Customer Levels of Service for Land Improvement

Service Attributes	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget
Service Objective: To provide well maintained sporting ovals and parks to the community of Alice Springs				
Quality	Quality Standard of service provided to the community	Customer service	60% of the public expectation	30% of the public expectation
Function	Parks and Gardens are fit for purpose	Customer satisfaction	Not yet agreed	Not recorded
Safety	Facilities are safe and free from hazards	Regular inspection Compliance with standards	Some procedural processes not complied with	Conformance with all procedures
Capacity and Use	Provide recreation facilities in an efficient manner - in accordance with desired standards of service	Customer satisfaction	Capacity / utilisation is not currently measured	Not recorded
	Confidence levels		Medium	Low

2.3 Technical Levels of Service

Technical Levels of Service - Supporting the customer service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities to best achieve the desired customer outcomes and demonstrate effective performance.

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

- Operations - the regular activities to provide services (e.g. opening hours, cleaning, verge, park & oval maintenance, energy, inspections, etc.).
- Maintenance - the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, repair of ovals lights, maintenance of oval, building and structure repairs),
- Renewal - the activities that return the service capability of an asset up to that which it had originally (e.g. road resurfacing and pavement reconstruction, pipeline replacement, playground resurfacing and building component replacement),

- Upgrade/New - 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, replacing the light towers, replacing the toilet block, building new grandstands) or a new service that did not exist previously.

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

Tables below shows the technical levels of service expected to be provided under this AMP. The 'Desired' position in the table documents the position being recommended in this AMP.

Table 2-9 Technical Levels of Service for Unsealed Roads

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Roads are safe for users needs	Regular condition and defect surveys	3 years condition and defect inspection	Annual condition and defect inspection of 50% of network
	Streets are clean	Street sweeping frequency	CBD areas – Daily Other areas - Monthly	CBD areas – Daily Other areas – Fortnightly
Maintenance	Maintain road assets to achieve long life	Reactive service request completed within adopted time frames	Week	Day
		Cost effectiveness	70%	85%
Renewal	Infrastructure meets users needs	Percentage of surfaces and pavements renewed/replaced in year	Surfaces 5% Pavements 5%	Surfaces 15% Pavements 15%
		% sealed roads in poor/very poor condition	90% poor 10% very poor	95% poor 5% very poor
Upgrade/New	Road capacity matches usage	Road capacity compared to traffic volumes	90% of sealed roads meet capacity standards	100% of sealed roads meet capacity standards
	All upgrades/new as per Appendix 2 (Projected Upgrade/Exp/New 10-year Capital Works Program)	Requests	Average	Average

Table 2-10 Technical Levels of Service for Stormwater Drainage

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Drainage system meets users' needs	Regular condition and defect surveys	2 yearly condition and defect inspections	Annual condition and defect inspections of 50% of network
		Cost effectiveness	80%	90%
Maintenance	Respond to service requests	Reactive service request completed within adopted time frames	Week	Day
Renewal	Sustain drainage infrastructure	Percentage of drainage assets renewed or replaced in year	1%/year	2%/year
		Percentage of drainage assets in condition poor/very poor	2%	1%
Upgrade/New	Drainage system meets design standards	Road capacity compared to traffic volumes	90% of sealed roads meet capacity standards	100% of sealed roads meet capacity standards

Table 2-11 Technical Levels of Service for Verges

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Verges maintained to a safe/neat standard	Customer feedback	2/year	4/year
		Cost effectiveness	70%	80%
Maintenance	Respond to service requests	Reactive service request completed within adopted time frames	3-4 weeks	1 week
	Verges are safe for use	Maintenance mowing	2/year	4/year
Renewal	Replace dead trees	Each lot has at least 1 tree	1 tree/2 lots	1 tree/lot
Upgrade/New	Residents have access to safe verge	Residents' complaints	10/year	5/year
	New trees	Requests	2 weeks	1 week

Table 2-12 Technical Levels of Service for Footpaths/bicycle paths

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Paths are safe for users' needs	Residents' complaints	10/year	5/year
		Cost effectiveness	70%	80%
Maintenance	Respond to service requests	Reactive service request completed within adopted time frames	1-2 weeks	1 day
	Maintain smooth surface	Maintenance remove trip hazards	1-2 weeks	1 day
Renewal	Replace broken paths	Residents' complaints	1-2 weeks	1 day
Upgrade/New	Residents have access to a sealed path	Every street to have a sealed path on one side	85% of dwellings	98% of dwellings
	New paths	Footpath program	Yearly	Yearly

Table 2-13 Technical Levels of Service for Bridges

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Bridges are safe for users' needs	Regular condition and defect surveys	3/year condition and defect inspections	Annual condition and defect inspections of 100% of network
		Cost effectiveness	70%	80%
Maintenance	Respond to service requests	Reactive service request completed within adopted time frames	3-4 weeks	1 week
	Maintain smooth surface	Maintenance	Every 5-10 years	Every 2 years
Renewal	Replace bridge	Upgrade	50 years	20 years
Upgrade/New	New bridge	Distance to travel to cross flooded Todd river	2km	>1km

Table 2-14 Technical Levels of Service for Buildings

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Building are safe for users' needs	Regular condition and defect surveys	Unplanned maintenance	To be reviewed
	Building are clean	Building cleaning frequency	Civic centre and Library are cleaned on daily basis. Grandstands and sporting ovals are cleaned before and after the events	To be reviewed
Maintenance	Maintain building assets to achieve long life	Reactive service request completed within adopted time frames	Week	To be reviewed
Renewal	Renew components at end useful life	Audit/Inspection	Schedule maintenance	To be reviewed
Upgrade/New	Provide new facilities or upgrade existing to meet end user requirement	Condition Audit/Inspection	Underperforming without grant funding	To be reviewed

Table 2-15 Technical Levels of Service for Land Improvement

Service Attributes	Service Activity Objective	Activity Measure Process	Current Performance	Desired for Optimum Lifecycle Cost
Technical Levels of Service				
Operations	Parks & gardens facilities meet user's needs	Cost effectiveness - Minimise water usage to minimise costs	No current measure	To be reviewed
Maintenance	Parks & Gardens are suitable for purpose	Reactive service request completed within adopted time frames	Week	2-3 days
Renewal	Parks and gardens meet user's needs	Audit/Inspection	Schedule maintenance	To be reviewed
Upgrade/New	New or upgrades to parks and gardens to meet the community's needs	Customer Satisfaction survey Customer requests for upgrades	Underperforming without grant funding	To be reviewed

Ideally the technical level of services should be defined by each sector and disaggregated down to key asset type or component. It is important that the service levels provided are regularly monitored and reviewed as these will change. The current performance of the infrastructure assets will be influenced by work efficiencies

and technology, and customer priorities will change over time. Review and establishment of the agreed position which achieves the best balance between service, risk and cost is essential.

2.4 Recommendations

It is recommended that for each sector definition of levels of service are developed for key asset types or components. These levels of service should then be socialised with the community in stakeholder engagements along with the associated budget commitments that will be required to sustain each level of service. Then to work with the community to establish the community's priorities for each of level of service and the desired level of service, that can be provided by the ASTC in a sustainable manner.

3 Future Demand

3.1 Demand Drivers

The demand drivers include a range of factors including population change, regulations, changes in demographics, seasonal factors, consumer preferences and expectations, technological changes, economic factors, environmental awareness, etc.

One of the key drivers for infrastructure demand is population and the historic population figures for Alice Springs from 2001 to 2020 are presented in Figure 3-1. From the historic population figures it can be seen that over the last five years Alice Springs' population figures have remained fairly constant at around 26,000. This would suggest that there would be no increase in the demand for infrastructure due to population growth.

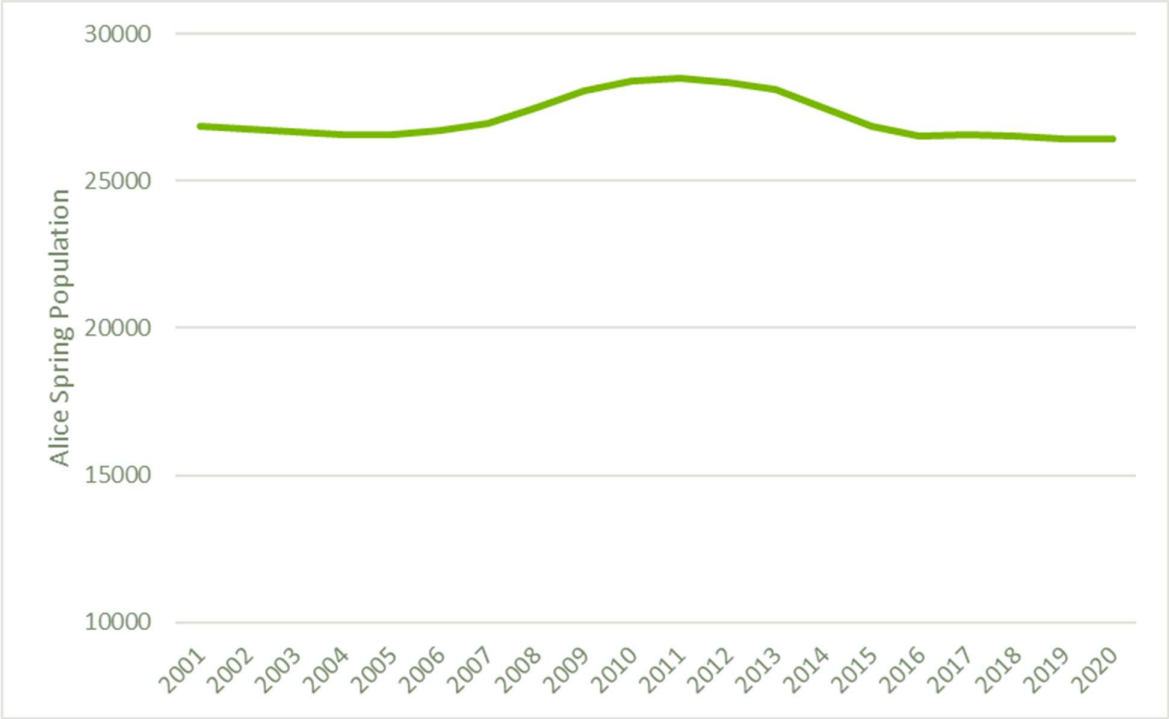

Figure 3-1 Alice Spring Historic Population

3.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets were identified and are summarised in Table 3-1 and Table 3-2.

The impact of demand drivers that may affect future service delivery and use of ASTC assets for transportation infrastructure are presented in Table 3-1.

Table 3-1 Demand Drivers, Projections and Impact on Service for Transport Infrastructure

Demand Drivers	Present Position	Projection	Impact on Services
Population	26 448[1]	Stable	Typically, population growth would increase traffic volumes and demand for more shared use of Transport Infrastructure. As population is not expected to grow significantly there is no growth in demand is expected.
New land releases	Rapid increase in demand for residential and commercial land and infrastructure	Land development is currently underway south of Alice Springs	No increase in demand expected for maintenance of Transport Infrastructure.
Change of demographics	Growing demand for rental properties.	Houses being replaced by multiple dwellings	Condensed population.
Resident expectations	Satisfied	No increased expectations in use of transportation infrastructure.	No significant increase in demand.

The impact of demand drivers that may affect future service delivery and use of ASTC assets for building and land improvement infrastructure is presented in Table 3-2.

Table 3-2 Demand Drivers, Projections and Impact on Service for Building and Land Improvements

Demand Drivers	Present Position	Projection	Impact on Services
Population	26 448	Stable	No higher demand on the size and number of building services, as no increase in population forecast.
Change of demographics	High percentage of population nearing or at retirement age	Continued increase in aged population	This will impact the type of building facilities are provided. Demand for facilities to cater for social activities appealing to certain age groups. Open spaces with assets and amenities suited to the aged, which may require some modification to open spaces within shorter walking distances of population catchment areas.

[1] https://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_ERP_LGA2020#

Demand Drivers	Present Position	Projection	Impact on Services
Resident expectations	Only 2 sporting ovals with Grandstands. Not sufficient exercise equipment closer to the population catchment area.	Potential for increased level of services, but not additional facilities/sites	Provision of grandstands in the existing ovals. Demand for increasingly complex, elaborate and expensive playground equipment. Increased need to include exercise equipment open space reserves, increased need for lighting to enable its use during evenings.
Environment	Because of the dry heat public expectation for more green parks and shade structure	Increased expectations of levels of service delivered.	More trees and shade structures

Although there may be an expectation from the community for higher levels of service from Buildings and Land Improvement infrastructure, it should be noted that the population of Alice Springs is not expected to grow and thus the support base to fund the expected increase in levels of service will not increase, limiting the extent to which these increased levels of service could be sustained.

3.3 Demand Management

Demand for new services or higher levels of service will need to be managed through a combination of managing the assets (existing assets, upgrading of existing assets and providing new assets to meet demand) and management of demand (through community stakeholder engagements). Demand management practices should include exploring managing customer expectations, non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management for transportation infrastructure is shown in Table 3-3. Further opportunities will be developed in future revisions of this asset management plan.

Table 3-3 Demand Management Plan for Transport Infrastructure

Demand Driver	Impact on Services	Demand Management Plan
No population growth expected	Available Transport Infrastructure should be sufficient	Upgrading of Transport Infrastructure may be required where current levels of service are below requirements.
New land release	Acquiring new assets will commit council to fund ongoing operations and maintenance costs	The ASTC will need to seek additional funding for any additional budget allocations required.
Requests for road maintenance	Customers may expect a higher level of service, which may lead to an increased number of requests and shorter response times.	Investigate the impact that these changes will have on operational and maintenance costs to council and conduct community consultation to determine priorities and agree levels of service expectations.

Opportunities identified to date for demand management for building and land improvement infrastructure is shown in Table 3-4.

Table 3-4 Demand Management Plan for Building and Land Improvements

Demand Driver	Impact on Services	Demand Management Plan
No population growth expected	Available community facilities should be sufficient	Upgrading of Buildings and Land Improvement infrastructure may be required where current levels of service are below requirements.
Change of demographics	Available community facilities should be sufficient, may require modification for change in demographics.	The ASTC will need to seek additional funding for any additional budget allocations required.
Resident expectations	Expectations for higher levels of service from existing asset portfolio.	Investigate the impact that these changes will have on operational and maintenance costs to council and conduct community consultation to determine priorities and agree levels of service expectations.

3.4 Recommendations

It is recommended that a more detailed study is undertaken to understand the expected demographic changes over the next twenty years that Alice Springs can expect. This study should also provide insight into the expected funding support levels that the ASTC should be able to expect from the community and should inform discussions with the community around levels of service for infrastructure assets.

4 Lifecycle Management

4.1 Purpose

This section of the plan examines the lifecycle management of the assets to ensure that the assets are able to provide the levels of service required to meet the need of the Alice Springs community.

4.2 Asset Information

The asset information that is typically used for the analysis carried out in this section in usually found in the asset register. For the ASTC the 2019/2020 asset register, was the most up to date, complete and comprehensive database of asset information available on the ASTC's infrastructure asset portfolio. Although the asset register was the most complete source of asset information for the ASTC, it was understood that the information in the asset register had not been consistently maintained or updated. This resulted in data gaps where the register contained records of assets that were no longer in existence and did not including records of assets that had been created more recently.

The ASTC's 2019/2020 asset register was the basis from which a Revised Asset Register for ASTC's infrastructure assets was derived and used for the analysis carried out in this Section. The details of the process utilised to derive the Revised Asset Register for ASTC's infrastructure assets is presented in Appendix 1 of this document.

4.3 Asset Value

From the Revised Asset Register for ASTC's infrastructure assets, the replacement value of the infrastructure has been determined by considering the Current Replacement Cost (CRC) with modern infrastructure of equivalent functionality. This cost represents all the costs associated for creating the assets and typically includes the costs associated with the need's analysis, concept design, detail design, construction, installation, and commissioning. Replacement value has been calculated based on adjusted for inflation to a dollar value in 2021 terms.

The current value has been determined on a Depreciated Replacement Cost (DRC) basis - the current replacement cost of the existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the assets.

Presented in Table 4-1 and Figure 4-1 is the replacement value, associated current value and annual depreciation of the ASTC's infrastructure portfolio shown at a sector level (Please see Appendix 1 for the full details of the sector determinations).

Table 4-1 Current and Replacement Value of ASTC Infrastructure Portfolio at Sector Level

Sector	Replacement Costs (CRC)	Current Value (DRC)	DRC as % of CRC	Annual Depreciation
Roads	$247,126,639	$207,421,397	83.9%	$4,464,337
Stormwater	$45,821,162	$35,015,693	76.4%	$575,875
Landfill	$18,940,650	$12,894,376	68.1%	$835,925
Community Facilities	$44,790,772	$25,324,797	56.5%	$2,430,958
Sports Facilities	$69,882,819	$46,917,713	67.1%	$2,316,162
Operational Building	$11,619,897	$8,750,956	75.3%	$355,757
Solar	$1,104,373	$883,498	80.0%	$55,219
Grand Total	**$439,286,313**	**$337,208,431**	**76.8%**	**$11,034,233**

From Table 4-1 it can be seen that the Roads & Stormwater sector accounts for 66.7% of ASTC's infrastructure value, followed by the Community Facilities (including Sports Facilities) which comprises 26.1%, Waste Management (Landfill) which amounts to 4.3%, and Operational Buildings (including Solar) which accounts for 2.9% of the ASTC's infrastructure value.

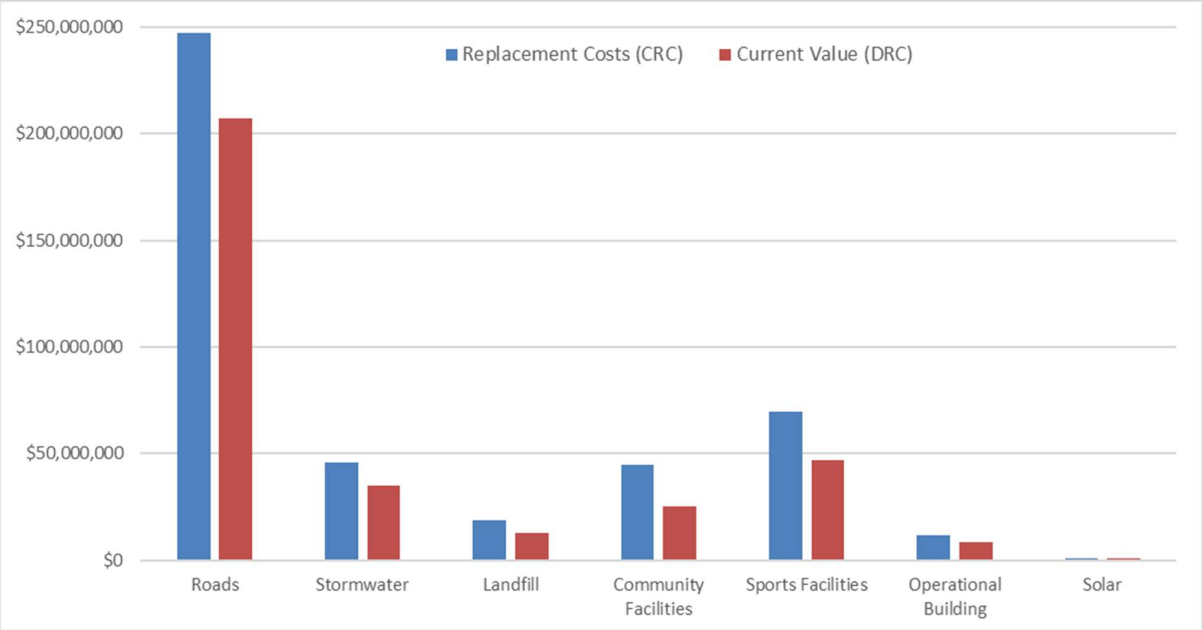

Figure 4-1 Replacement Value of Asset Portfolio by Sector

Table 4-1 shows the total replacement value of the ASTC infrastructure assets, which have a replacement value of around $ 439.3 million, and a current value of $ 337.2 million, as at 30 June 2020. The average percentage of current value divided by the replacement value for all asset groups is about 76.8%, which indicates that on average the infrastructure portfolio has just over three quarters of remaining useful life left, suggesting that the overall infrastructure portfolio of the ASTC is in good health. The annual depreciation shows that about $ 11.0 million (or 2.5%) of total asset portfolio value is consumed by depreciation each year.

4.3.1 Roads and Stormwater Sector

Presented in Table 4-2 and Figure 4-2 is the replacement value, current value, and annual depreciation of the ASTC's Roads and Stormwater sector assets at the Asset Sub-Class level.

Table 4-2 Roads & Stormwater Current and Replacement Value

Sector	Asset Sub-Class	Replacement Costs (CRC)	Current Value (DRC)	DRC as % of CRC	Annual Depreciation
Roads	Land Improvements	$6,675,575	$3,811,327	57.1%	$228,667
	Other Infrastructure	$57,093,881	$41,761,892	73.1%	$1,366,655
	Plant and Equipment	$15,616	$1,562	10.0%	$1,562
	Sealed Roads	$179,717,783	$158,986,989	88.5%	$2,790,144
	Unsealed Roads	$3,623,784	$2,859,627	78.9%	$77,310
Stormwater	Stormwater Drains	$45,821,162	$35,015,693	76.4%	$575,875
Sector Total		**$292,947,801**	**$242,437,090**	**82.8%**	**$5,040,213**

As shown in Table 4-2 the Seal Roads Asset Sub-Class comprises the majority (61.3%) of the value of the Roads and Stormwater sector infrastructure value.

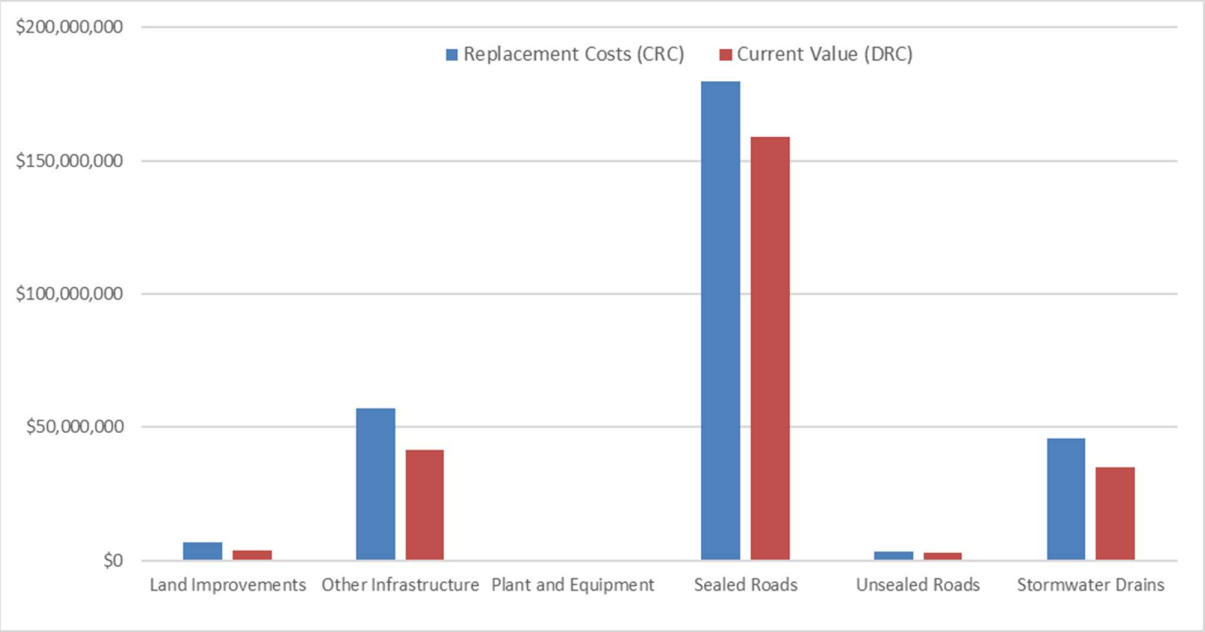

Figure 4-2 Roads & Stormwater Replacement Value by Asset Sub-Class

From Table 4-2 and Figure 4-2 the data suggests that in the Roads and Stormwater sector the assets that comprise the Plant and Equipment Asset Sub-Class seems to be nearing their end of life as overall these assets only have 10% of the replacement value remaining. Whilst the assets that form the Sealed Roads Asset Sub-Class should be in a very good condition, as these assets overall still have 88% of their replacement value. The annual depreciation of the assets in the Roads and Stormwater sector is $ 5.04 million or 1.7% of Roads and Stormwater sector asset portfolio value is consumed by depreciation each year.

4.3.2 Waste Management Sector

Presented in Table 4-3 and Figure 4-3 is the replacement value, current value and annual depreciation of the ASTC's Waste Management sector at an Asset Sub-Class level.

Table 4-3 Waste Management Current and Replacement Value

Sector	Asset Sub-Class	Replacement Costs (CRC)	Current Value (DRC)	DRC as % of CRC	Annual Depreciation
Landfill	Buildings	$6,921,287	$5,821,353	84.1%	$204,350
	Land Improvements	$6,548,051	$4,007,386	61.2%	$251,095
	Other Infrastructure	$286,021	$186,575	65.2%	$12,317
	Plant and Equipment	$5,030,379	$2,738,378	54.4%	$366,104
	Stormwater Drains	$154,911	$140,685	90.8%	$2,058
Sector Total		**$18,940,650**	**$12,894,376**	**68.1%**	**$835,925**

In Table 4-3 it can be seen that the assets that comprise the Buildings, Land Improvements and Plant and Equipment Asset Sub-Class account for the vast majority of the value of assets in the Waste Management sector (36.5%, 34.6% and 26.6%, respectively).

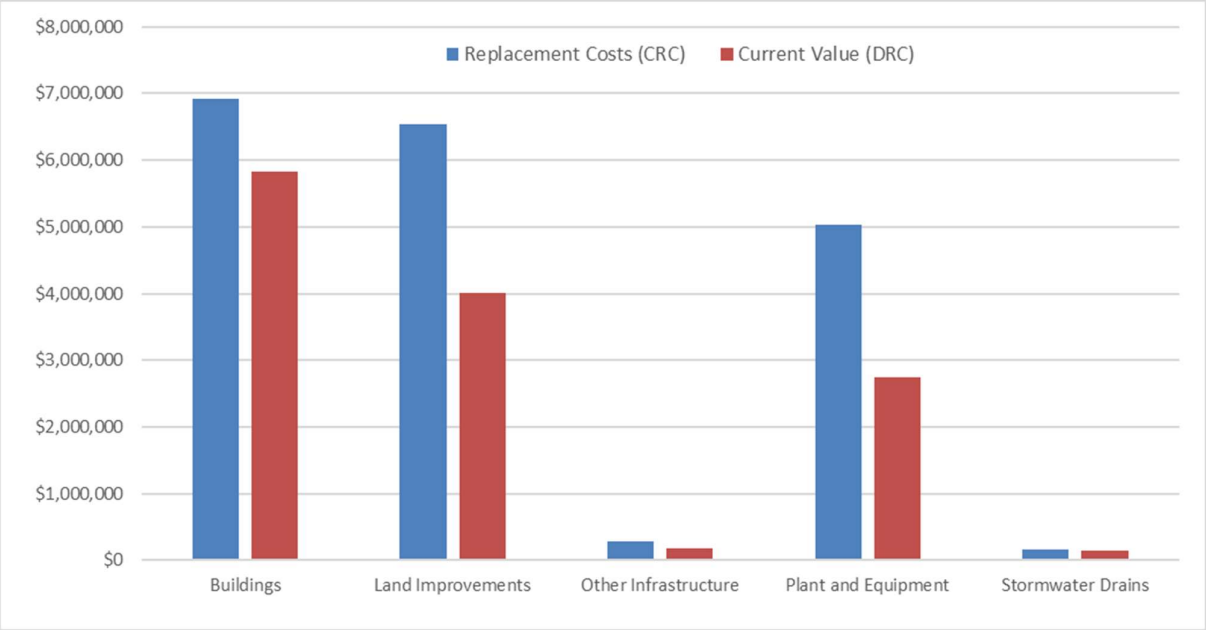

Figure 4-3 Waste Management Replacement Value by Asset Sub-Class

From Table 4-3 and Figure 4-3 it can be seen that in the Waste Management sector the assets that form the Plant and Equipment Asset Sub-Class collectively have around 54% of their remaining life, whilst the assets that from the Stormwater Drains would seem to be in a very good condition, as 90% of their replacement value still remains. The annual depreciation of the assets in the Waste Management sector is $ 0.84 million or 4.4% of the Waste Management sector asset portfolio value is consumed by depreciation each year.

4.3.3 Community Facilities Sector

Presented in Table 4-4 and Figure 4-4 is the replacement value, current value and annual depreciation of the ASTC's Community Facilities sector at an Asset Sub-Class level.

Table 4-4 Community Facilities Current and Replacement Value

Sector	Asset Sub-Class	Replacement Costs (CRC)	Current Value (DRC)	DRC as % of CRC	Annual Depreciation
Community Facilities	Buildings	$12,109,055	$9,815,171	81.1%	$342,843
	Furniture and Office Equipment	$754,567	$424,747	56.3%	$14,748
	Land Improvements	$19,921,730	$11,134,655	55.9%	$846,223
	Other Infrastructure	$99,170	$46,638	47.0%	$9,774
	Plant and Equipment	$11,906,251	$3,903,587	32.8%	$1,217,369
Sports Facilities	Buildings	$44,755,170	$35,245,497	78.8%	$1,282,999
	Furniture and Office Equipment	$216,217	$129,144	59.7%	$21,768
	Land Improvements	$23,378,966	$10,839,795	46.4%	$858,632
	Other Infrastructure	$4,250	$1,417	33.3%	$283
	Plant and Equipment	$1,528,216	$701,861	45.9%	$152,479
Sector Total		**$114,673,592**	**$72,242,510**	**63.0%**	**$4,747,120**

In Table 4-4 it can be seen that the assets that comprise the Buildings Asset Sub-Class is account for the 39% of the value of assets in the Community Facilities sector, which is the largest of the Asset Sub-Class, which suggest that the Community Facilities sector is not dominated by assets from on Asset Sub-Class.

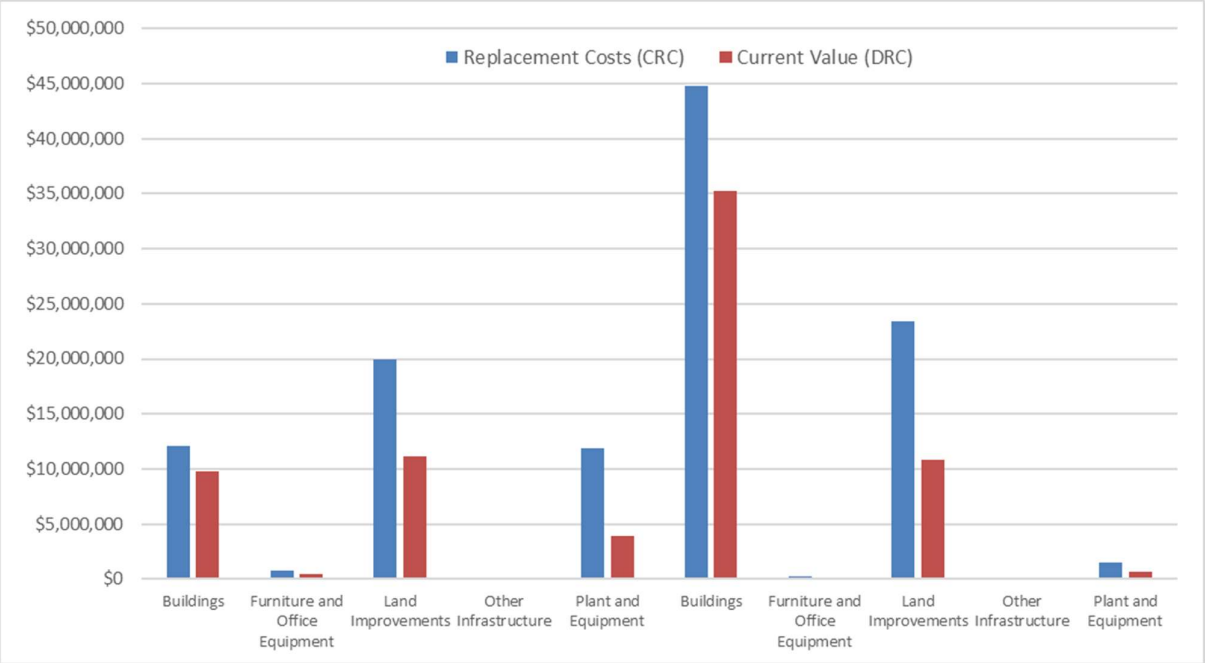

Figure 4-4 Community Facilities Replacement Value by Asset Sub-Class

From Table 4-4 and Figure 4-4 it can be seen that the assets that form the Other Infrastructure Asset Sub-Class collectively have around 33% of their remaining life, whilst the assets that from the Buildings would seem to be in a very good condition, as they have 81% and 79% of their replacement value still remains. The annual depreciation of the assets in the Community Facilities sector is $ 4.75 million or 4.1% of the Community Facilities sector asset portfolio value is consumed by depreciation each year.

4.3.4 Operational Buildings Sector

Presented in Table 4-5 and Figure 4-5 is the replacement value, current value and annual depreciation of the ASTC's Operational Buildings sector at an Asset Sub-Class level.

Table 4-5 Operational Buildings Current and Replacement Value

Sector	Asset Sub-Class	Replacement Costs (CRC)	Current Value (DRC)	DRC as % of CRC	Annual Depreciation
Operational Building	Buildings	$11,606,697	$8,748,956	75.4%	$355,357
	Land Improvements	$13,200	$2,000	15.2%	$400
Solar	Other Infrastructure	$1,104,373	$883,498	80.0%	$55,219
Sector Total		**$12,724,270**	**$9,634,454**	**75.7%**	**$410,975**

In Table 4-5 it can be seen that the assets that comprise the Buildings Asset Sub-Class accounts for the vast majority (91%) of the value of assets in the Operational Buildings sector.

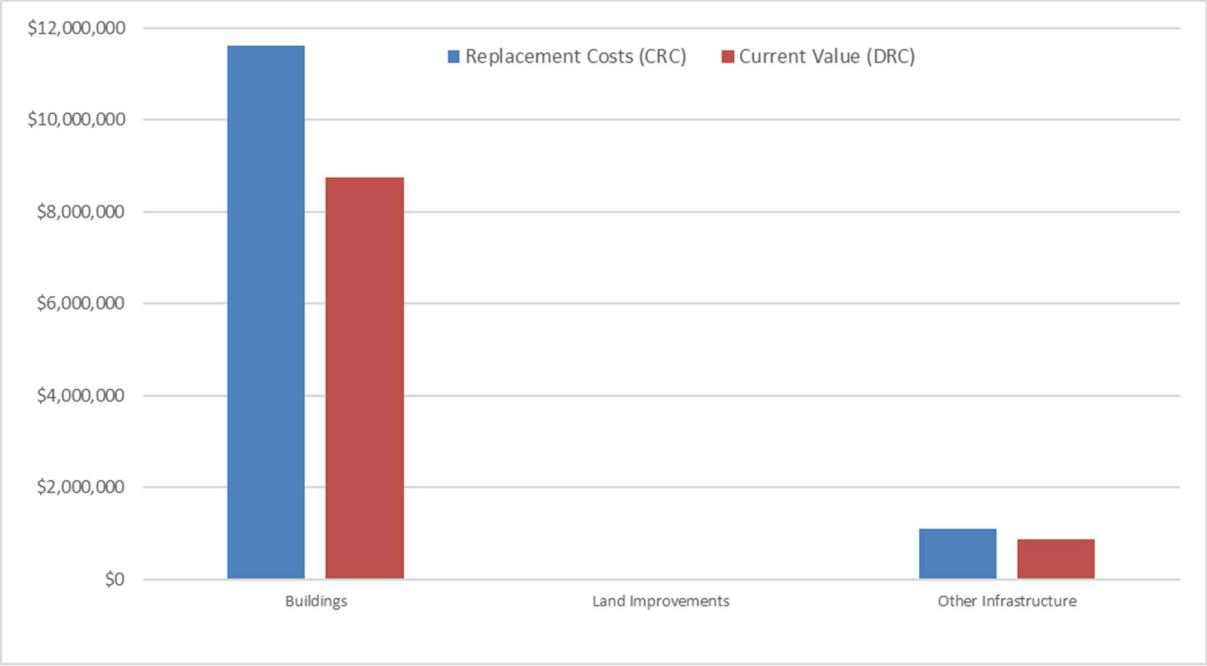

Figure 4-5 Operational Buildings Replacement Value by Asset Sub-Class

From Table 4-5 and Figure 4-5 it can be seen that the assets that form the Land Improvements Asset Sub-Class have around 15.2% of their remaining life, whilst the assets that from the Other Infrastructure and Buildings would seem to be in a very good condition, as they have 80% and 75% of their replacement value remaining. The annual depreciation of the assets in the Operational Buildings sector is $ 0.41 million or 3.2% of the Operational Buildings sector asset portfolio value is consumed by depreciation each year.

4.4 Asset Condition

In the ASTC the 2019/2020 asset register the condition of the infrastructure assets was been determined following a common five-point grading scale, using the following condition grades:

- Near Perfect
- Superficial Deterioration
- Serious Deterioration
- Require Major Reconstruction
- Asset Unserviceable

No documentation was available that provided clarity on the definitions and associated estimations on remaining useful life for each of the condition grades. Further development is recommended to develop and document definitions for the five condition grades along with descriptions and indicative remaining useful life estimations, an example of this is presented in Table 4-6.

Table 4-6 Example of Condition Grading Definitions

Grade	Description	Detailed Description	Indicative RUL
1	Near Perfect	Asset structure is sound, well maintained. Only normal maintenance required.	71-100% EUL
2	Superficial Deterioration	Serves needs with minor deterioration (< 5%). Minor maintenance required.	46-70% EUL
3	Serious Deterioration	Marginal, clear evident deterioration (10-20%). Significant maintenance required.	26-45% EUL
4	Require Major Reconstruction	Significant deterioration of structure and/or appearance. Significant impairment of functionality (20-40%). Significant renewal/upgrade required.	11-25% EUL
5	Asset Unserviceable	Unsound, failed, needs reconstruction/ replacement (> 50% needs replacement)	0-10% EUL

'EUL' is Expected Useful Life & 'RUL' is Remaining Useful Life

The "indicative" remaining useful life is reflected in the typical parabolic deterioration curve for infrastructure assets, shown in Figure 4-6.

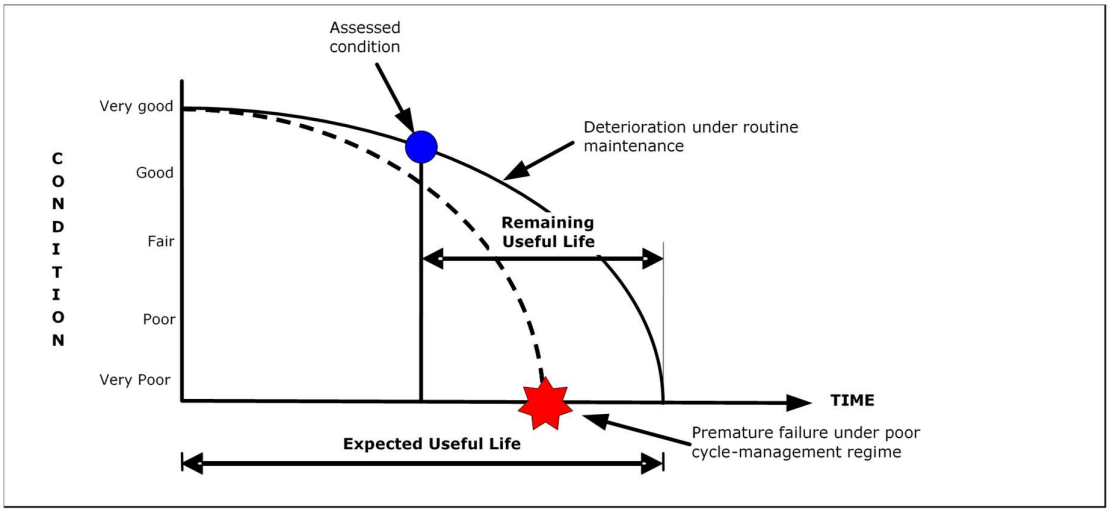

Figure 4-6 Typical Parabolic Deterioration of an Infrastructure Assets

The condition grading per Sector is summarised in the figures and tables below. Presented in Table 4-7 and Figure 4-7 is the total value of assets by Sector and their associated condition rating. This indicates that the majority of the ASTC's infrastructure assets seem to be in the Superficial Deterioration condition grade (55% in good condition) and in the Serious Deterioration condition grade (29% in fair condition).

Table 4-7 Condition Grading ASTC Infrastructure Portfolio at Sector Level (replacement value per category)

Sector	Condition Grading				
	Near Perfect	Superficial Deterioration	Serious Deterioration	Require Major Reconstruction	Asset Unserviceable
Roads	$13,218,101	$145,271,447	$87,053,019	$1,147,175	$436,897
Stormwater	$414,617	$45,406,545			
Landfill	$6,404,058	$9,107,187	$2,822,678	$349,500	$257,226
Community Facilities	$14,987,857	$8,752,043	$13,413,973	$5,790,734	$1,846,164
Sports Facilities	$10,904,412	$28,574,947	$19,378,937	$6,973,597	$4,050,925
Operational Building	$203,875	$5,927,581	$4,842,643	$252,760	$393,038
Solar	$1,104,373				
Total	**$47,237,294**	**$243,039,751**	**$127,511,251**	**$14,513,767**	**$6,984,251**
Composition	**11%**	**55%**	**29%**	**3%**	**2%**

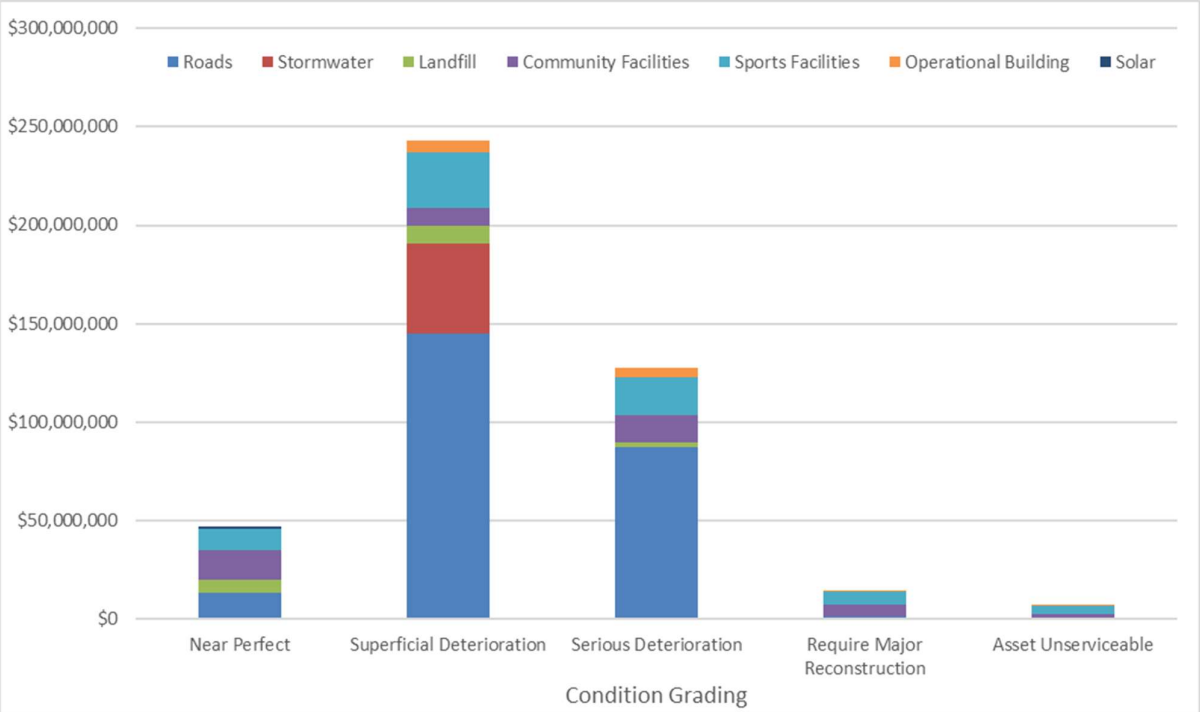

Figure 4-7 Condition Grading ASTC Infrastructure Portfolio at Sector Level

Table 4-7 and Figure 4-7 show the assets that form the Community Facilities sector account for 88% and 84 % of the value of the assets with a condition grading of Require Major Reconstruction (poor) and Asset Unserviceable (very poor) respectively.

4.4.1 Roads and Stormwater Sector

Presented in Table 4-8 and Figure 4-8 is the replacement value of the ASTC's Roads and Stormwater sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-8 Roads & Stormwater Condition Gradings

Sector	Asset Sub-Class	Condition Grading				
		Near Perfect	Superficial Deterioration	Serious Deterioration	Require Major Reconstruction	Asset Unserviceable
Roads	Land Improvements	$2,013,717	$3,321,201	$343,052	$560,708	$436,897
	Other Infrastructure	$9,153,793	$31,378,049	$15,984,322	$577,717	
	Plant and Equipment			$15,616		
	Sealed Roads	$812,399	$108,777,605	$70,119,029	$8,750	
	Unsealed Roads	$1,238,192	$1,794,592	$591,000		
Stormwater	Stormwater Drains	$414,617	$45,406,545			
Total		**$13,632,718**	**$190,677,993**	**$87,053,019**	**$1,147,175**	**$436,897**
Composition		**4.7%**	**65.1%**	**29.7%**	**0.4%**	**0.1%**

Table 4-8 shows that the majority of the asset value for Roads and Stormwater sector seem to be in the Superficial Deterioration condition grade (65% in good condition) and in the Serious Deterioration condition grade (30% in fair condition), which contrasts somewhat with the figure from Table 4-2 that shows that the Roads and Stormwater sector assets still have 82.8% of their replacement value remaining.

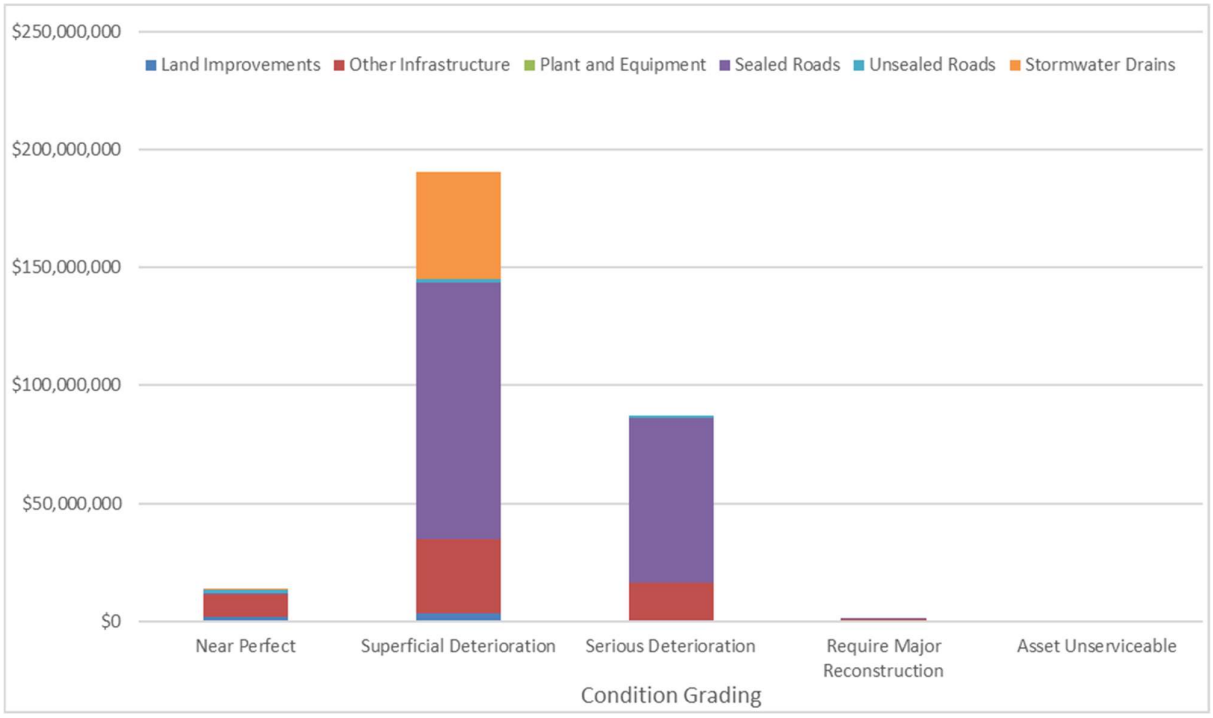

Figure 4-8 Roads & Stormwater Condition Replacement Value by Asset Sub-Class

From Table 4-8 and Figure 4-8 the data suggests that in the Roads and Stormwater sector the assets that comprise the Sealed Roads Asset Sub-Class seems to have a significant portion of assets (39% by value) that are in the Serious Deterioration condition grade (i.e. in fair condition).

4.4.2 Waste Management Sector

Presented in Table 4-9 and Figure 4-9 is the replacement value of the ASTC's Waste Management sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-9 Waste Management Condition Gradings

Sector	Asset Sub-Class	Condition Grading				
		Near Perfect	Superficial Deterioration	Serious Deterioration	Require Major Reconstruction	Asset Unserviceable
Landfill	Buildings	$3,241,117	$3,668,875	$11,296		
	Land Improvements	$636,034	$3,310,584	$2,259,433	$342,000	
	Other Infrastructure	$123,271	$144,750	$18,000		
	Plant and Equipment	$2,403,637	$1,828,067	$533,949	$7,500	$257,226
	Stormwater Drains		$154,911			
Total		**$6,404,058**	**$9,107,187**	**$2,822,678**	**$349,500**	**$257,226**
Composition		**33.8%**	**48.1%**	**14.9%**	**1.8%**	**1.4%**

Table 4-9 shows that the majority of the asset value for Waste Management sector seem to be in the Superficial Deterioration condition grade (48% in good condition) and in the Near Perfect condition grade (34% in very good condition), which contrasts somewhat with the figure from Table 4-3 that indicates that the Waste Management sector assets still have 68.1% of their replacement value remaining.

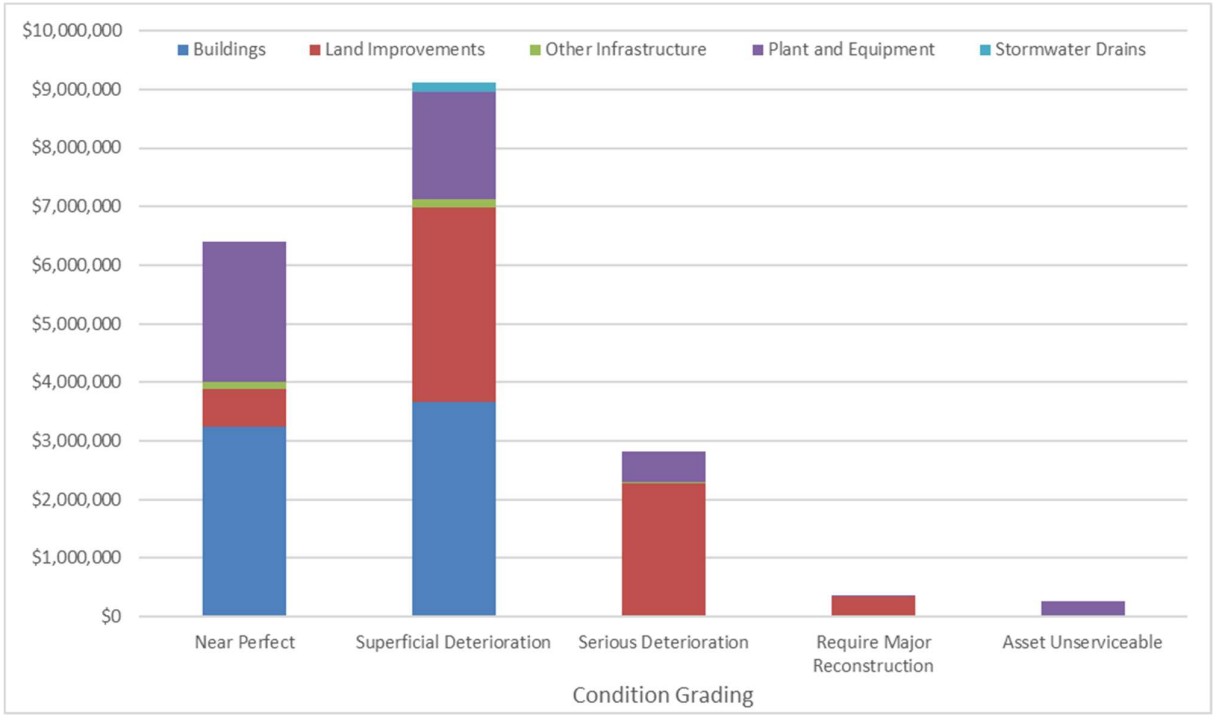

Figure 4-9 Waste Management Condition Replacement Value by Asset Sub-Class

From Table 4-9 and Figure 4-9 the data suggests that in the Waste Management sector the assets that comprise the Land Improvements Asset Sub-Class seems to have a significant portion of its assets (40% by value) that are in the 'Serious Deterioration' and 'Require Major Reconstruction' condition grade (i.e. a fair to poor condition).

4.4.3 Community Facilities Sector

Presented in Table 4-10 and Figure 4-10 is the replacement value of the ASTC's Community Facilities sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-10 Community Facilities Condition Gradings

Sector	Asset Sub-Class	Condition Grading				
		Near Perfect	Superficial Deterioration	Serious Deterioration	Require Major Reconstruction	Asset Unserviceable
Community Facilities	Buildings	$1,354,533	$6,363,176	$3,069,178	$1,322,168	
	Furniture and Office Equipment			$738,422	$4,000	$12,144
	Land Improvements	$9,687,092	$1,071,238	$5,076,658	$2,261,721	$1,825,020
	Other Infrastructure	$26,625	$72,545			
	Plant and Equipment	$3,919,606	$1,245,085	$4,529,715	$2,202,845	$9,000
Sports Facilities	Buildings	$9,139,976	$23,446,243	$6,068,834	$4,501,364	$1,598,754
	Furniture and Office Equipment	$216,217				
	Land Improvements	$715,215	$4,658,243	$13,161,072	$2,421,567	$2,422,870
	Other Infrastructure			$4,250		
	Plant and Equipment	$833,005	$470,461	$144,781	$50,667	$29,302
Total		**$25,892,269**	**$37,326,991**	**$32,792,911**	**$12,764,331**	**$5,897,089**
Composition		**22.6%**	**32.6%**	**28.6%**	**11.1%**	**5.1%**

Table 4-10 shows that the majority of the asset value for Community Facilities sector seem to be in the Superficial Deterioration condition grade (33% in good condition), Serious Deterioration condition grade (29% in fair condition) and Near Perfect condition grade (23% in very good condition), this seems to be in alignment the figure from Table 4-4 that shows that the Community Facilities sector assets still have 63% of their replacement value remaining.

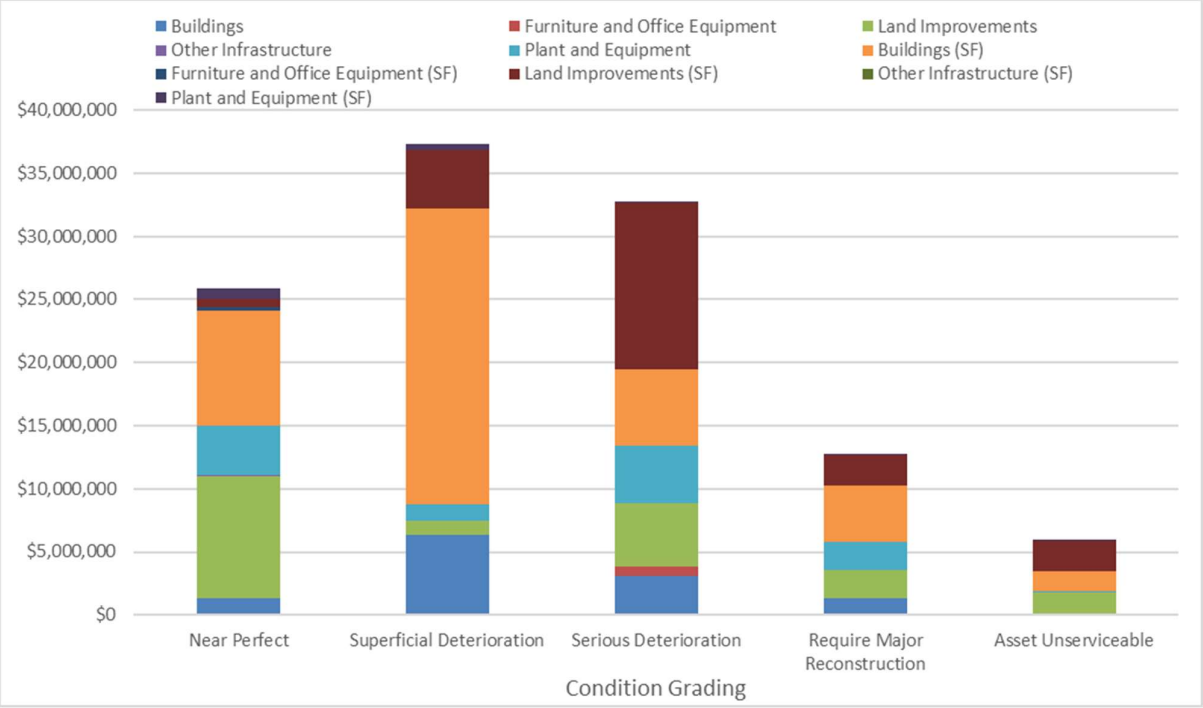

Figure 4-10 Community Facilities Condition Replacement Value by Asset Sub-Class

From Table 4-10 and Figure 4-10 the data suggests that in the Community Facilities sector the assets that comprise the Buildings (Sport Facilities) and Land Improvements (Sport facilities) Asset Sub-Class seems to have a significant portion of assets (54% by value) that are in in the Require Major Reconstruction (i.e. poor condition) and (68% by value) that are in the Asset Unserviceable condition grade (i.e. very poor condition).

4.4.4 Operational Buildings Sector

Presented in Table 4-11 and Figure 4-11 is the replacement value of the ASTC's Operational Buildings sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-11 Operational Buildings Condition Gradings

Sector	Asset Sub-Class	Condition Grading				
		Near Perfect	Superficial Deterioration	Serious Deterioration	Require Major Reconstruction	Asset Unserviceable
Operational Building	Buildings	$203,875	$5,927,581	484264281.0%	$252,760	$379,838
	Land Improvements					$13,200
Solar	Other Infrastructure	$1,104,373				
Sector Total		**$1,308,248**	**$5,927,581**	**$4,842,643**	**$252,760**	**$393,038**
Composition		**10.3%**	**46.6%**	**38.1%**	**2.0%**	**3.1%**

Table 4-11 shows that the majority of the asset value for Operational Buildings sector seem to be in both the Superficial Deterioration condition grade (47% in good condition) and in the Serious Deterioration condition grade (38% in fair condition), which contrasts somewhat with the figure from Table 4-5 that shows that the Operational Buildings sector assets still have 75.7% of their replacement value remaining.

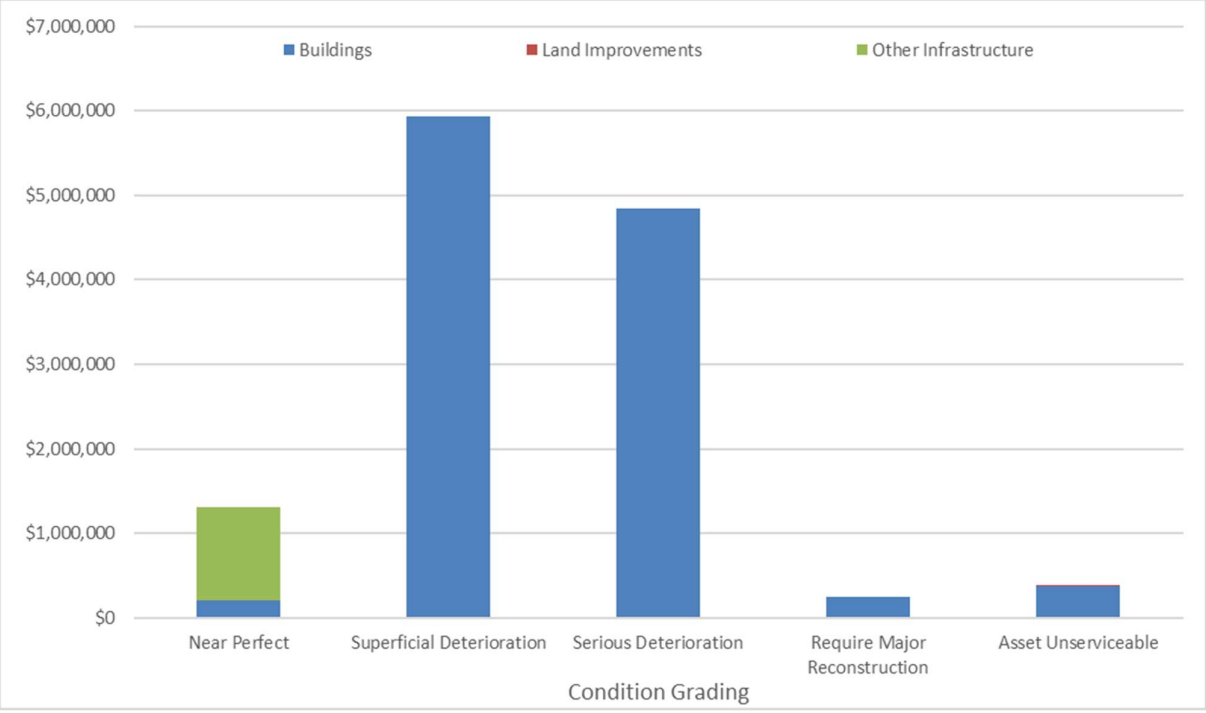

Figure 4-11 Operational Buildings Condition Replacement Value by Asset Sub-Class

From Table 4-11 and Figure 4-11 the data suggests that in the Operational Buildings sector the assets that comprise the Buildings Asset Sub-Class dominate and comprise all of the assets (100% by value) that are in the Require Major Reconstruction condition grade (i.e. poor condition) and the vast majority of the assets (97% by value) that are in the Asset Unserviceable condition grade (i.e. very poor condition).

4.5 Asset Remaining Useful Life

From the Revised Asset Register for ASTC's infrastructure assets, the Remaining Useful Life (RUL) of the infrastructure has been determined by considering the dates that the assets were created and there Expected useful Life (EUL) as documented in Appendix 1.

Presented in Figure 4-12 is the plot of the total value of all assets by Sector and years of RUL. The range of RUL for the infrastructure assets in ASTC ranged from 0 to 118 years. Where assets with a RUL of zero would be considered assets that reached the end of their useful life and should have been replaced. In Figure 4-12 it can be seen that there are five significant peaks in replacement value, $ 51.2 Million at 21 years, $ 28.7 Million at 34 years, $ 70.8 Million at 56 years, $ 45.5 Million at 61 years and $ 81.3 Million at 104 years. For four of these peaks the assets that form the Roads Sector account for the vast majority of the asset replacement value (i.e. 60% by value at 21 years, 96% by value at 34 years, 82% by value at 56 years, and 100% by value at 104 years is for assets in the Roads Sector).

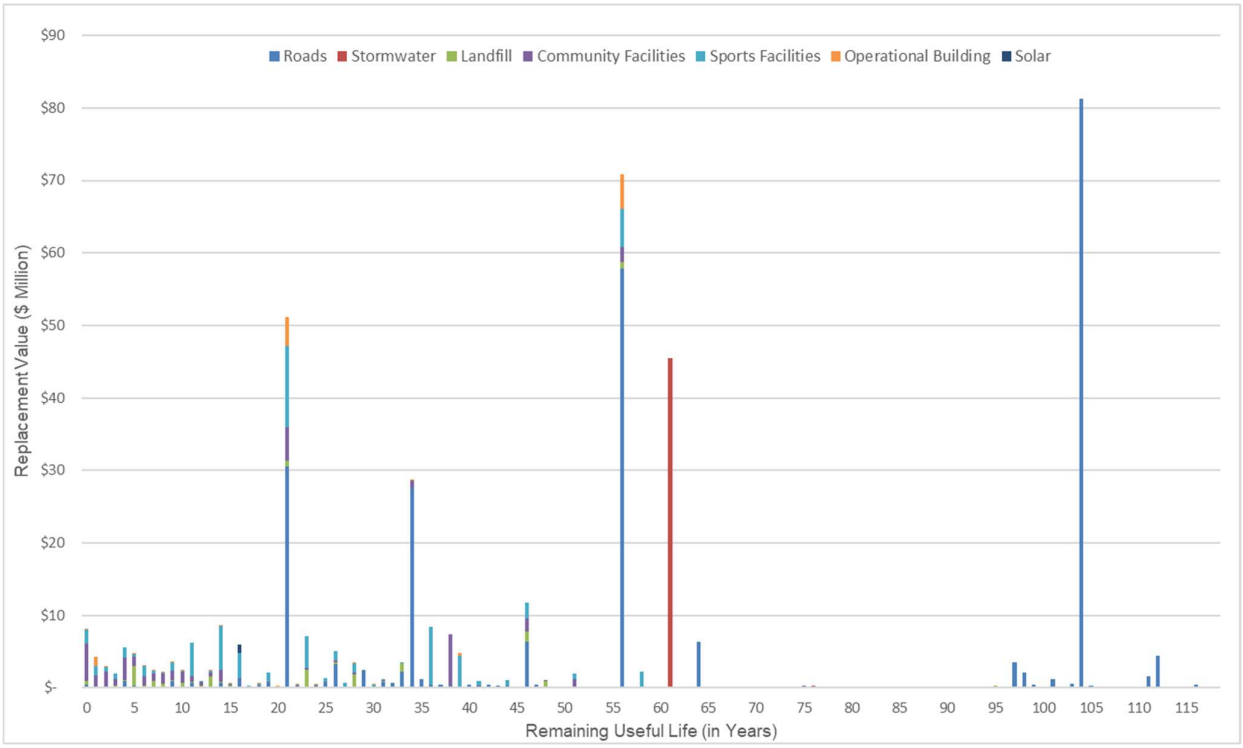

Figure 4-12 Asset Current Replacement Cost against Remaining Useful Life by Sector

Presented in Figure 4-13 is the plot showing the expected value of assets that are expected to reach end of life over the next 25 year-period by sector.

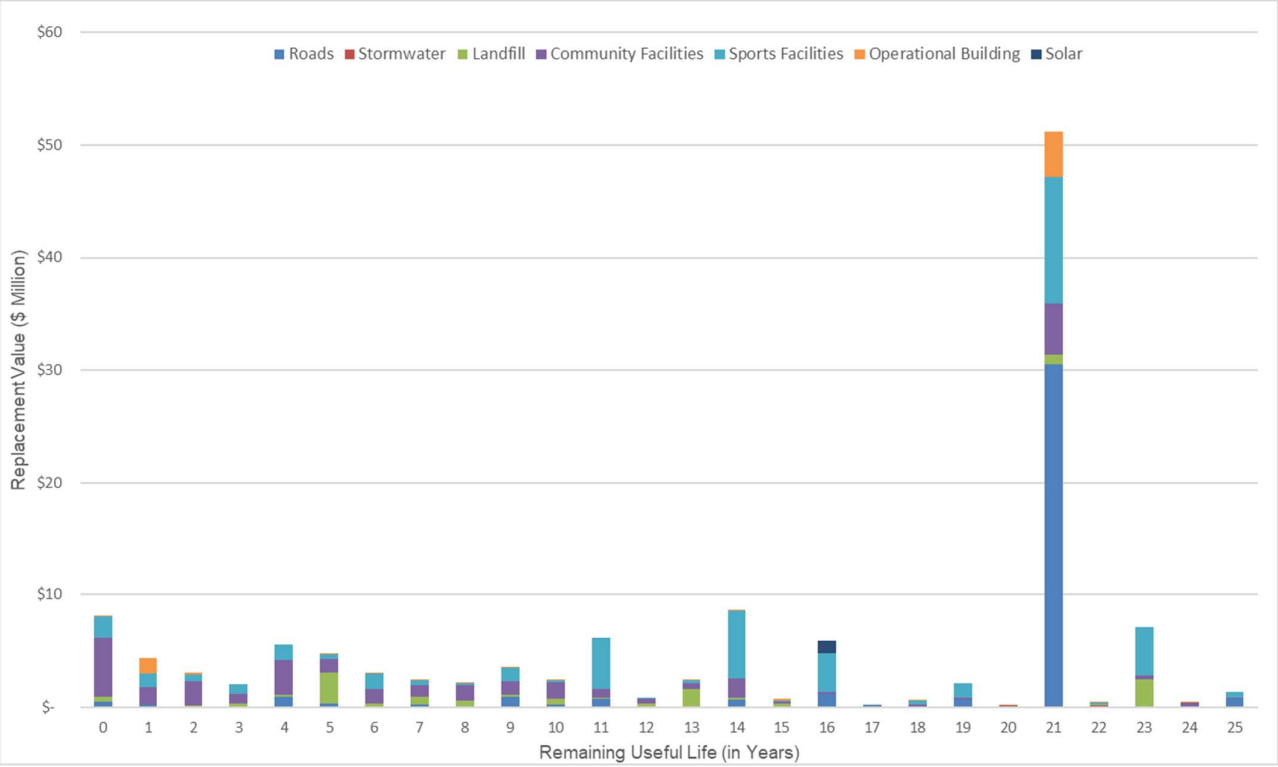

Figure 4-13 Expected Asset Current Replacement Costs by Sector over next 25 Years

For the purposes of this study the RUL's will be grouped into five categories, namely: 1 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 25 years and more than 26 years. Presented in Table 4-12 and Figure 4-14 is an analysis of the replacement value of assets within the remaining useful life categories by Sector. This shows that the majority of the ASTC's infrastructure assets 70.5% by value have more than 26 years of life remaining.

Table 4-12 Remaining useful life in replacement value according to Sector

Sector	Remaining Useful Life					
	0 Years	1 to 5 Years	6 to 10 Years	11 to 15 Years	16 to 25 Years	> 26 Years
Roads	$470,898	$1,574,922	$1,379,924	$1,458,388	$33,202,970	$209,039,537
Stormwater	$0	$0	$0	$0	$113,125	$45,708,037
Landfill	$432,421	$3,221,441	$2,224,629	$2,408,922	$3,426,449	$7,226,789
Community Facilities	$5,205,339	$8,876,749	$6,368,706	$3,608,455	$6,109,084	$14,622,439
Sports Facilities	$1,958,875	$4,404,514	$3,259,467	$10,961,960	$21,355,533	$27,942,471
Operational Building	$5,451	$1,530,050	$341,499	$207,812	$4,385,282	$5,149,803
Solar	$0	$0	$0	$0	$1,104,373	$0
Total	**$8,072,985**	**$19,607,675**	**$13,574,225**	**$18,645,536**	**$69,696,816**	**$309,689,076**
Composition	**1.8%**	**4.5%**	**3.1%**	**4.2%**	**15.9%**	**70.5%**

From Table 4-12 it can be seen that the value of assets with no remaining useful life is $ 8.1 million which accounts for 1.8% by value of the total infrastructure portfolio of the ASTC. The assets that comprise the Community Facilities (including Sport Facilities) Sector accounts for 88.7% by value of the assets with no remaining useful life.

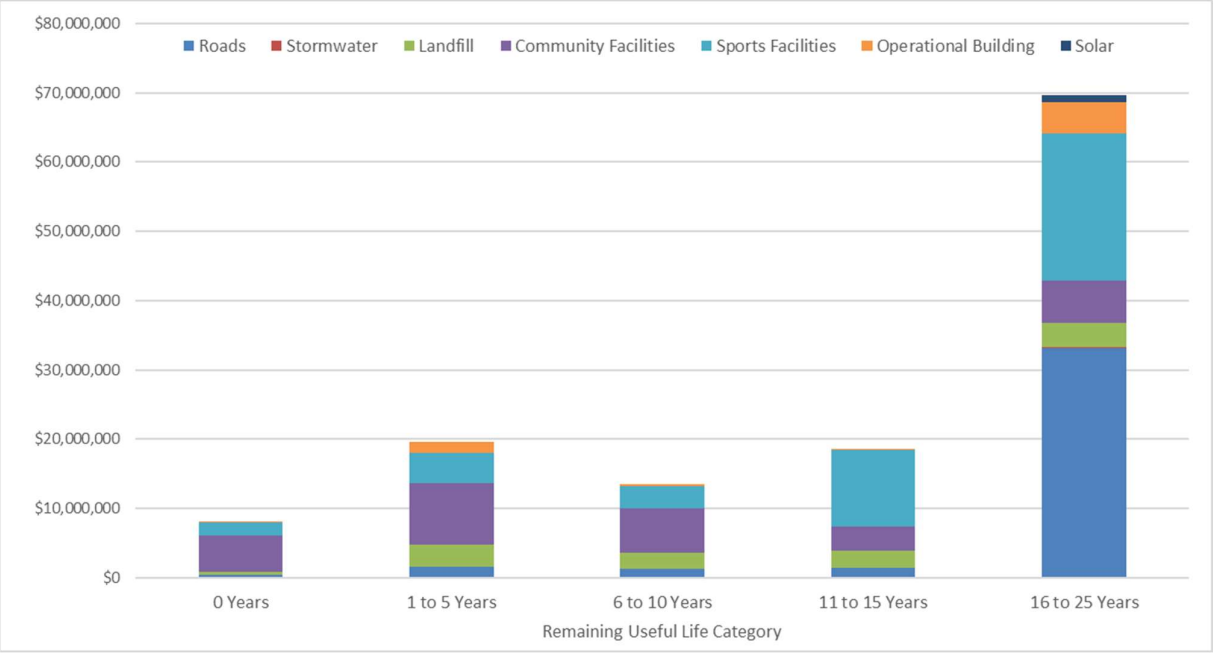

Figure 4-14 Asset Current Replacement Cost against Remaining Useful Life by Sector

The ASTC will need to consider an infrastructure renewal or upgrade programme of $19.6 million to address the assets that are due to reach the end of their remaining useful life over the next five years. The assets that comprise the Community Facilities (including Sport Facilities) Sector accounts for 67.7% by value of the assets that are expected to reach the end of their remaining useful life over the next five years. Typically, the maintenance focus for the next 5 years would be on the facilities with a remaining useful life of less than 5 years, i.e. the assets that comprise the Community Facilities (including Sport Facilities) Sector.

4.5.1 Roads and Stormwater Sector

Presented in Table 4-13 and Figure 4-15 is the replacement value of the ASTC's Roads and Stormwater sector assets at the Asset Sub-Class level by the remaining useful life categories.

Table 4-13 Roads & Stormwater Sector Remaining Useful Life

Sector	Asset Sub-Class	Remaining Useful Life					
		0 Years	1 to 5 Years	6 to 10 Years	11 to 15 Years	16 to 25 Years	> 26 Years
Roads	Land Improvements	$466,098	$1,152,417	$492,247	$81,504	$1,041,049	$3,442,260
	Other Infrastructure	$4,800	$406,889	$887,677	$785,884	$6,585,311	$48,423,319
	Plant and Equipment	$0	$15,616	$0	$0	$0	$0
	Sealed Roads	$0	$0	$0	$0	$25,576,609	$154,141,174
	Unsealed Roads	$0	$0	$0	$591,000	$0	$3,032,784
Stormwater	Stormwater Drains	$0	$0	$0	$0	$113,125	$45,708,037
Sector Total		**$470,898**	**$1,574,922**	**$1,379,924**	**$1,458,388**	**$33,316,095**	**$254,747,574**
Composition		**0.2%**	**0.5%**	**0.5%**	**0.5%**	**11.4%**	**87.0%**

Table 4-13 shows that overall, 1.7% of the value of the assets that form Roads and Stormwater asset portfolio are due to reach the end of their useful life over the next fifteen years.

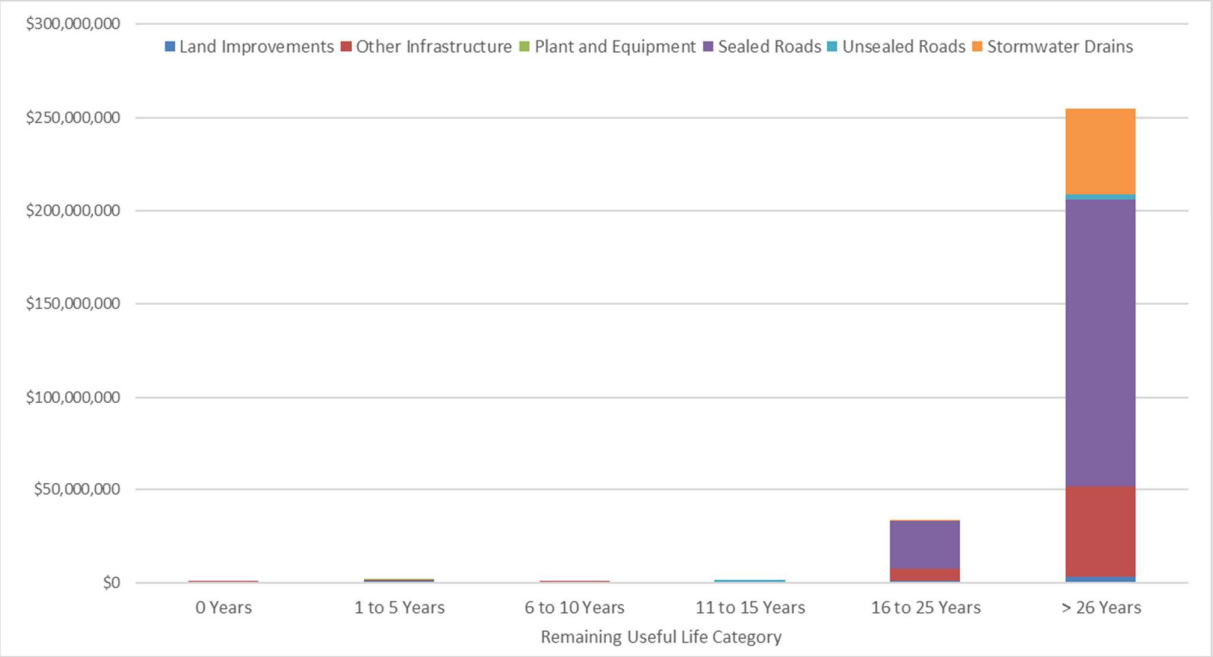

Figure 4-15 Roads & Stormwater Sector Remaining Useful Life

From Table 4-13 and Figure 4-15 there is a renewal back log of $ 471k in the Roads and Stormwater Sector, with an additional $ 1,575 k in value of assets that are due to reach the end of their useful life over the next five-year period. The Asset Sub-Class that comprises these is predominantly the Land Improvements assets which forms 99% by value of the renewal backlog and 73% by value of the assets that will reach the end of their useful life in the next five years.

4.5.2 Waste Management Sector

Presented in Table 4-14 and Figure 4-16 is the replacement value of the ASTC's Waste Management sector assets at the Asset Sub-Class level by the remaining useful life categories.

Table 4-14 Waste Management Sector Remaining Useful Life

Sector	Asset Sub-Class	Remaining Useful Life					
		0 Years	1 to 5 Years	6 to 10 Years	11 to 15 Years	16 to 25 Years	> 26 Years
Landfill	Buildings	$0	$16,279	$15,135	$195,442	$3,288,532	$3,405,900
	Land Improvements	$54,500	$2,314,618	$20,000	$524,446	$95,105	$3,539,382
	Other Infrastructure	$0	$18,892	$18,000	$79,721	$38,408	$131,000
	Plant and Equipment	$377,921	$871,652	$2,171,494	$1,609,313	$0	$0
	Stormwater Drains	$0	$0	$0	$0	$4,405	$150,507
Sector Total		**$432,421**	**$3,221,441**	**$2,224,629**	**$2,408,922**	**$3,426,449**	**$7,226,789**
Composition		**2%**	**17%**	**12%**	**13%**	**18%**	**38%**

Table 4-14 shows that overall, 44% of the value of the assets that form Waste Management asset portfolio are due to reach the end of their useful life over the next fifteen years.

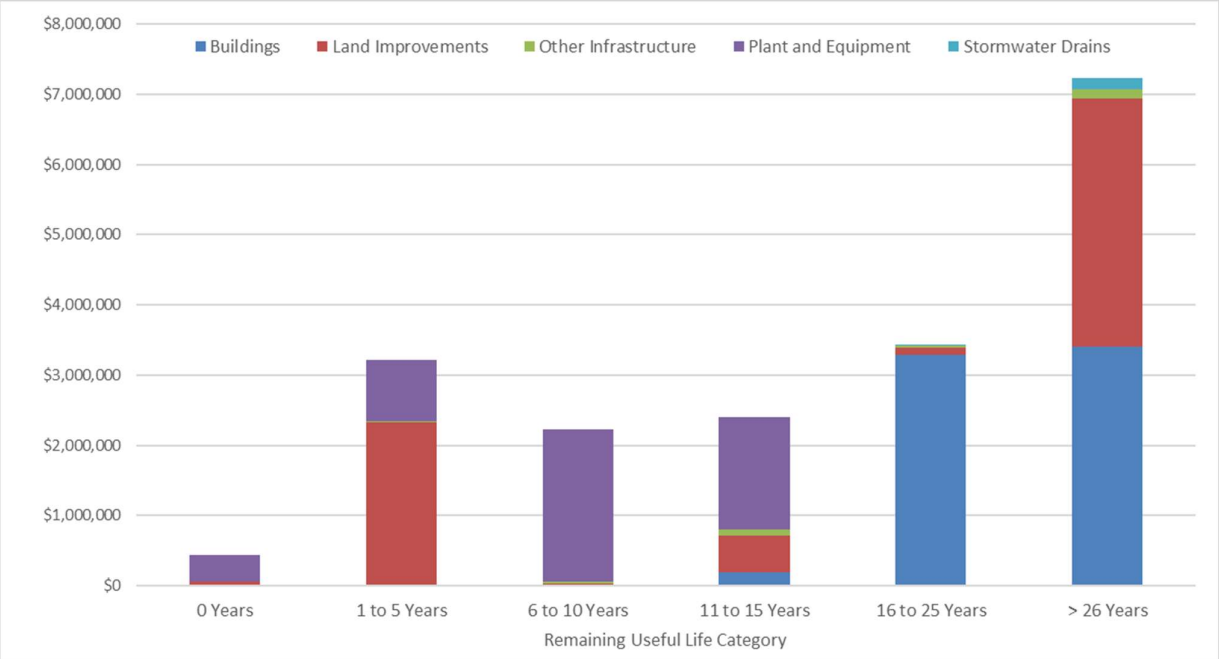

Figure 4-16 Waste Management Sector Remaining Useful Life

From in Table 4-14 and Figure 4-16 there is a renewal back log of $ 432k in the Waste Management Sector, with an additional $ 3,221 k in value of assets that are due to reach the end of their useful life over the next five-year period. The Asset Sub-Class that comprises these is predominantly the Plant and Equipment assets which forms 87% by value of the renewal backlog and the Land Improvements assets which forms 72% by value of the assets that will reach the end of their useful life in the next five years.

4.5.3 Community Facilities Sector

Presented in Table 4-15 and Figure 4-17 is the replacement value of the ASTC's Community Facilities sector assets at the Asset Sub-Class level by the remaining useful life categories.

Table 4-15 Community Facilities Sector Remaining Useful Life

Sector	Asset Sub-Class	Remaining Useful Life					
		0 Years	1 to 5 Years	6 to 10 Years	11 to 15 Years	16 to 25 Years	> 26 Years
Community Facilities	Buildings	$6,690	$470,179	$239,968	$380,416	$4,697,828	$6,313,974
	Furniture and Office Equipment	$2,377	$7,307	$17,875	$16,144	$0	$710,864
	Land Improvements	$1,649,309	$3,555,275	$3,397,421	$2,471,083	$1,291,040	$7,557,602
	Other Infrastructure	$0	$26,625	$49,313	$23,233	$0	$0
	Plant and Equipment	$3,546,964	$4,817,362	$2,664,130	$717,579	$120,216	$40,000
Sports Facilities	Buildings	$0	$24,553	$1,127,900	$4,259,296	$16,509,365	$22,834,056
	Furniture and Office Equipment	$0	$2,198	$214,019	$0	$0	$0
	Land Improvements	$1,907,575	$3,472,007	$1,579,864	$6,464,938	$4,846,169	$5,108,415
	Other Infrastructure	$0	$4,250	$0	$0	$0	$0
	Plant and Equipment	$51,300	$901,506	$337,684	$237,726	$0	$0
Sector Total		**$7,164,214**	**$13,281,263**	**$9,628,173**	**$14,570,414**	**$27,464,617**	**$42,564,910**
Composition		**6.2%**	**11.6%**	**8.4%**	**12.7%**	**24.0%**	**37.1%**

Table 4-15 shows that overall, 38.9% of the value of the assets that form Community Facilities asset portfolio are due to reach the end of their useful life over the next fifteen years.

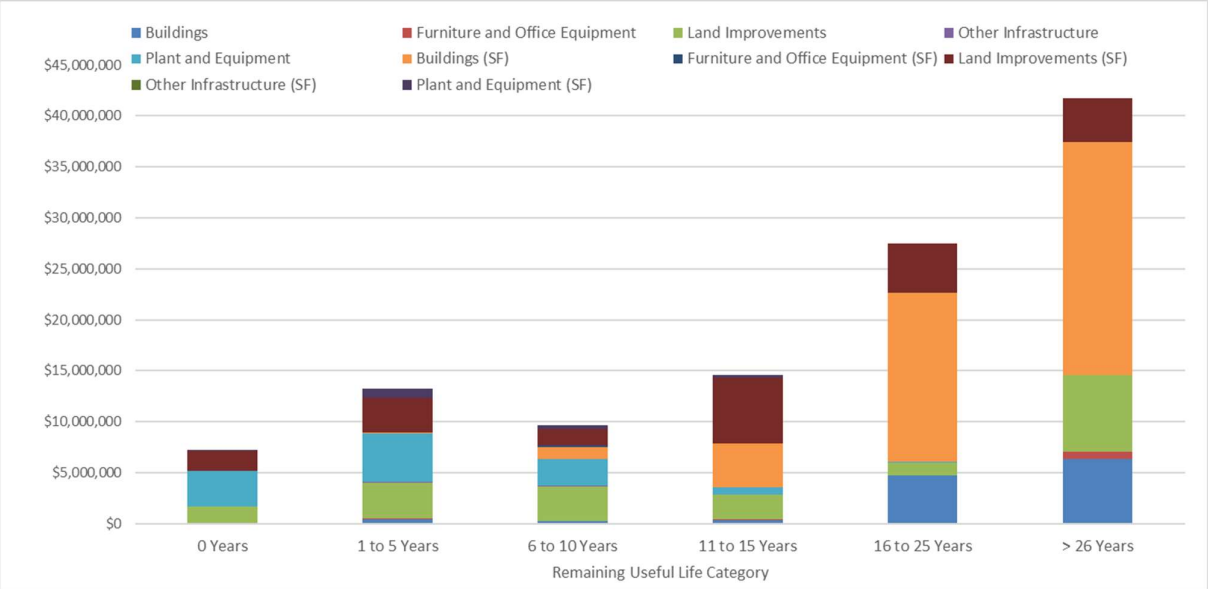

Figure 4-17 Community Facilities Sector Remaining Useful Life

From in Table 4-15 and Figure 4-17 there is a renewal back log of $ 7,164k in the Community Facilities Sector, with an additional $ 13,281k in value of assets that are due to reach the end of their useful life over the next five-year period. The Asset Sub-Class that comprises these is predominantly the Plant and Equipment assets which forms 50% by value of the renewal backlog and 36% by value of the assets that will reach the end of their useful life in the next five years.

4.5.4 Operational Buildings Sector

Presented in Table 4-16 and Figure 4-18 is the replacement value of the ASTC's Operational Buildings sector assets at the Asset Sub-Class level by the remaining useful life categories.

Table 4-16 Operational Buildings Sector Remaining Useful Life

Sector	Asset Sub-Class	Remaining Useful Life					
		0 Years	1 to 5 Years	6 to 10 Years	11 to 15 Years	16 to 25 Years	> 26 Years
Operational Building	Buildings	$5,451	$1,516,850	$341,499	$207,812	$4,385,282	$5,149,803
	Land Improvements	$0	$13,200	$0	$0	$0	$0
Solar	Other Infrastructure	$0	$0	$0	$0	$1,104,373	$7,557,602
Sector Total		**$5,451**	**$1,530,050**	**$341,499**	**$207,812**	**$5,489,655**	**$12,707,405**
Composition		**0.0%**	**7.5%**	**1.7%**	**1.0%**	**27.1%**	**62.7%**

Table 4-16 shows that overall, 10.3% of the value of the assets that form Operational Buildings asset portfolio are due to reach the end of their useful life over the next fifteen years.

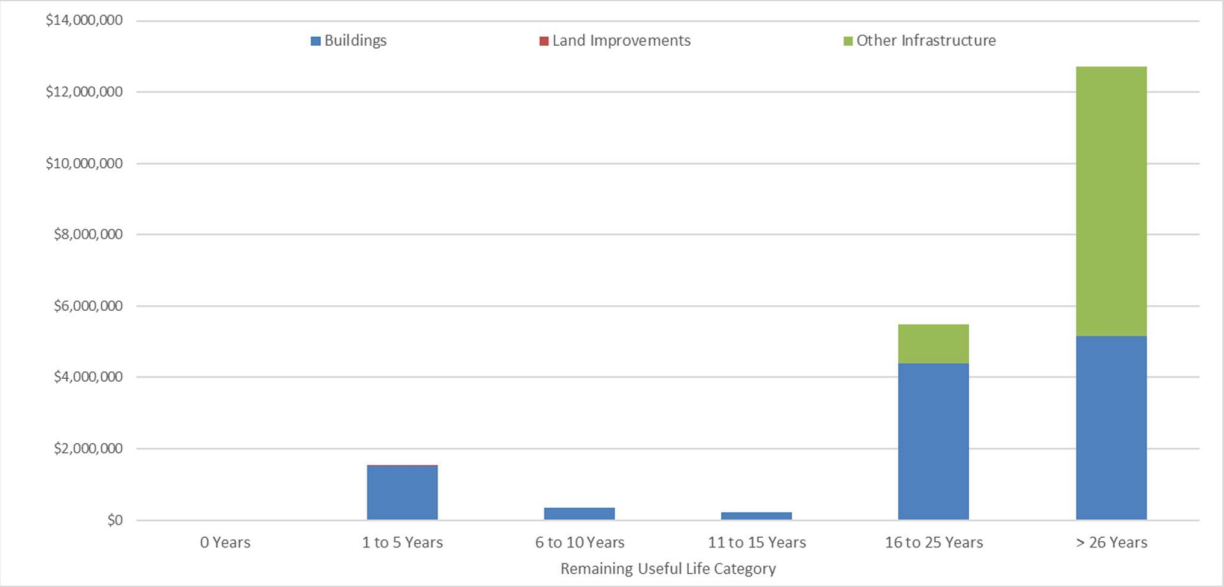

Figure 4-18 Operational Buildings Sector Remaining Useful Life

From in Table 4-16 and Figure 4-18 there is a renewal back log of $ 5k in the Operational Buildings Sector, with an additional $ 1,530k in value of assets that are due to reach the end of their useful life over the next five-year period. The Asset Sub-Class that comprises these is predominantly the Buildings assets which forms 100% by value of the renewal backlog and 99% by value of the assets that will reach the end of their useful life in the next five years.

4.6 Asset Criticality

The ASTC's 2019/2020 asset register did not contain any data fields that informed on the assets criticality. Thus, a high-level asset criticality rating was applied to each asset and a "high", "medium" and "low" criticality rating was assigned based on the asset type. The criticality ratings were sense checked to account for specific assets which were understood to be operationally critical to the ASTC. The asset criticality was assigned to assets based on our understanding of the assets that would be critical to the operational functionality of the ASTC to provide an indicative view across the asset portfolio. It is highly recommended that this analysis is reassessed once the criticality of the ASTC's infrastructure asset portfolio have been reassessed using the ASTC's risk management framework.

The criticality rating per Sector is summarised in the figures and tables below. Presented in Table 4-17 and Figure 4-19 is the total value of assets by Sector and their associated criticality rating. This indicates that the majority of the ASTC's infrastructure assets seem to be in the medium criticality rating.

Table 4-17 Criticality ratings of ASTC Infrastructure Portfolio at Sector Level

Sector	Criticality Rating			Total
	Low	Medium	High	
Roads	$1,409,459	$244,385,235	$1,331,945	$247,126,639
Stormwater	$0	$45,821,162	$0	$45,821,162
Landfill	$6,455,187	$9,642,088	$2,843,375	$18,940,650
Community Facilities	$9,141,285	$34,220,181	$1,429,306	$44,790,772
Sports Facilities	$11,975,923	$57,891,494	$15,402	$69,882,819
Operational Building	$13,200	$11,606,697	$0	$11,619,897
Solar	$0	$0	$1,104,373	$1,104,373
Total	**$28,995,054**	**$403,566,858**	**$6,724,400**	**$439,286,313**
Composition	**7%**	**92%**	**2%**	

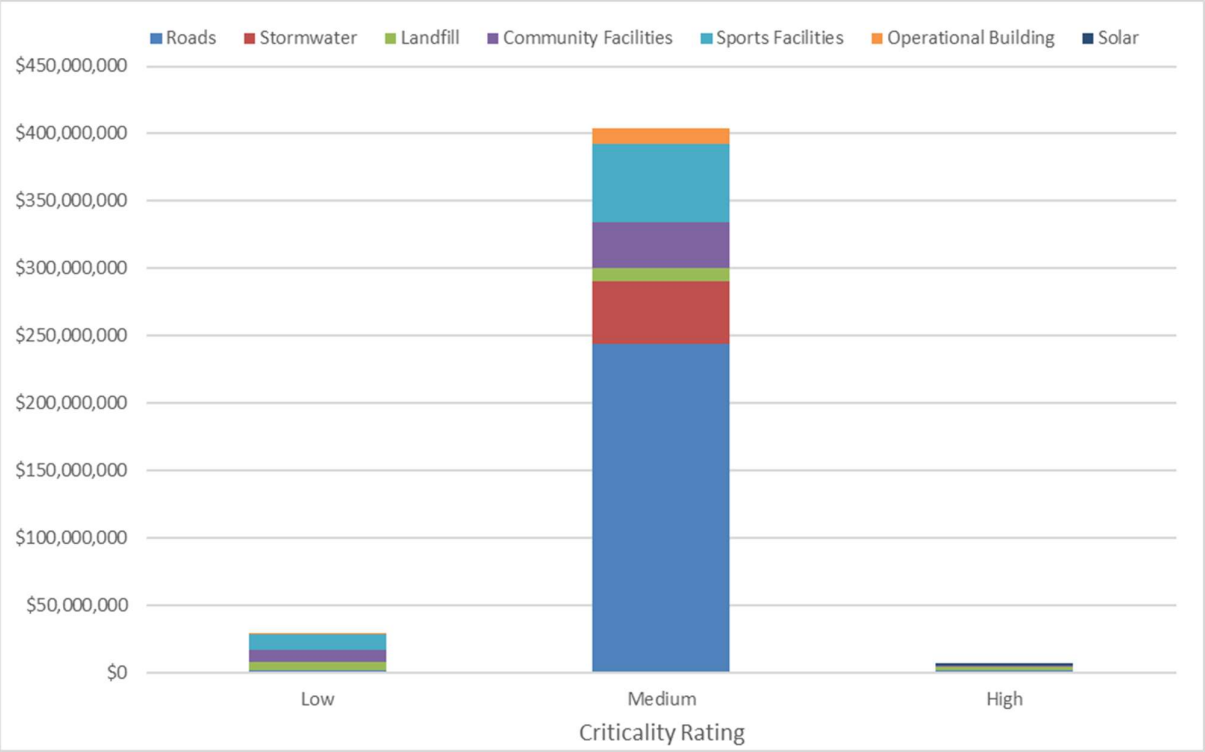

Figure 4-19 Criticality Ratings of ASTC Infrastructure Portfolio at Sector Level

Table 4-17 and Figure 4-19 shows that the Waste Management (Landfill) sector accounts for 42% by value of infrastructure assets with a high criticality rating, followed by the Community Facilities (including Sports Facilities) sector with 21% by value of assets with a high critical rating, and Roads & Stormwater sector with 20% by value of assets with a high critical rating.

4.6.1 Roads and Stormwater Sector

Presented in Table 4-18 and Figure 4-20 is the replacement value of the ASTC's Roads and Stormwater sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-18 Roads & Stormwater Criticality Ratings

Sector	Asset Sub-Class	Criticality Rating			Total
		Low	Medium	High	
Roads	Land Improvements	$1,353,011	$5,322,563		$6,675,575
	Other Infrastructure	$56,448	$55,705,488	$1,331,945	$57,093,881
	Plant and Equipment		$15,616		$15,616
	Sealed Roads		$179,717,783		$179,717,783
	Unsealed Roads		$3,623,784		$3,623,784
Stormwater	Stormwater Drains		$45,821,162		$45,821,162
Total		**$1,409,459**	**$290,206,397**	**$1,331,945**	**$292,947,801**
Composition		**0.5%**	**99.1%**	**0.5%**	

Table 4-18 shows that the significantly vast majority 99% of the assets by value, in the Roads and Stormwater sector seem to have a medium criticality rating and only small fraction ~0.5% are considered to have a low or high criticality rating.

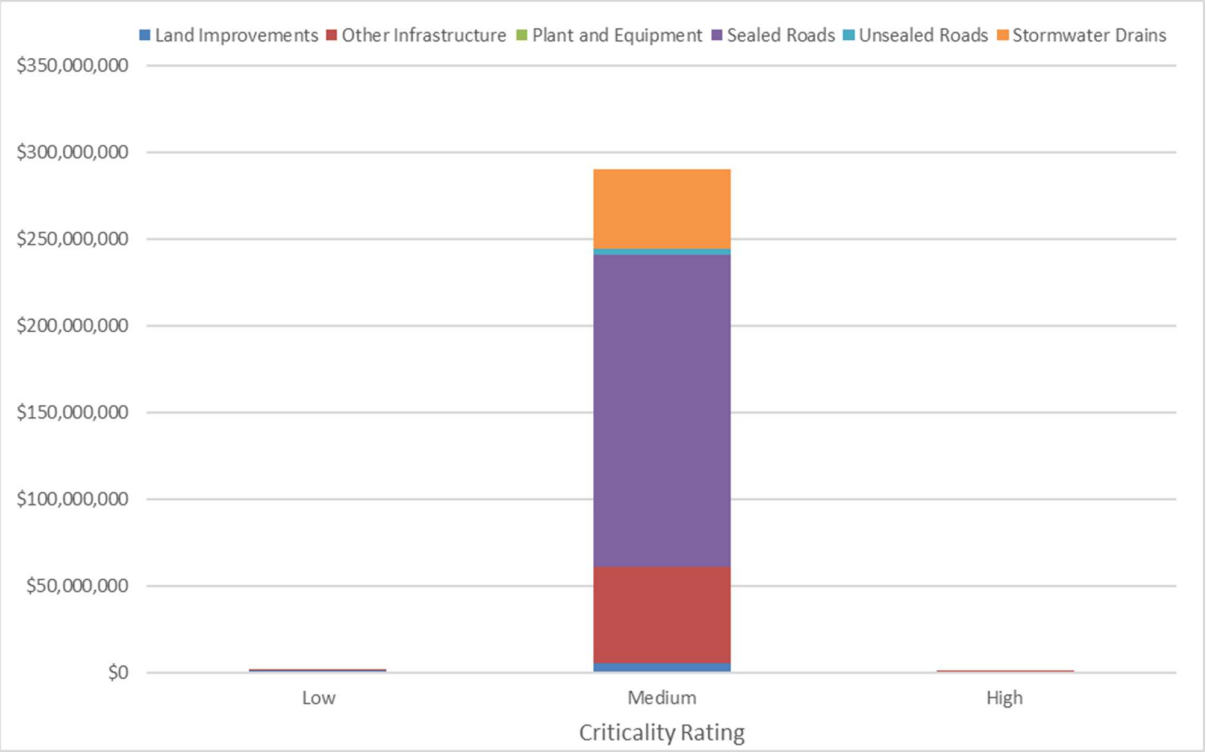

Figure 4-20 Roads & Stormwater Criticality ratings in Replacement Value by Asset Sub-Class

From Table 4-18 and Figure 4-20 the data suggests that in the Roads and Stormwater sector the assets that comprise the Sealed Roads Asset Sub-Class seems to form a significant portion of assets with a medium criticality rating (62% by value) and only the Other Assets Asset Sub-Class has assets with a high criticality rating.

4.6.2 Waste Management Sector

Presented in Table 4-19 and Figure 4-21 is the replacement value of the ASTC's Waste Management sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-19 Waste Management Criticality Ratings

Sector	Asset Sub-Class	Criticality Rating			Total
		Low	Medium	High	
Landfill	Buildings		$5,775,187	$1,146,100	$6,921,287
	Land Improvements	$6,132,397	$287,599	$128,055	$6,548,051
	Other Infrastructure		$204,837	$81,183	$286,021
	Plant and Equipment	$322,790	$3,219,553	$1,488,036	$5,030,379
	Stormwater Drains		$154,911		$154,911
Total		**$6,455,187**	**$9,642,088**	**$2,843,375**	**$18,940,650**
Composition		**34.1%**	**50.9%**	**15.0%**	

Table 4-19 shows that a minority, 15% of the assets by value, in the Waste Management sector seem to have a high criticality rating, with the majority 51% by value are considered to have a medium criticality rating.

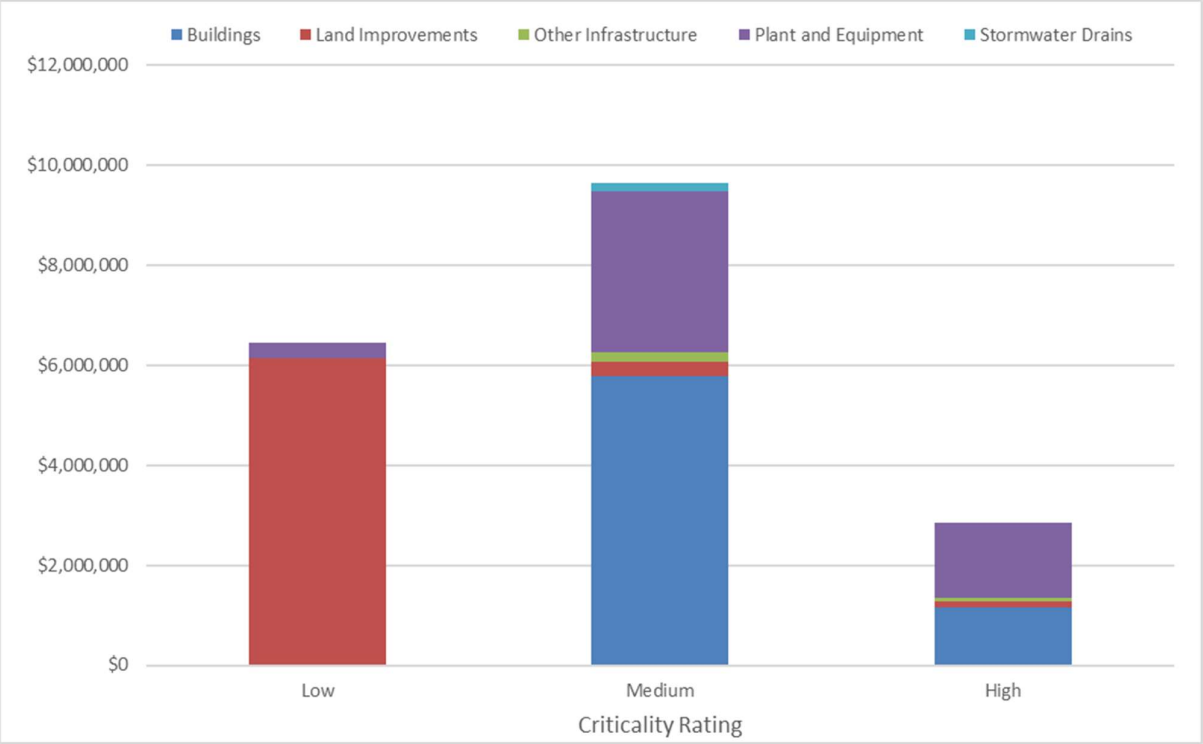

Figure 4-21 Waste Management Criticality ratings in Replacement Value by Asset Sub-Class

From Table 4-19 and Figure 4-21 the data suggests that in the Waste Management sector the assets that comprise the Plant and Equipment and Buildings Asset Sub-Class form a significant portion of assets with a high criticality rating (52% and 40% by value, respectively).

4.6.3 Community Facilities Sector

Presented in Table 4-20 and Figure 4-22 is the replacement value of the ASTC's Community Facilities sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-20 Community Facilities Criticality Ratings

Sector	Asset Sub-Class	Criticality Rating			Total
		Low	Medium	High	
Community Facilities	Buildings		$12,109,055		$12,109,055
	Furniture and Office Equipment		$754,567		$754,567
	Land Improvements	$7,799,074	$11,227,210	$895,446	$19,921,730
	Other Infrastructure	$49,858	$49,313		$99,170
	Plant and Equipment	$1,292,354	$10,080,037	$533,860	$11,906,251
Sports Facilities	Buildings		$44,755,170		$44,755,170
	Furniture and Office Equipment		$216,217		$216,217
	Land Improvements	$10,856,524	$12,522,442		$23,378,966
	Other Infrastructure		$4,250		$4,250
	Plant and Equipment	$1,119,399	$393,415	$15,402	$1,528,216
Total		**$21,117,208**	**$92,111,675**	**$1,444,708**	**$114,673,592**
Composition		**18.4%**	**80.3%**	**1.3%**	

Table 4-20 shows that the majority 80% of the assets by value, in the Community Facilities sector seem to have a medium criticality rating and only small fraction ~1.3% are considered to have a high criticality rating.

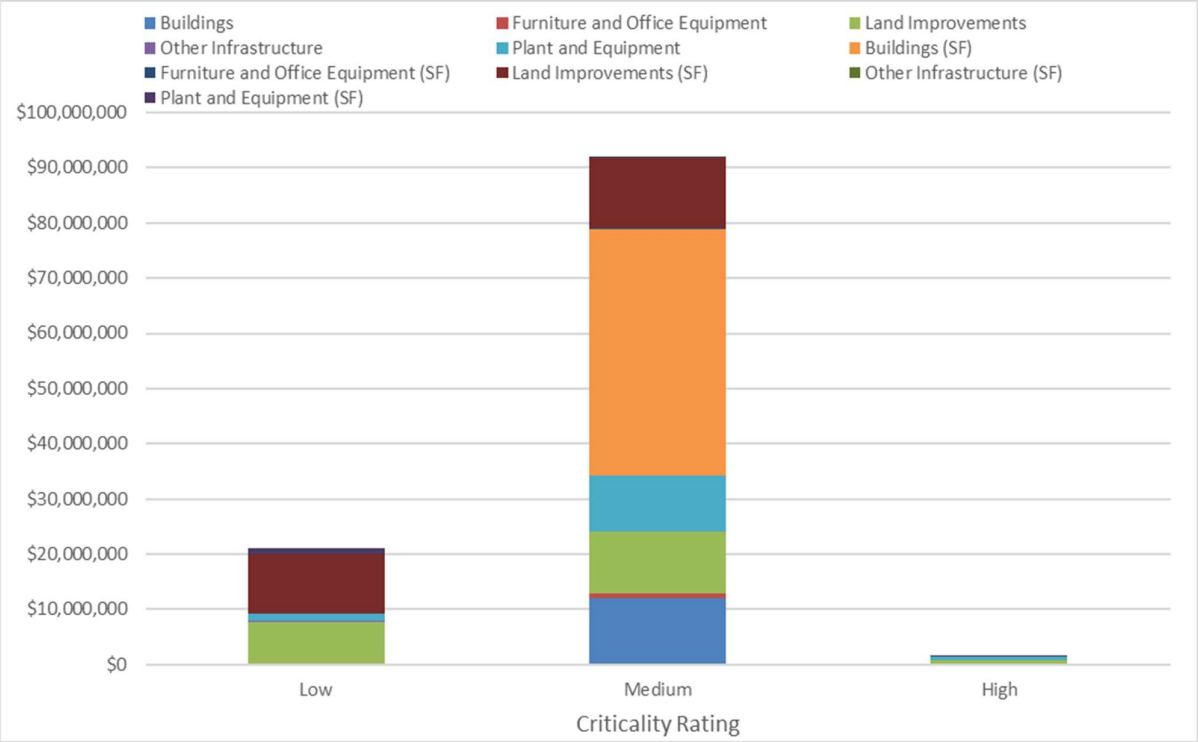

Figure 4-22 Community Facilities Criticality ratings in Replacement Value by Asset Sub-Class

From Table 4-20 and Figure 4-20 the data suggests that in the Community Facilities sector the assets that comprise the Land Improvements Asset Sub-Class seems to form a significant portion of assets with a high criticality rating (62% by value).

4.6.4 Operational Buildings Sector

Presented in Table 4-21 and Figure 4-23 is the replacement value of the ASTC's Operational Buildings sector assets at the Asset Sub-Class level by the condition grade ratings.

Table 4-21 Operational Buildings Criticality Ratings

Sector	Asset Sub-Class	Criticality Rating			Total
		Low	Medium	High	
Operational Building	Buildings		$11,606,697		$11,606,697
	Land Improvements	$13,200			$13,200
Solar	Other Infrastructure			$1,104,373	$1,104,373
Sector Total		**$13,200**	**$11,606,697**	**$1,104,373**	**$12,724,270**
Composition		**0.1%**	**91.2%**	**8.7%**	

Table 4-21 shows that the vast majority 91% of the assets by value, in the Operational Buildings sector seem to have a medium criticality rating and only 9% are considered to have a high criticality rating.

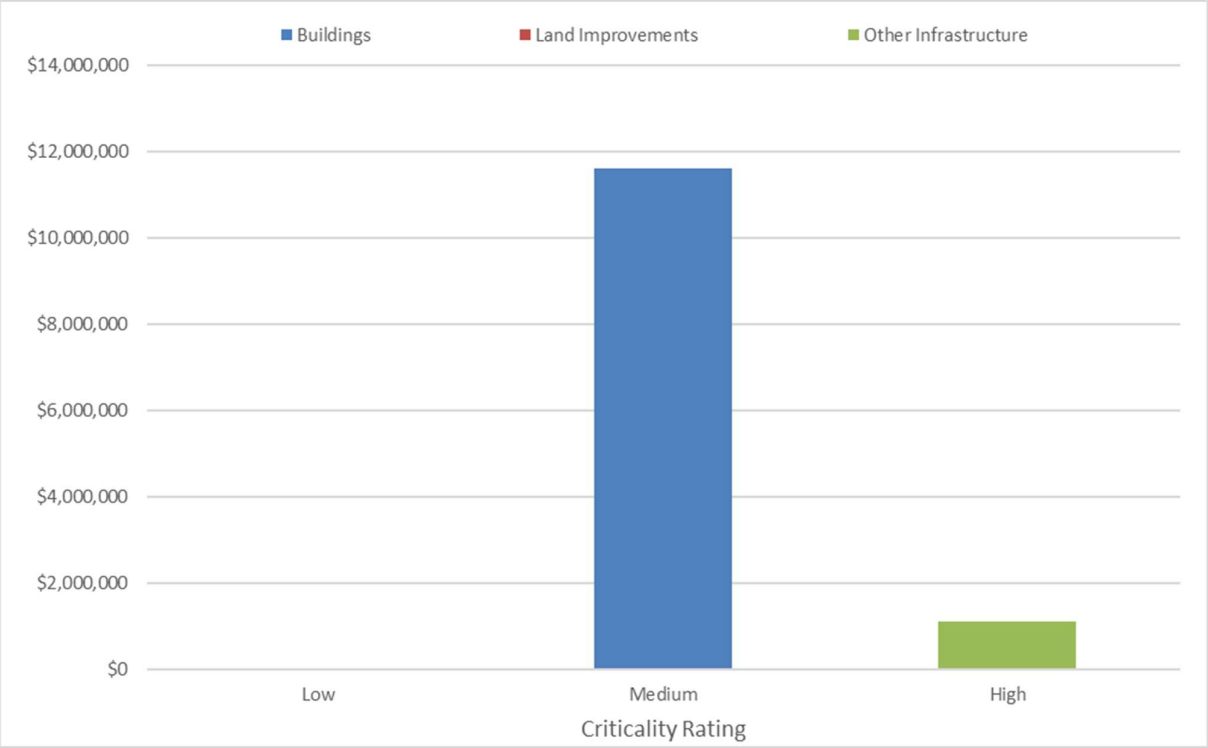

Figure 4-23 Operational Buildings Criticality ratings in Replacement Value by Asset Sub-Class

From Table 4-21 and Figure 4-23 the data suggests that in the Operational Buildings sector the assets that comprise the Other Assets Asset Sub-Class form all the assets with a high criticality rating (100% by value).

4.7 Asset Creation

New works are those that create a new asset that did not previously exist or works which will 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.

4.7.1 Summary of Future Upgrade / New Assets Expenditure

The projects identified for future upgrades or the creation of new capital works program are based on the information found within the 2018 asset management plans for Transport Infrastructure and Buildings and Land Improvements, which are summarised in Appendix 2. The projects identified need to be confirmed and ratified with ASTC, and a summary of the projects identified for the creation of new assets expenditures, or future upgrades for the ASTC are presented in Figure 4-24. The forecast asset addition expenditure in each financial year are in current dollar values.

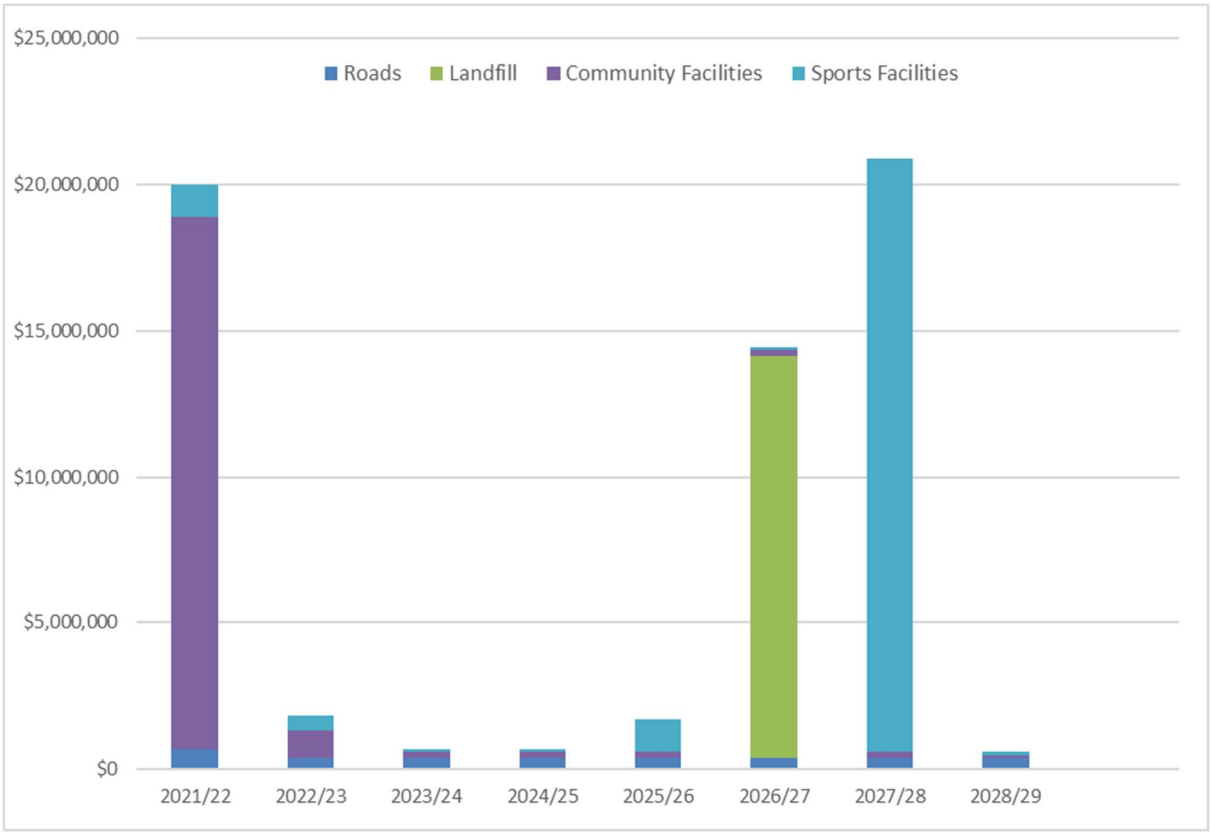

Figure 4-24 Projected Capital Upgrade / New Asset Expenditure

A key asset creation project that has been identified is the preparation of Cell 5 (A and B) at the Regional Waste Management facility, to extend the life of the landfill site which is expected to be carried out during the 2026/27 financial year and is estimated to cost $ 13.75 million.

Acquiring these new assets will commit the ASTC to funding of the ongoing operations, maintenance, and renewal costs, over the period that the services provided from the assets are required.

4.8 Operations and Maintenance

Operations include regular activities to provide services such as safety and amenity, e.g. cleaning, street sweeping, and utilities costs but does not typically include staff salaries. Whilst maintenance includes all activities necessary for retaining an asset in an operating (appropriate) service condition to ensure the assets is able to provide the required services over the entire expected useful life of the asset. This includes routine or scheduled maintenance and corrective maintenance activities along with regular ongoing day-to-day work necessary to ensure the assets are able to provide the levels of service required.

The operations and maintenance (O&M) expenditure required for the infrastructure assets was determined from the data available within the Revised Asset Register for ASTC's infrastructure assets (please see Appendix 1). Using industry benchmarks, best practice and typical percentages of O&M costs based on the asset's replacement value (CRC) for the different Asset Sub-classes, sourced where feasible from similar regional council organisations, to provide the relevant and reliable estimates. The resultant O&M expenditure derived was then checked against the available data on historic O&M costs and validated with key ASTC stakeholders. The resultant annual O&M expenditure developed by sector is presented in Table 4-22 and Figure 4-25.

Table 4-22 Annual Operational & Maintenance Expenditure

Sector	Replacement Costs (CRC)	O&M Expenditure	% of CRC	% of Total
Roads	$247,126,639	$4,242,870	1.7%	32.2%
Stormwater	$45,821,162	$692,883	1.5%	5.3%
Landfill	$18,940,650	$1,667,588	8.8%	12.7%
Community Facilities	$69,882,819	$2,143,433	3.1%	16.3%
Sports Facilities	$44,790,772	$3,843,849	8.6%	29.2%
Operational Building	$11,619,897	$548,360	4.7%	4.2%
Solar	$1,104,373	$34,342	3.1%	0.3%
Grand Total	**$439,286,313**	**$13,173,324**	**3.0%**	

From Table 4-22 it can be seen that the ASTC will require $13,173,324 per annum to operate and maintain the 3609 infrastructure assets in their asset portfolio. This represents 3% of the replacement costs of the infrastructure asset portfolio of the ASTC.

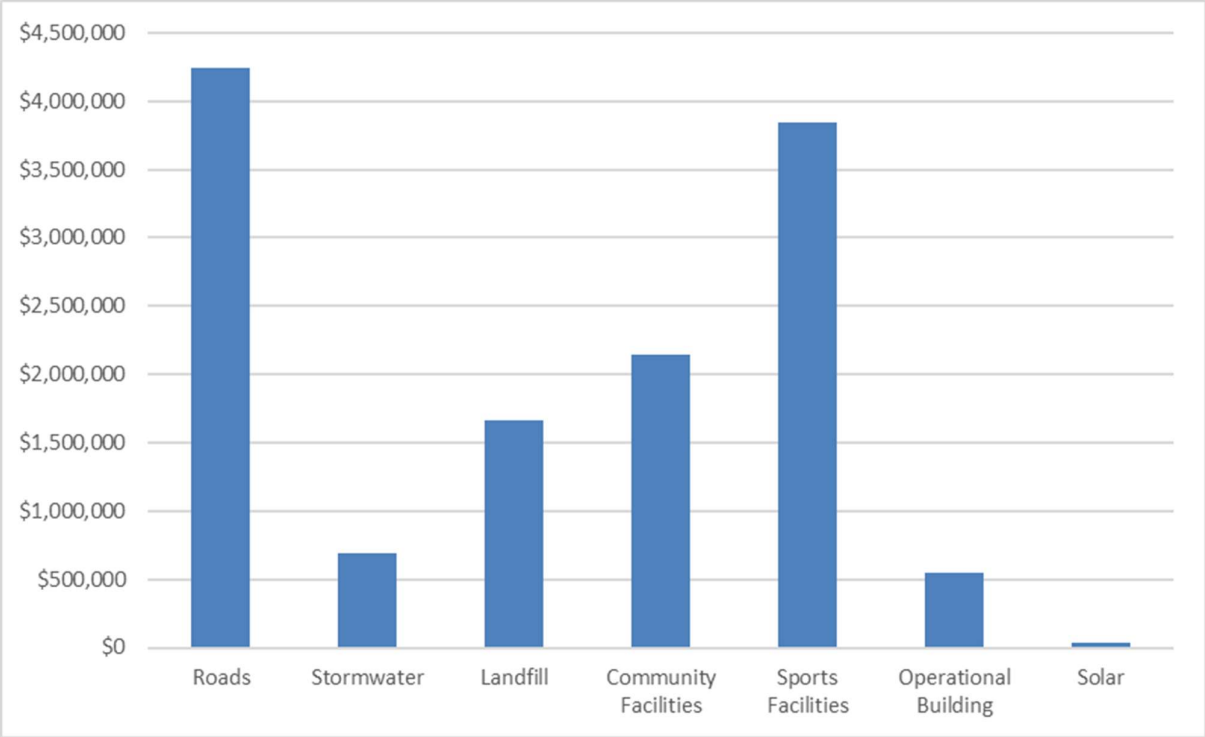

Figure 4-25 Annual Operational & Maintenance Expenditure by Sector

4.8.1 Roads and Stormwater Sector

Presented in Table 4-23 and Figure 4-26 is the annual O&M expenditure required for the infrastructure assets in the Roads and Stormwater sector at the Asset Sub-Class level.

Table 4-23 Roads & Stormwater Annual Operational & Maintenance Expenditure

Sector	Asset Sub-Class	Replacement Costs (CRC)	O&M Expenditure	% of CRC	% of Total
Roads	Land Improvements	$6,675,575	$203,916	3.1%	4.1%
	Other Infrastructure	$57,093,881	$1,820,977	3.2%	36.9%
	Plant and Equipment	$15,616	$3,419	21.9%	0.1%
	Sealed Roads	$179,717,783	$2,001,627	1.1%	40.6%
	Unsealed Roads	$3,623,784	$212,931	5.9%	4.3%
Stormwater	Stormwater Drains	$45,821,162	$692,883	1.5%	14.0%
Total		**$292,947,801**	**$4,935,752**	**1.7%**	

Table 4-23 shows that the overall O&M expenditure for the Roads and Stormwater sector should be around $ 4,935,752 per annum which represents 1.7% of the total replacement value of the assets of the Roads and Stormwater sector.

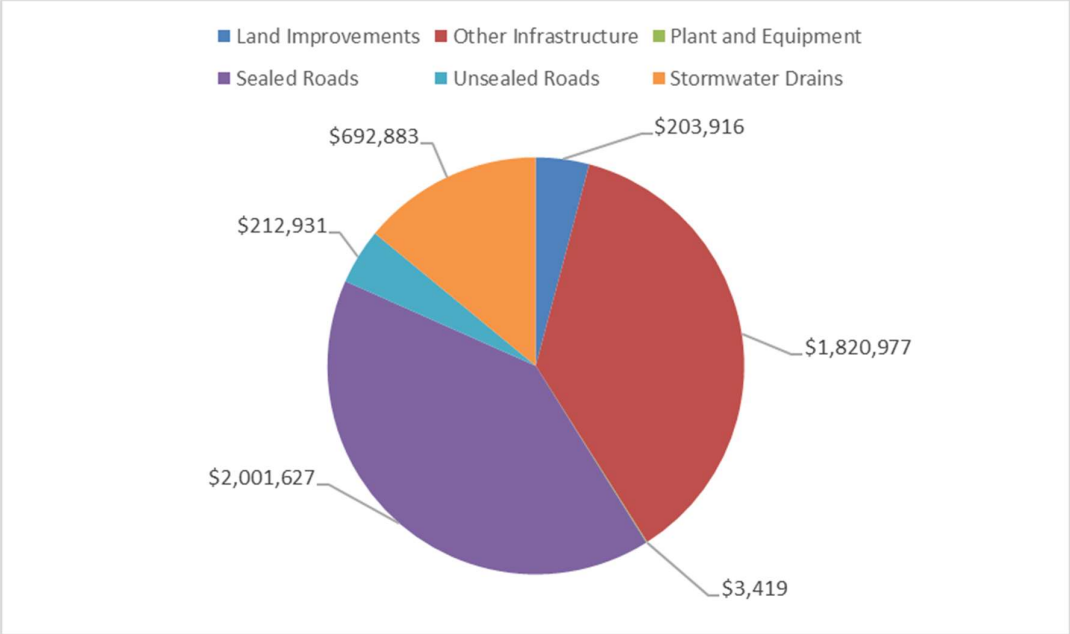

Figure 4-26 Roads & Stormwater Annual Operational & Maintenance Expenditure by Asset Sub-Class

From Table 4-23 and Figure 4-26 the data suggests that in the Roads and Stormwater sector the assets that comprise the Sealed Roads and Other Infrastructure Asset Sub-Class from the majority, 41% and 37% respectively, of the O&M expenditure for the Roads and Stormwater sector.

4.8.2 Waste Management Sector

Presented in Table 4-24 and Figure 4-27 is the annual O&M expenditure required for the infrastructure assets in the Waste Management sector at the Asset Sub-Class level.

Table 4-24 Waste Management Annual Operational & Maintenance Expenditure

Sector	Asset Sub-Class	Replacement Costs (CRC)	O&M Expenditure	% of CRC	% of Total
Landfill	Buildings	$6,921,287	$316,534	4.6%	19.0%
	Land Improvements	$6,548,051	$238,372	3.6%	14.3%
	Other Infrastructure	$286,021	$8,894	3.1%	0.5%
	Plant and Equipment	$5,030,379	$1,101,445	21.9%	66.1%
	Stormwater Drains	$154,911	$2,342	1.5%	0.1%
Total		**$18,940,650**	**$1,667,588**	**8.8%**	

Table 4-24 shows that the overall O&M expenditure for the Waste Management sector should be around $ 1,667,588 per annum which represents 8.8% of the total replacement value of the assets of the Waste Management sector.

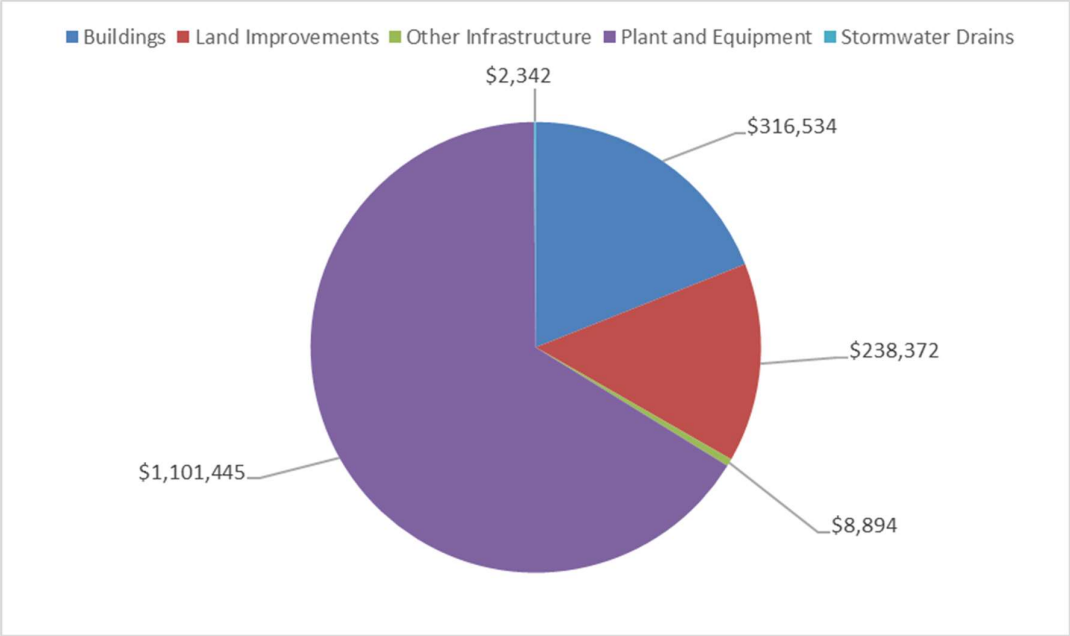

Figure 4-27 Waste Management Annual Operational & Maintenance Expenditure by Asset Sub-Class

From Table 4-24 and Figure 4-27 the data suggests that in the Waste Management sector the assets that comprise the Plant and Equipment Asset Sub-Class from the majority, 66%, of the O&M expenditure for the Waste Management sector.

4.8.3 Community Facilities Sector

Presented in Table 4-25 and Figure 4-28 is the annual O&M expenditure required for the infrastructure assets in the Community Facilities sector at the Asset Sub-Class level.

Table 4-25 Community Facilities Annual Operational & Maintenance Expenditure

Sector	Asset Sub-Class	Replacement Costs (CRC)	O&M Expenditure	% of CRC	% of Total
Community Facilities	Buildings	$12,109,055	$396,932	3.3%	6.6%
	Furniture and Office Equipment	$754,567	$165,219	21.9%	2.8%
	Land Improvements	$19,921,730	$671,639	3.4%	11.2%
	Other Infrastructure	$99,170	$3,084	3.1%	0.1%
	Plant and Equipment	$11,906,251	$2,606,976	21.9%	43.5%
Sports Facilities	Buildings	$44,755,170	$1,045,617	2.3%	17.5%
	Furniture and Office Equipment	$216,217	$47,343	21.9%	0.8%
	Land Improvements	$23,378,966	$715,725	3.1%	12.0%
	Other Infrastructure	$4,250	$132	3.1%	0.0%
	Plant and Equipment	$1,528,216	$334,616	21.9%	5.6%
Total		**$114,673,592**	**$5,987,282**	**5.2%**	

Table 4-25 shows that the overall O&M expenditure for the Community Facilities sector should be around $ 5,987,282 per annum which represents 5.2% of the total replacement value of the assets of the Community Facilities sector.

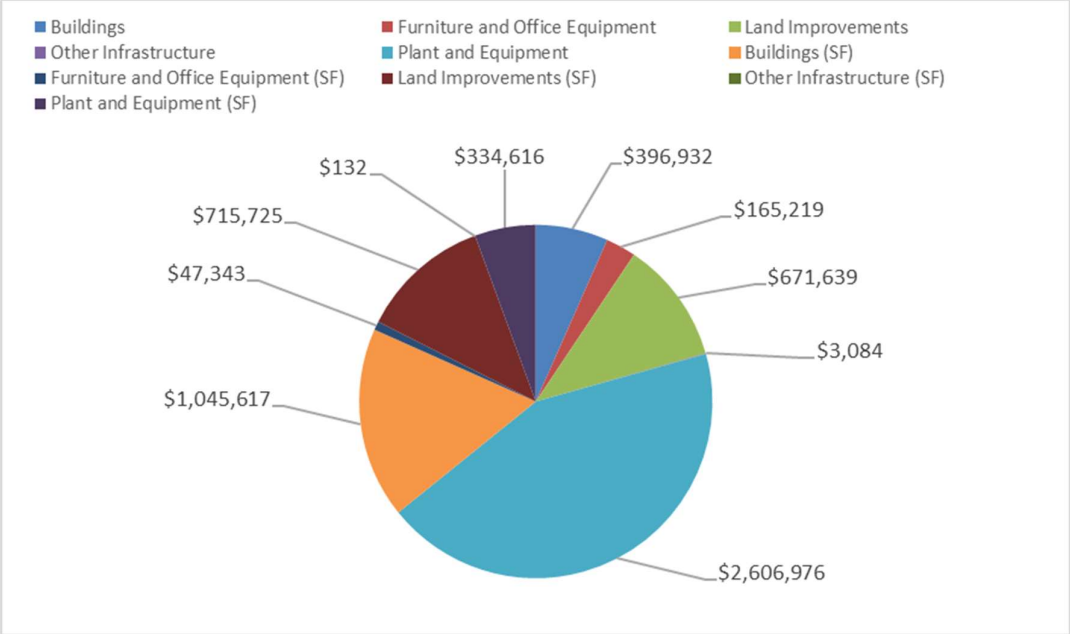

Figure 4-28 Community Facilities Annual Operational & Maintenance Expenditure by Asset Sub-Class

From Table 4-25 and Figure 4-28 the data suggests that in the Community Facilities sector the assets that comprise the Plant and Equipment Asset Sub-Class from the majority, 49%of the O&M expenditure for the Community Facilities sector.

4.8.4 Operational Buildings Sector

Presented in Table 4-26 and Figure 4-29 is the annual O&M expenditure required for the infrastructure assets in the Operational Buildings sector at the Asset Sub-Class level.

Table 4-26 Operational Buildings Annual Operational & Maintenance Expenditure

Sector	Asset Sub-Class	Replacement Costs (CRC)	O&M Expenditure	% of CRC	% of Total
Operational Building	Buildings	$12,109,055	$396,932	3.3%	32.2%
	Land Improvements	$754,567	$165,219	21.9%	13.4%
Solar	Other Infrastructure	$19,921,730	$671,639	3.4%	54.4%
Sector Total		**$32,785,351**	**$1,233,789**	**3.8%**	

Table 4-26 shows that the overall O&M expenditure for the Operational Buildings sector should be around $ 1,233,789 per annum which is 3.8% of the total replacement value of the assets of the Operational Buildings sector.

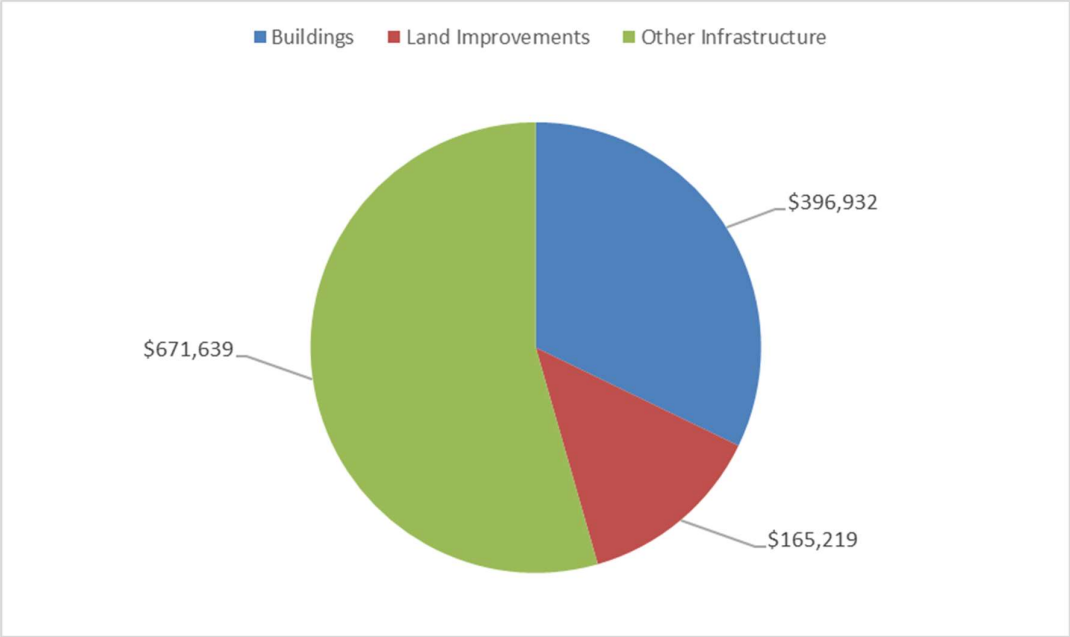

Figure 4-29 Operational Buildings Annual Operational & Maintenance Expenditure by Asset Sub-Class

From Table 4-26 and Figure 4-29 the data suggests that in the Operational Buildings sector the assets that comprise the Other Infrastructure Asset Sub-Class from the majority, 54% of the O&M expenditure for the Operational Buildings sector.

4.9 Asset Disposals

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Any assets decommissioned or disposed of should be further reinvestigated to determine whether the required levels of service will be impacted or what other options are available for to provide the required services through alternate delivery options, if any.

The only asset disposal project that was identified for the ASTC over the next ten years is the project to cap Cells 1 to 4 at the Regional Waste Management facility, which is expected to be carried out during the 2027/2028 financial year, once the preparations for Cell 5 have been completed, and is estimated to cost $ 8.25 million.

4.10 Recommendations

Asset information is foundational to asset management and although the ASTC Asset Register is currently the best source of information on the infrastructure asset portfolio, there is uncertainty around the accuracy and reliability of information within the asset register. It is understood that the asset register is no longer up to date and may contain asset records that no longer exist. In addition, the current structure of the Asset Register (asset attributes and asset hierarchy classification) does not meet the needs of the key asset management enabling processes. It is recommended that the ASTC considers redeveloping its infrastructure Asset Register, including:

- Developing a fit-for-purpose asset classification hierarchy.
- Reviewing and amending the asset attributes to be captured for each asset within the Asset Register to ensure that the required asset information to support decision-making is available. This would include defining gradation scales for condition, utilisation, criticality, and operating environment.
- Re-compilation of the asset register ideally based on a full physical verification of the asset base, to inspect and capture data for all assets the associated asset information required (asset attributes for assets as per the asset hierarchy classification).
- Review the key accountabilities and governance structures for the asset management policy, processes and procedures to ensure that the asset information is utilised and regularly updated and maintained.

5 Risk Management

5.1 Risk Management Framework

Risk management is a tool which identifies strategic and operational threats related to corporate objectives and enables the development of strategies to mitigate adverse consequences. It is an iterative process consisting of steps that, when undertaken in sequence, enable continuous improvement of decision making and facilitate continuous improvement in performance.

Alice Springs Town Council (ASTC) is committed to managing risk and will align with AS ISO 31000:2018 Risk Management Standard as the minimum standard. ASTC aims to ensure that the potential for exposure to risk is identified, risks are assessed for severity, quality of internal control mechanisms are evaluated, treatment plans are implemented, and risks are monitored, managed and reported upon.

Objectives of the Risk Management Framework are to:

- Provide transparent and formal oversight of the risk and control environment, enabling effective decision making
- Enhance risk versus return, within our risk appetite
- Enhance organisational resilience
- Identify and provide for the continuity of critical operations
- Align with Risk Management Standard AS ISO 31000:2018
- Define Council's tolerance to risk and communicate it throughout Council
- Outline roles and responsibilities for risk management within Council
- Optimise achievement of our vision, values, strategies, goals and objectives
- Embed appropriate and effective controls to mitigate risk
- Achieve effective

Risk Management will form part of strategic, operational, departmental and project management responsibilities and where possible, be incorporated within the council's Strategic and Municipal Plans.

The risk management process for the framework is depicted in Figure 5-1.

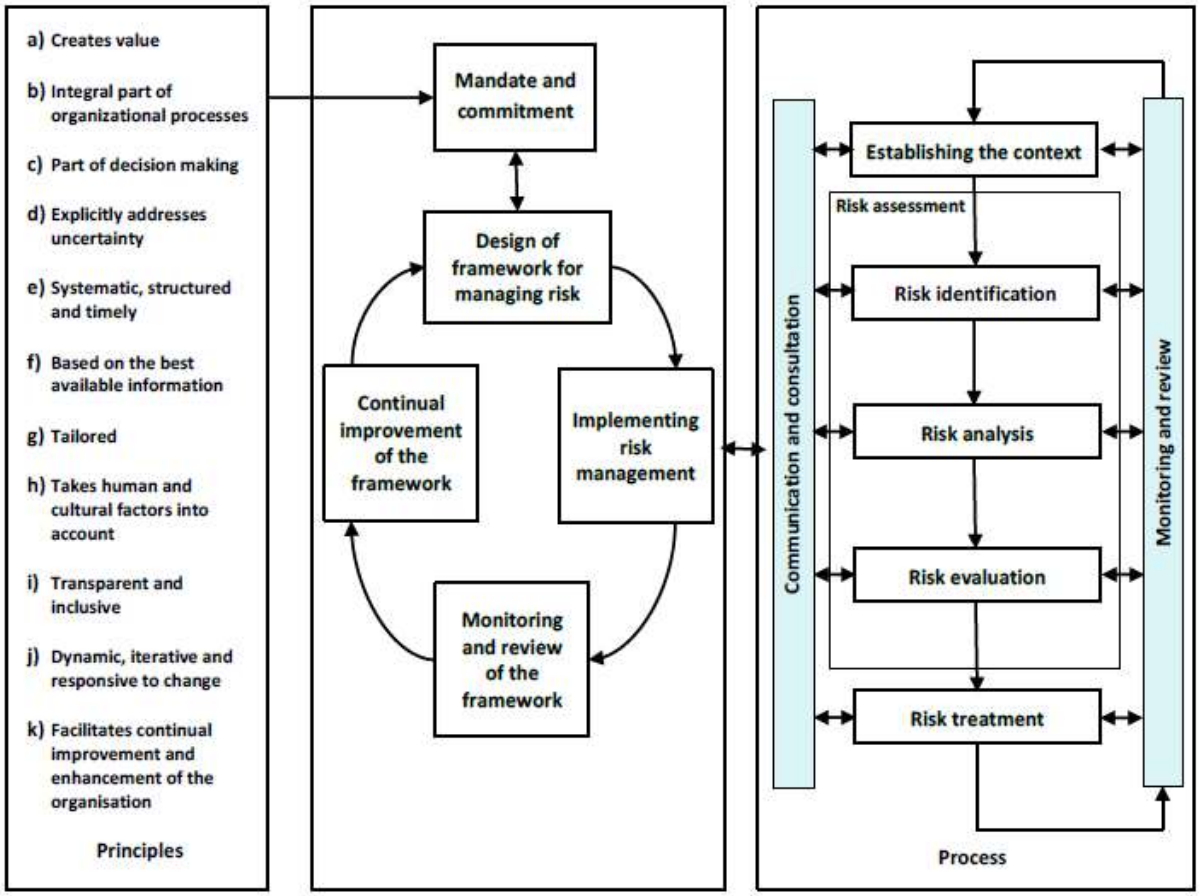

Figure 5-1 Risk Management Process (AS ISO 31000:2018)

5.2 Risk Assessment

5.2.1 Asset Risks

An assessment of risks associated with service delivery has identified the critical risks that will result in significant loss, 'financial shock' or a reduction in service.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings as identified in the risk management plan of each asset category. The risks, their treatment plan and associated treatment cost is presented in Table 5-1. These risks and costs are reported to management and Council.

Table 5-1 Asset Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Treatment Cost
Road seal, pavement & sub-base	Vehicle breaking through the road surface due to sub surface absorption of water	H	Place weight restrictions on identified roads Improve verge drainage to remove water away from the road Traffic management considerations	Staff time Staff time
Road seal	Pavement failure and potholes causing accidents and vehicle damage	H	Continued proactive patching and repair maintenance. Implement mobile refined condition reporting to assist in defect identification	Staff time Contractors Neat Street software
Road seals and pavements	Inadequate reinstatement of service trenches by Utility providers leading to seal and pavement failures	VH	Develop specification for reinstatement works. Introduce a requirement for Utility providers to obtain road opening permits before carrying out the Work and conducting inspections prior to accepting reinstated works back. Impose a "bond" on Utility providers comparable to the cost of reinstating a service trench to appropriate condition.	Staff time
Footpaths	Litigation through trip hazards	H	Increase length of formed footpaths Increase routine maintenance to repair failures	Contractors Staff time
Foot and Cycle paths	Increase in surface cracking resulting from tree roots. Expansion and contraction of concrete	H	Introduce a regular inspection regime Repair cracks as required Remove offending trees	Staff time Contractors
Fire safety equipment and electrical infrastructure	Failure results in buildings not being safe for occupation	H	Maintenance repairs in accordance with Australian Standards and Essential safety Provisions	Staff time Contractors

5.2.2 Non-Asset Risks

The critical risks, their treatment plan and associated treatment cost for the non-asset risks is presented in Table 5-2**Error! Reference source not found.**. These risks and costs are reported to management and Council.

Table 5-2 Critical Non-Asset Risk and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Treatment Cost
Natural Disaster	Damage to building infrastructure as a result of major storm events / natural disaster	H	Seek assistance from ither tiers of government, which relies on Natural Disaster declarations	Staff time
Storm and flood damage	Damage to infrastructure as a result of major storm events	H	Seek assistance from other tiers of government, which relies on Natural Disaster declarations	Staff time Contractor's Cost
Injury sustained whilst work is occurring to renew or replace a building asset	Major	VH	Contractor management procedures Regular site inspections and monitoring Construction risk assessments	Staff time Contractors
Play equipment	Injury or incident to public using play equipment Fall from play equipment	H, VH	Conduct regular safety inspection Install signage on major play equipment displaying recommended age. Check what other Councils have used	Staff time Contractors
Playground area	Child runs onto road adjacent play area	H	Identify playground adjacent to roads. Assess priority for fencing. Make provision in annual budget	Staff Time
Asset renewals not funded when required	Conditions will deteriorate and funding shortfall grows due to higher cost renewal treatments being required	VH	Limited funding available requires needs to be directed to highest priority areas, by utilising road hierarchy, condition data, and priorities identified in the 5-year road seal program	Staff time

5.3 Resilience Approach

Currently there are no identified asset management resilience measure for the ASTC. It is recommended that resilience measures based on asset monitoring and review procedures be developed. Which should include identification of threats and hazards, resilience assessments and identified improvements and/or interventions.

5.4 Service and Risk Trade-offs

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

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years due to budget constraints. Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. The present funding levels are insufficient to continue to provide existing services at current levels in the medium term.

The main services consequences are:

- Reduction in service levels below community expectations.
- Degradation of equipment and infrastructure due to lack of regular maintenance.
- Risk of injury due to the degradation/assets non-compliant to the standard.
- Possible liability for Council.

The operations and maintenance activities and capital projects that cannot be undertaken may also maintain or create risk consequences.

5.5 Recommendations

It is recommended that the ASTC should:

- Assess the asset criticality of its infrastructure portfolio based on the criticality framework developed.
- Compile and maintain a risk register for asset and non-asset risks on its infrastructure assets.
- Develop resilience measures based on asset monitoring and review procedures.

6 Financial Summary

6.1 Introduction

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

6.2 Financial Projections

The financial projections for the infrastructure assets of the ASTC are based on the funding required to address the following requirements:

- Service Backlogs – Funding required to address a lack of service provision or an inadequate level of service being provided. No Service backlogs were identified in this study.
- Growth – This is the funding that would be required to address the increase in infrastructure assets due to a growth in the population and thus demand for assets. No growth was anticipated for ASTC; thus, no additional infrastructure assets have been identified to address Growth.
- Condition Backlogs – This is the funding required to address assets in a “poor” and “very poor” condition to ensure that the assets can provide the level of service required. Considering the nature of infrastructure assets and the projects that will be required to address the condition backlogs, the condition backlog costs were spread over three financial years (i.e. over FY2021/22, 2022/23 and 2023/24).
- Renewals – This is the replacement or full refurbishment of assets that have reach the end of their useful life. Yearly renewals were identified based on the useful remaining life of the assets. This will exclude any assets that were identified as forming part of the Condition Backlog.
- In addition, all renewals required in Year 0 form the Renewal Backlog, which due to the nature of infrastructure assets and the projects required to remediate the assets, the costs of the Renewal Backlog was spread over three financial years (i.e. over FY2021/22, 2022/23 and 2023/24).
- Additions – These are projects that were identified from the future “upgrade or new asset creation program” referenced in Appendix 2 (derived from information provided in the 2018 Transport Infrastructure and Buildings and Land Improvement AMPs), that would result in new assets being created. These projects would need to be confirmed and ratified by ASTC.
- Disposal – These are projects that would be required to safely dispose of infrastructure assets.
- O&M – This is the annual operation and maintenance funding that would be required to ensure that the assets provide the required level of service and will be able to provide the required level of service throughout the assets expected useful life.

In the following sections, the funding requirements identified in this study are presented for each of the sectors along with a summary of all the funding requirements identified for the infrastructure assets of the ASTC.

6.2.1 Roads and Stormwater Sector

The funding requirement projections for the Roads infrastructure assets over the next ten financial years is presented in Table 6-1 and Figure 6-1. From Table 6-1 it can be seen that the majority of the forecast budget required for the Roads is to address the O&M costs.

Table 6-1 Financial Projections Yearly Profile for Roads Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M	Total
2021/22	$528,024	$109,616	$187,610	$700,000	$0	$4,242,870	$5,768,120
2022/23	$528,024	$109,616	$6,257	$400,000	$0	$4,242,870	$5,286,767
2023/24	$528,024	$109,616	$29,400	$400,000	$0	$4,242,870	$5,309,910
2024/25	$0	$0	$414,802	$400,000	$0	$4,242,870	$5,057,672
2025/26	$0	$0	$317,952	$400,000	$0	$4,242,870	$4,960,822
2026/27	$0	$0	$45,910	$400,000	$0	$4,242,870	$4,688,780
2027/28	$0	$0	$210,409	$400,000	$0	$4,242,870	$4,853,279
2028/29	$0	$0	$7,708	$400,000	$0	$4,242,870	$4,650,578
2029/30	$0	$0	$189,818	$0	$0	$4,242,870	$4,432,688
2030/31	$0	$0	$189,625	$0	$0	$4,242,870	$4,432,495

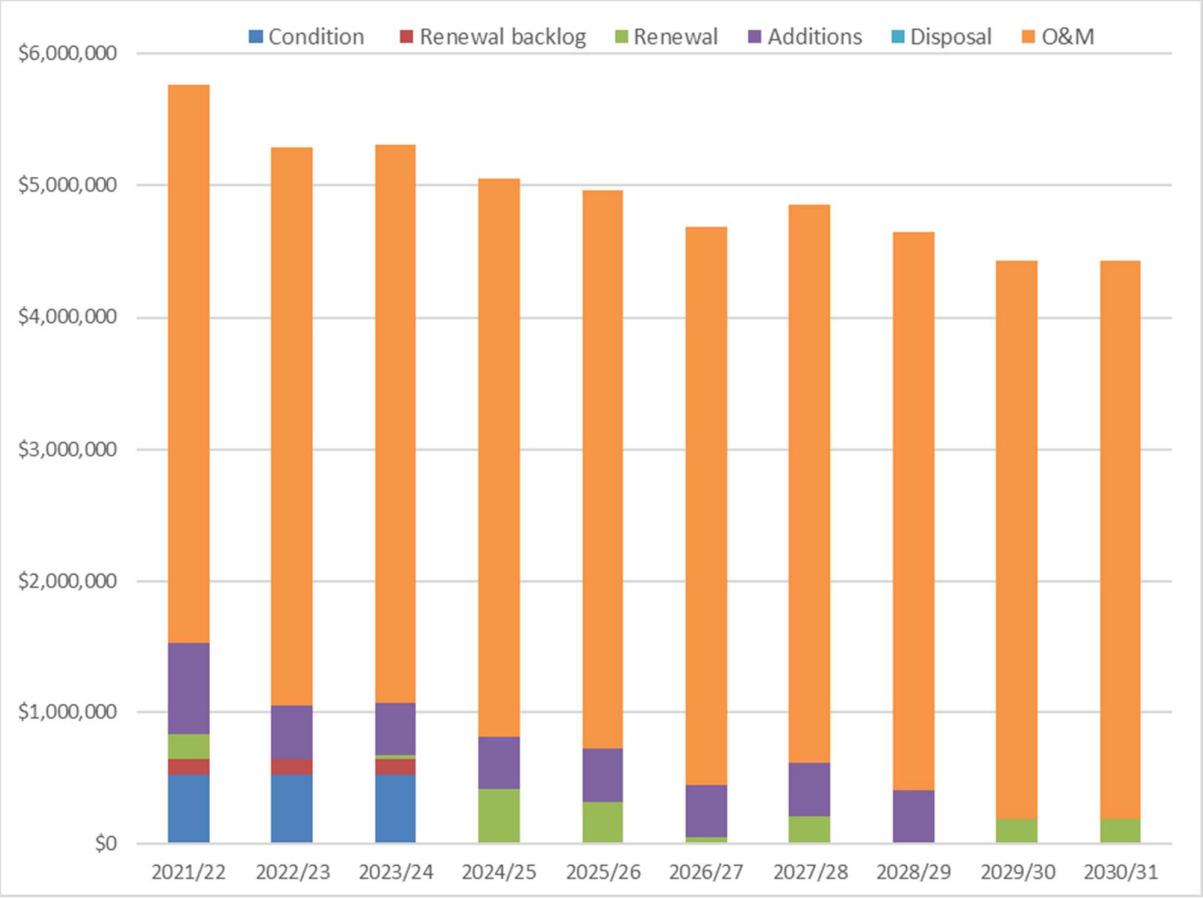

Figure 6-1 Financial Projections for Roads Infrastructure

Presented in Table 6-2 and Figure 6-2 are the funding requirement projections for the Stormwater infrastructure assets over the next ten financial years. In Table 6-2 the only costs identified for the Stormwater assets is to address the O&M costs.

Table 6-2 Financial Projections for Stormwater Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M	Total
2021/22	$0	$0	$0	$0	$0	$692,883	$692,883
2022/23	$0	$0	$0	$0	$0	$692,883	$692,883
2023/24	$0	$0	$0	$0	$0	$692,883	$692,883
2024/25	$0	$0	$0	$0	$0	$692,883	$692,883
2025/26	$0	$0	$0	$0	$0	$692,883	$692,883
2026/27	$0	$0	$0	$0	$0	$692,883	$692,883
2027/28	$0	$0	$0	$0	$0	$692,883	$692,883
2028/29	$0	$0	$0	$0	$0	$692,883	$692,883
2029/30	$0	$0	$0	$0	$0	$692,883	$692,883
2030/31	$0	$0	$0	$0	$0	$692,883	$692,883

Figure 6-2 Financial Projections for Stormwater Infrastructure

6.2.2 Waste Management Sector

The funding requirement projections for the Landfill infrastructure assets over the next ten financial years are presented in Table 6-3 and Figure 6-3. In Table 6-3 the majority of the forecast budget required for the Landfill is for the preparation of Cell 5 (A and B) at the Regional Waste Management facility in 2026/27 (Addition) and to cap Cells 1 to 4 at the Regional Waste Management facility in 2027/28 (Disposal).

Table 6-3 Financial Projections Yearly Profile for Landfill Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M
2021/22	$202,242	$141,640	$15,318	$0	$0	$1,667,588
2022/23	$202,242	$141,640	$98,683	$0	$0	$1,667,588
2023/24	$202,242	$141,640	$36,512	$0	$0	$1,667,588
2024/25	$0	$0	$107,549	$0	$0	$1,667,588
2025/26	$0	$0	$2,706,152	$0	$0	$1,667,588
2026/27	$0	$0	$284,640	$13,750,000	$0	$1,667,588
2027/28	$0	$0	$680,703	$0	$8,250,000	$1,667,588
2028/29	$0	$0	$544,965	$0	$0	$1,667,588
2029/30	$0	$0	$142,318	$0	$0	$1,667,588
2030/31	$0	$0	$552,002	$0	$0	$1,667,588

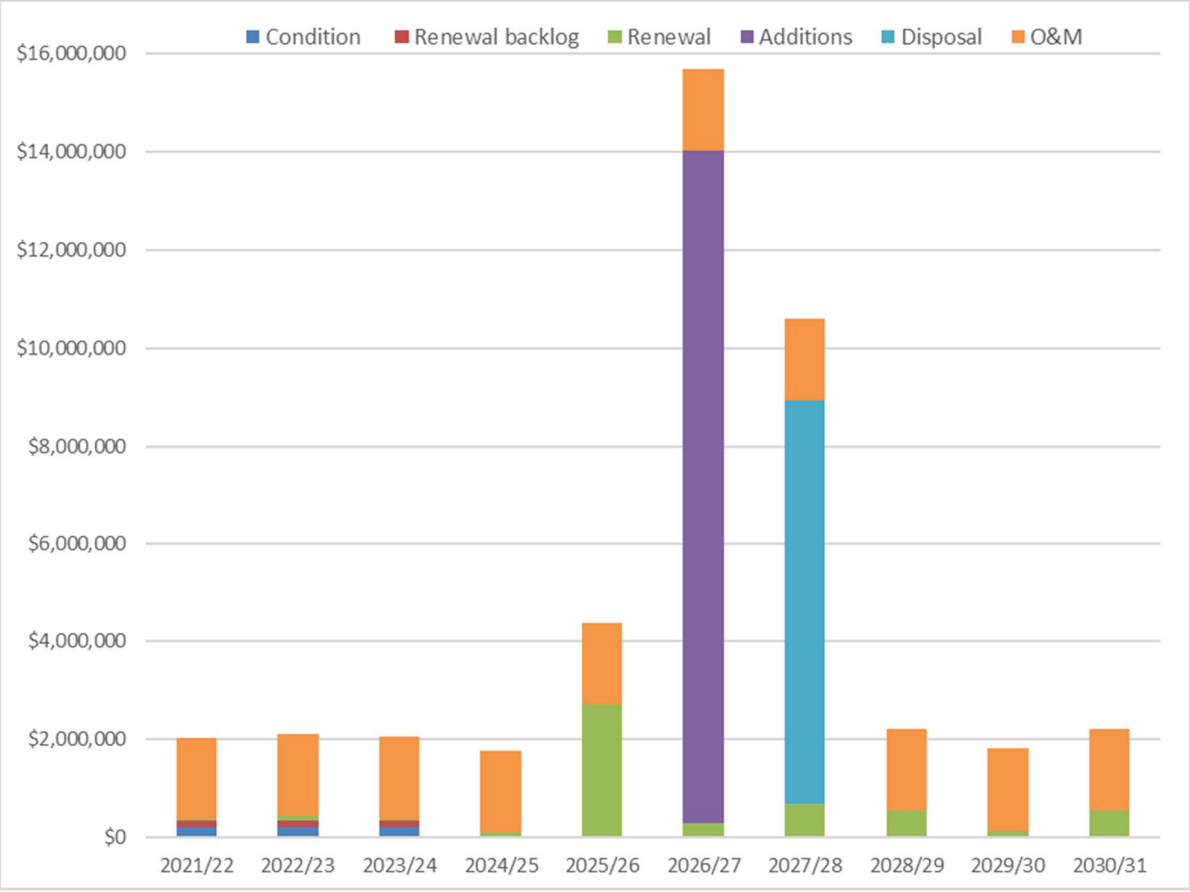

Figure 6-3 Financial Projections for Landfill Infrastructure

6.2.3 Community Facilities Sector

Presented in Table 6-4 and Figure 6-4 are the funding requirement projections for the Community Facilities infrastructure assets over the next ten financial years. In Table 6-4 the majority of the forecast budget required for the Community Facilities is for the $ 17 million project to upgrade the Public Library Lifelong Learning Centre in 2021/22 (Additions).

Table 6-4 Financial Projections Yearly Profile for Community Facilities Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M
2021/22	$2,545,633	$1,433,936	$831,136	$18,200,000	$0	$2,143,433
2022/23	$2,545,633	$1,433,936	$1,697,845	$940,000	$0	$2,143,433
2023/24	$2,545,633	$1,433,936	$655,211	$200,000	$0	$2,143,433
2024/25	$0	$0	$1,427,771	$190,000	$0	$2,143,433
2025/26	$0	$0	$1,170,591	$190,000	$0	$2,143,433
2026/27	$0	$0	$1,187,178	$190,000	$0	$2,143,433
2027/28	$0	$0	$558,982	$190,000	$0	$2,143,433
2028/29	$0	$0	$1,338,237	$100,000	$0	$2,143,433
2029/30	$0	$0	$874,153	$0	$0	$2,143,433
2030/31	$0	$0	$1,239,396	$0	$0	$2,143,433

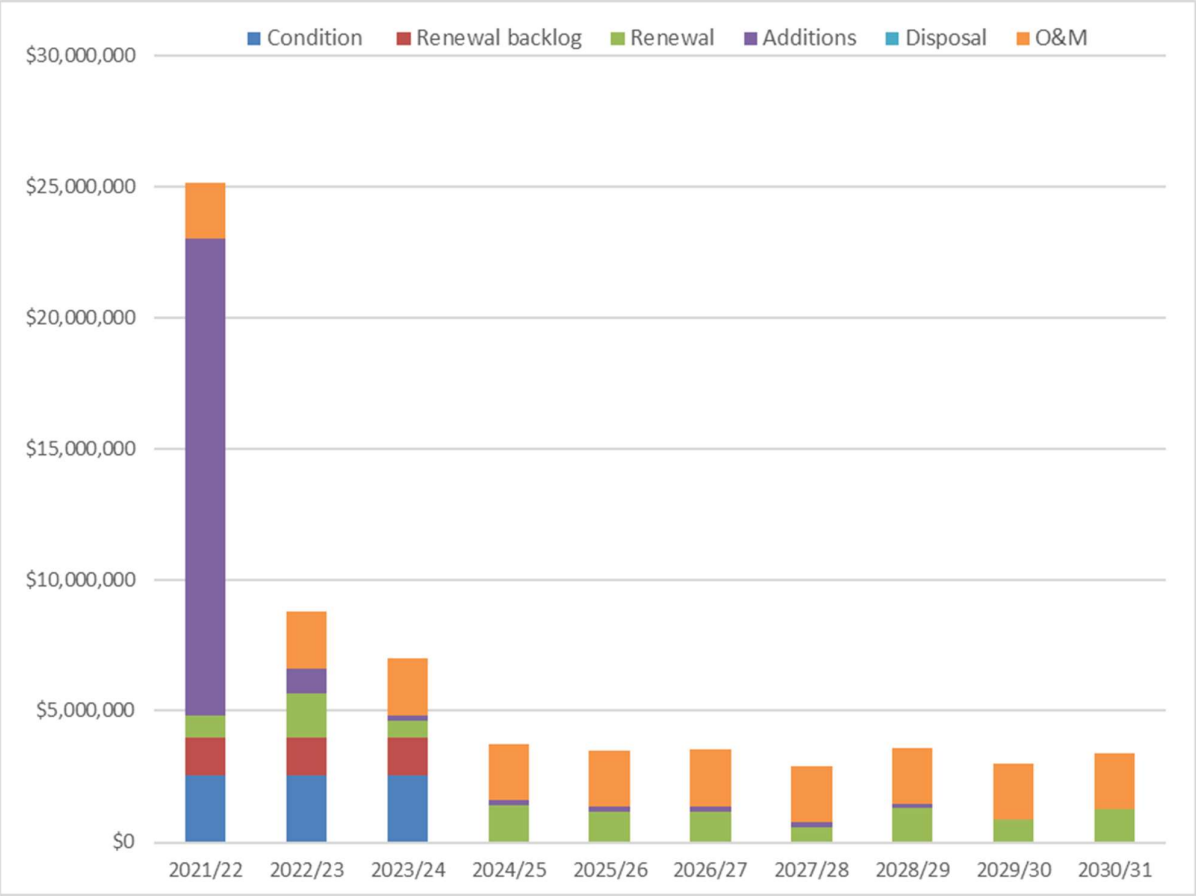

Figure 6-4 Financial Projections for Community Facilities Infrastructure

The funding requirement projections for the Sports Facilities infrastructure assets over the next ten financial years is presented in Table 6-5 and Figure 6-5. From Table 6-5 it can be seen that the majority of the forecast budget required for the Sports Facilities is for the $ 20 million project to upgrade the Aquatic Centre Multipurpose Centre in 2027/28 (Additions).

Table 6-5 Financial Projections for Sports Facilities Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M
2021/22	$3,674,841	$184,158	$993,598	$1,100,000	$0	$3,843,849
2022/23	$3,674,841	$184,158	$541,781	$500,000	$0	$3,843,849
2023/24	$3,674,841	$184,158	$680,196	$100,000	$0	$3,843,849
2024/25	$0	$0	$192,618	$100,000	$0	$3,843,849
2025/26	$0	$0	$394,332	$1,100,000	$0	$3,843,849
2026/27	$0	$0	$1,361,244	$100,000	$0	$3,843,849
2027/28	$0	$0	$278,375	$20,300,000	$0	$3,843,849
2028/29	$0	$0	$176,612	$100,000	$0	$3,843,849
2029/30	$0	$0	$974,402	$0	$0	$3,843,849
2030/31	$0	$0	$141,134	$0	$0	$3,843,849

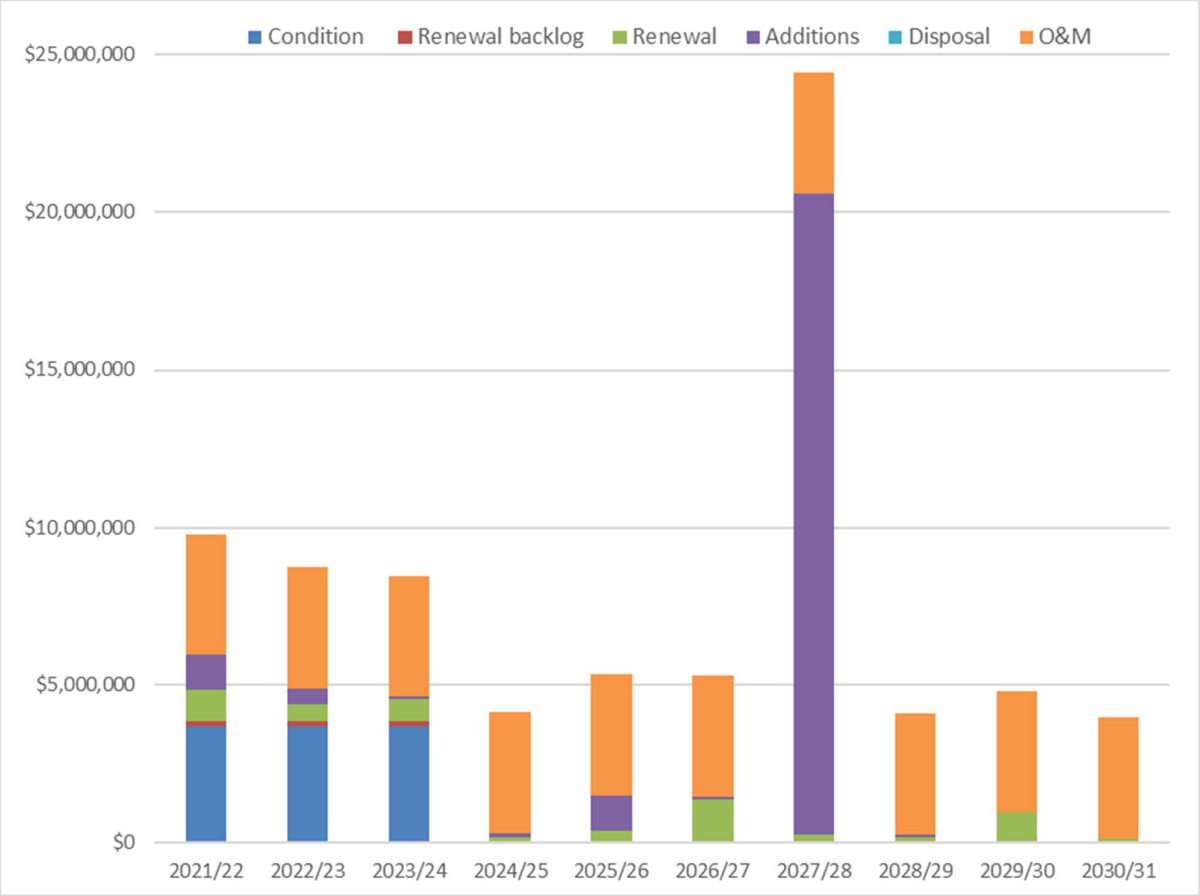

Figure 6-5 Financial Projections for Sports Facilities Infrastructure

6.2.4 Operational Buildings Sector

Presented in Table 6-6 and Figure 6-6 are the funding requirement projections for the Operational Buildings infrastructure assets over the next ten financial years. In Table 6-6 the majority of the forecast budget required for the Operational Buildings is for the $ 20 million project to upgrade the Aquatic Centre Multipurpose Centre in 2027/28 (Additions).

Table 6-6 Financial Projections Yearly Profile for Operational Buildings Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M
2021/22	$215,266	$184,158	$993,598	$0	$0	$548,360
2022/23	$215,266	$184,158	$541,781	$0	$0	$548,360
2023/24	$215,266	$184,158	$680,196	$0	$0	$548,360
2024/25	$0	$0	$192,618	$0	$0	$548,360
2025/26	$0	$0	$394,332	$0	$0	$548,360
2026/27	$0	$0	$1,361,244	$0	$0	$548,360
2027/28	$0	$0	$278,375	$0	$0	$548,360
2028/29	$0	$0	$176,612	$0	$0	$548,360
2029/30	$0	$0	$974,402	$0	$0	$548,360
2030/31	$0	$0	$141,134	$0	$0	$548,360

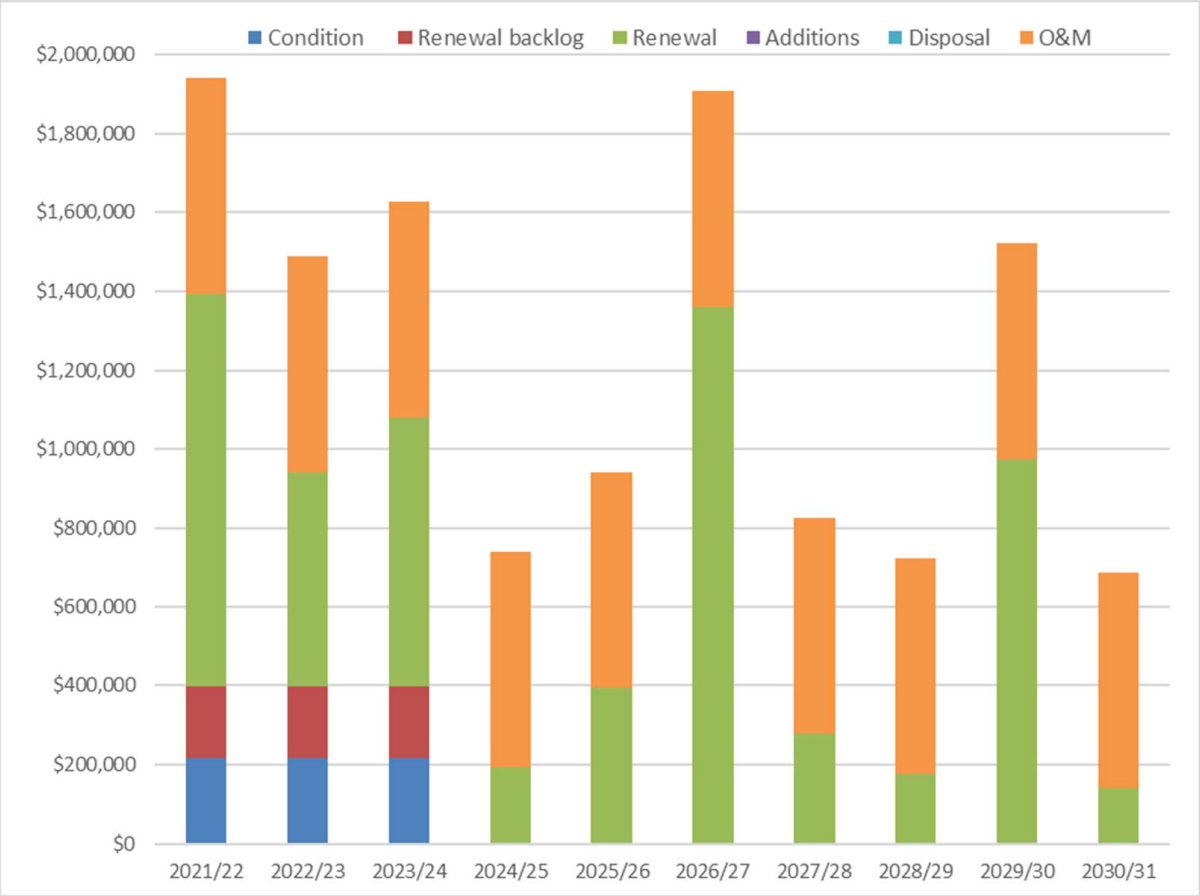

Figure 6-6 Financial Projections for Operational Buildings Infrastructure

The funding requirement projections for the Solar infrastructure assets over the next ten financial years is presented in Table 6-7 and Figure 6-7. In Table 6-7 the only costs identified for the Solar assets is to address the O&M costs.

Table 6-7 Financial Projections Yearly Profile for Solar Infrastructure

Financial Year	Condition	Renewal backlog	Renewal	Additions	Disposal	O&M
2021/22	$0	$0	$0	$0	$0	$34,342
2022/23	$0	$0	$0	$0	$0	$34,342
2023/24	$0	$0	$0	$0	$0	$34,342
2024/25	$0	$0	$0	$0	$0	$34,342
2025/26	$0	$0	$0	$0	$0	$34,342
2026/27	$0	$0	$0	$0	$0	$34,342
2027/28	$0	$0	$0	$0	$0	$34,342
2028/29	$0	$0	$0	$0	$0	$34,342
2029/30	$0	$0	$0	$0	$0	$34,342
2030/31	$0	$0	$0	$0	$0	$34,342

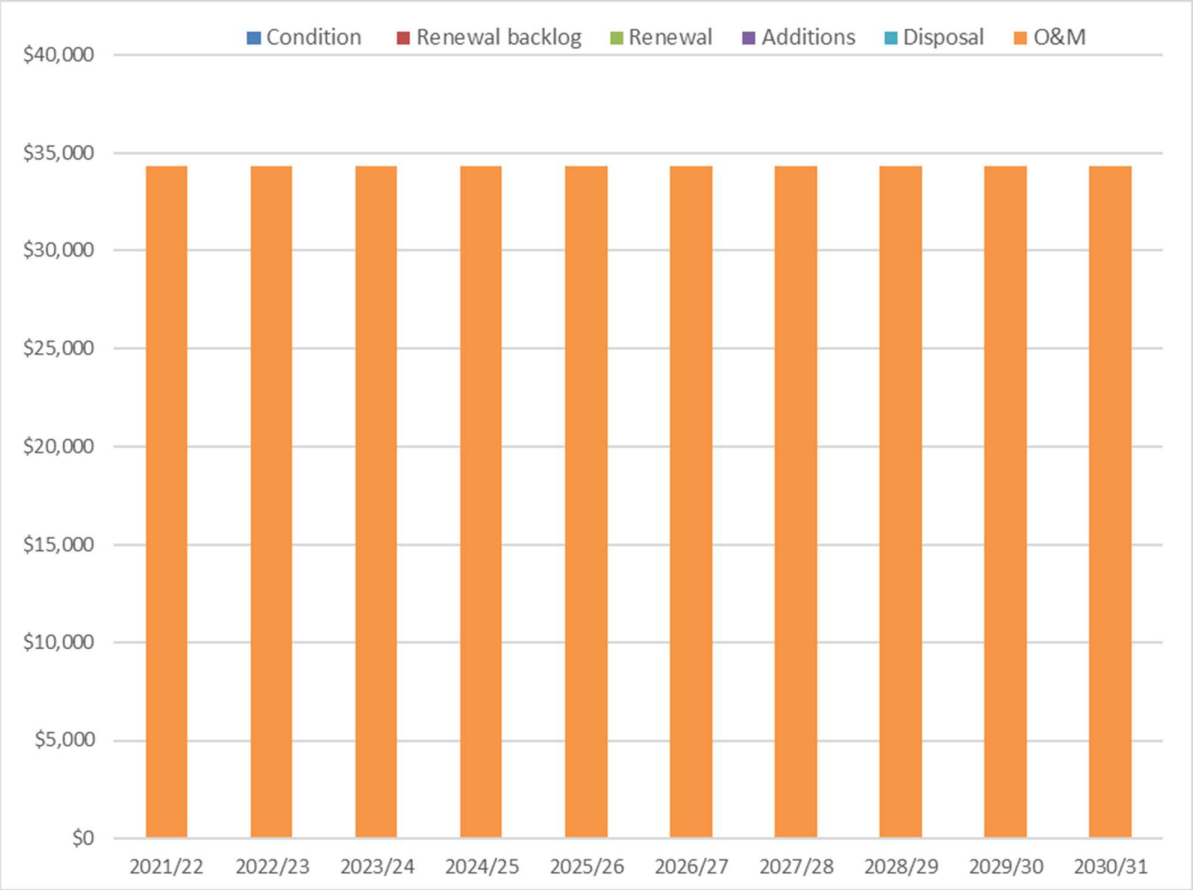

Figure 6-7 Financial Projections for Solar Infrastructure

6.2.5 Potential Infrastructure Funding Forecast

Using the financial projections for the sectors we can combine them to develop the potential infrastructure expenditure projections for the ASTC over the next 10 financial years, and the results are presented in Table 6-8 and Figure 6-8.

Table 6-8 Potential Infrastructure Funding Forecast for next 10 financial years

Financial Year	Roads	Stormwater	Landfill	Community Facilities	Sports Facilities	Operational Building	Solar	Total
2021/22	$5,768,120	$692,883	$2,026,788	$25,154,138	$9,796,446	$1,961,626	$34,342	**$45,434,343**
2022/23	$5,286,767	$692,883	$2,047,821	$8,760,847	$8,744,630	$923,798	$34,342	**$26,491,088**
2023/24	$5,309,910	$692,883	$2,047,983	$6,978,213	$8,483,045	$763,626	$34,342	**$24,310,002**
2024/25	$5,057,672	$692,883	$1,741,137	$3,761,204	$4,136,467	$548,360	$34,342	**$15,972,065**
2025/26	$4,960,822	$692,883	$2,166,801	$3,504,024	$5,338,181	$548,360	$34,342	**$17,245,413**
2026/27	$4,688,780	$692,883	$15,698,271	$3,520,611	$5,305,093	$645,784	$34,342	**$30,585,764**
2027/28	$4,853,279	$692,883	$10,580,291	$2,892,415	$24,422,224	$588,700	$34,342	**$44,064,134**
2028/29	$4,650,578	$692,883	$2,212,553	$3,581,670	$4,120,461	$556,481	$34,342	**$15,848,968**
2029/30	$4,432,688	$692,883	$1,806,406	$3,017,586	$4,818,251	$608,148	$34,342	**$15,410,304**
2030/31	$4,432,495	$692,883	$2,219,590	$3,382,829	$3,984,983	$548,360	$34,342	**$15,295,482**

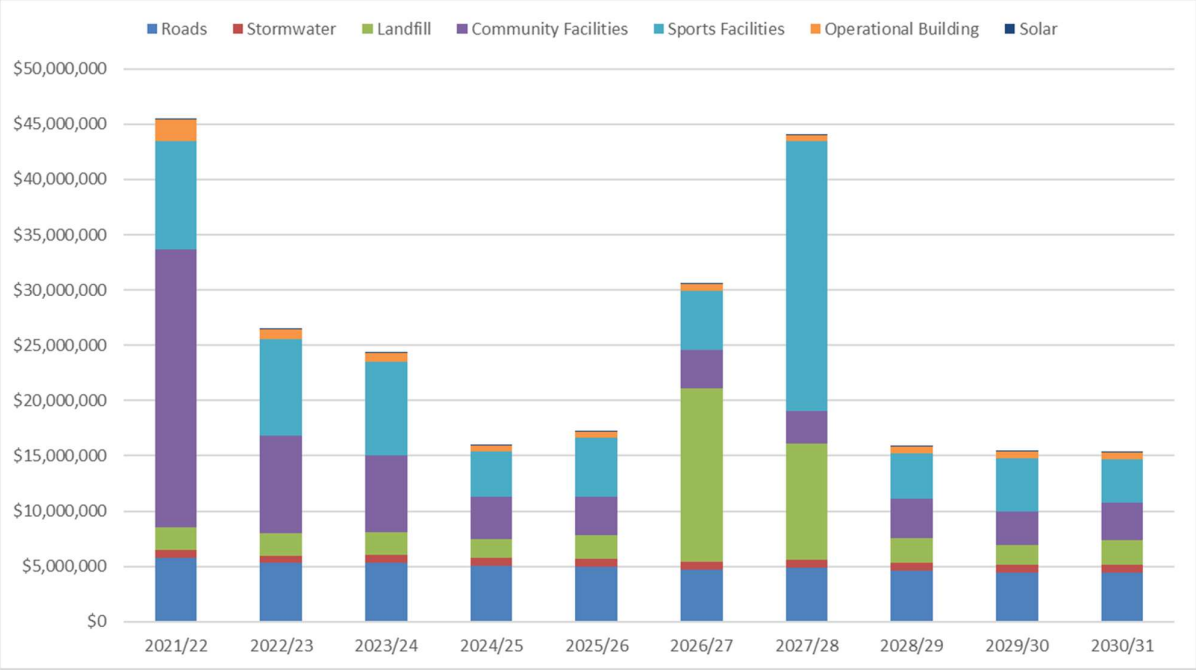

Figure 6-8 Potential Infrastructure Funding Forecast for next 10 financial years

From Table 6-8 and Figure 6-8 it can be seen that the largest potential forecast budget required over the next ten years would be $45.4 million in the 2021/22 financial year, which includes the $ 17 million Community Facilities project to upgrade the Public Library Lifelong Learning Centre in 2021/22. The second largest is in 2027/28 where the required budget is $44.1 million, which includes the $20 million Sports Facilities project for the Aquatic Centre Multipurpose Centre and the $ 8.25 million Waste Management disposal project to cap the cells at the Regional Waste Management Centre. The other major expenditure in in 2026/27 which includes the $ 13.75 million project to expand the Regional Waste Management facility.

The key assumptions required in the determination of the potential financial forecast are:

- There have been no service backlogs identified.
- The population for Alice springs over the years has been stable hence no real growth is identified.
- The condition of the assets in the asset register is reliable and accurate, thus the identified Condition Backlogs are required.
- Assets that form part of the Condition Backlog which also form part of assets identified for renewals, will be addressed in the Condition Backlog and not included in the Renewals (otherwise they would be double counted).
- The Renewal Backlogs are assumed to be addressed with the expenditure distributed evenly over three years, i.e. over FY2021/22, 2022/23 and 2023/24.
- Future upgrade / new asset creation program based on information provided in the 2018 Transport Infrastructure and Buildings and Land Improvement AMPs will be carried out. Along with the preparation of Cell 5 (A and B) at the Regional Waste Management facility expected to be carried out during the 2026/27 financial year.
- The only disposal project identified is the caping of Cell 1 to 4 at the Regional Waste Management facility assumed to occur in FY 2027/28.

6.2.6 Expected Infrastructure Funding Forecast

Considering the uncertainty associated of the condition data in the asset register, the funding to address the Condition Backlogs values should not be considered for the funding forecast. Thus, assets that formed part of the Condition Backlog, will only be considered if they form part of the funding required to address the Renewals and the funding to address the Renewal Backlog will not be distributed over three financial years.

Similarly, the Additions, the projects that were identified from the future “upgrade or new asset creation program” referenced in Appendix 2 have not been confirmed and ratified by ASTC and they will also be removed, apart from the project for the preparation of Cell 5 (A and B) at the Regional Waste Management facility, as that project is confirmed.

Not including the costs associated with the Condition Backlogs and the Additions provides an expected funding budget required for the ASTC’s infrastructure assets as is presented in Table 6-9 and Figure 6-9. Presented in Figure 6-10 is the expected funding budget required for the ASTC’s infrastructure assets by sector.

Table 6-9 Total Expected Infrastructure Funding Forecast over next 10 financial years

Financial Year	Condition	Renewal	Additions	Disposal	O&M	Total
2021/22	$0	$8,072,985	$0	$0	$13,173,324	$21,246,309
2022/23	$0	$4,332,135	$0	$0	$13,173,324	$17,505,459
2023/24	$0	$3,027,301	$0	$0	$13,173,324	$16,200,625
2024/25	$0	$2,089,668	$0	$0	$13,173,324	$15,262,992
2025/26	$0	$5,597,751	$0	$0	$13,173,324	$18,771,075
2026/27	$0	$4,886,003	$13,750,000	$0	$13,173,324	$31,809,327
2027/28	$0	$3,295,442	$0	$8,250,000	$13,173,324	$24,718,766
2028/29	$0	$4,116,551	$0	$0	$13,173,324	$17,289,875
2029/30	$0	$4,102,124	$0	$0	$13,173,324	$17,275,448
2030/31	$0	$4,368,696	$0	$0	$13,173,324	$17,542,020

The required forecast budget over the next 10 year period for infrastructure presented in Table 6-9, Figure 6-9 and Figure 6-10 is expected budget required based on the available and reliable asset information.

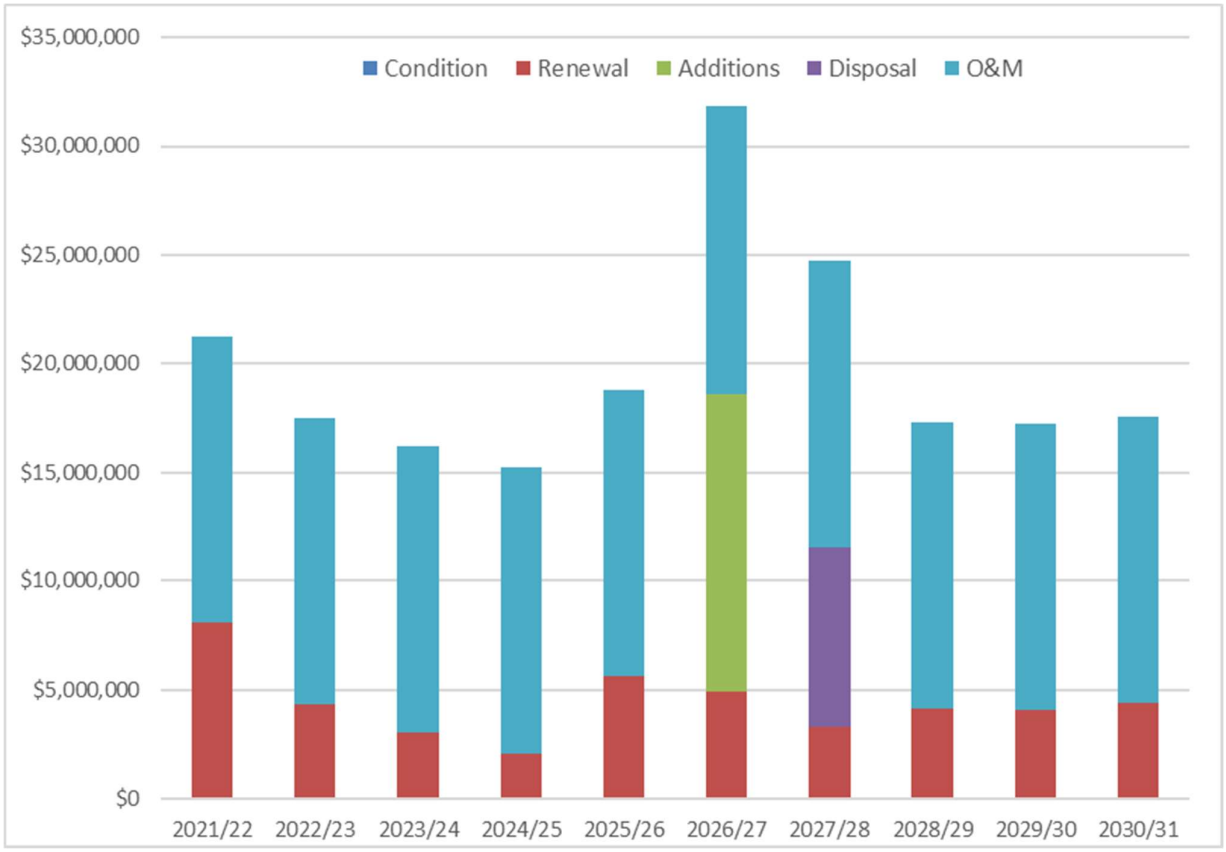

Figure 6-9 Expected Infrastructure Funding Forecast for next 10 years by Expenditure Type

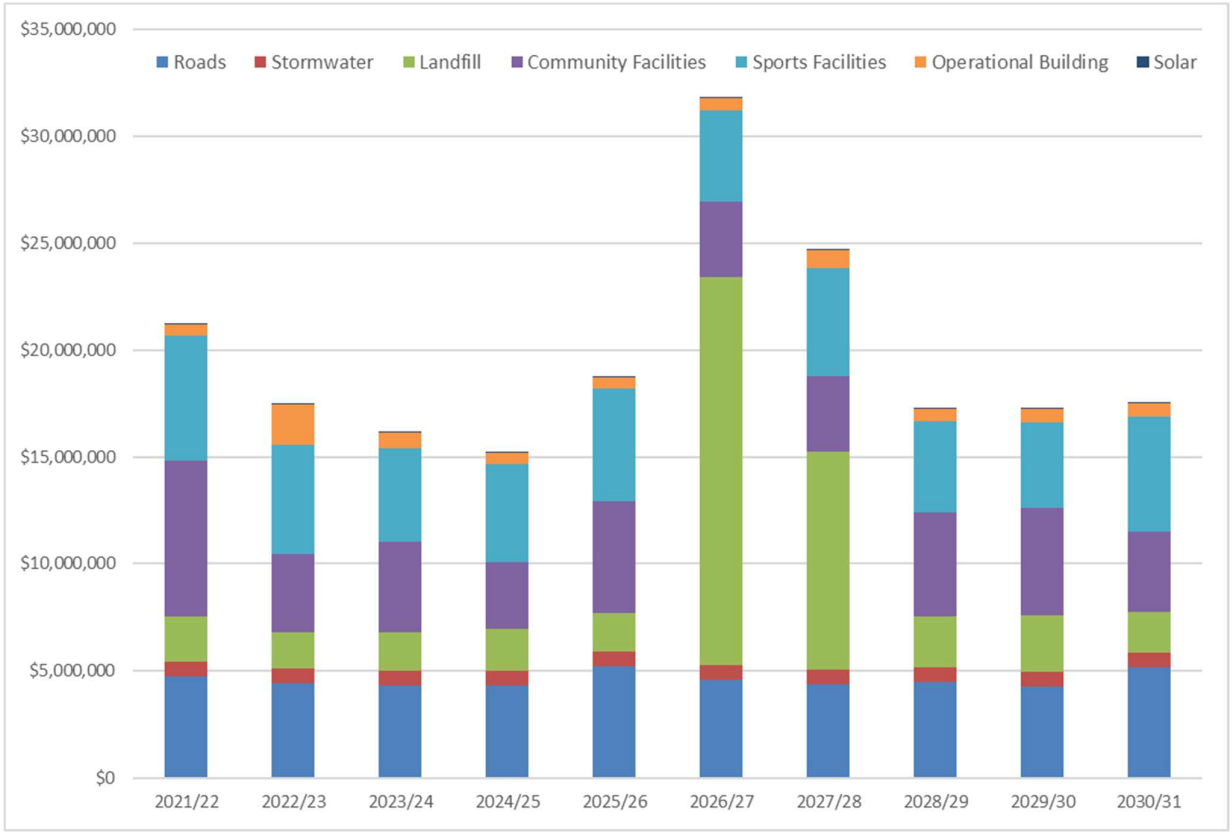

Figure 6-10 Expected Infrastructure Funding Forecast for next 10 years by Sector

The key assumptions required in the determination of the expected financial forecast are:

- There have been no service backlogs identified.
- The population for Alice springs over the years has been stable hence no real growth is identified.
- No condition backlogs have been identified.
- The only addition project considered is the preparation of Cell 5 (A and B) at the Regional Waste Management facility expected to be carried out during the 2026/27 financial year.
- The only disposal project is the caping of Cell 1 to 4 at the Regional Waste Management facility assumed to occur in FY 2027/28.

The operational (O&M) funding requirements calculated for the current asset base amount to $13,173,324 per annum (please see Section 4.8 for details). As the asset base of the ASTC evolves to meet the need of the Alice Springs community, the O&M funding requirements should be revised to account for any changes in the asset base. The capital funding requirements (i.e. funding for Condition, Renewals, Additions and Disposals) over the next 25-year period by sector is presented in Figure 6-11.

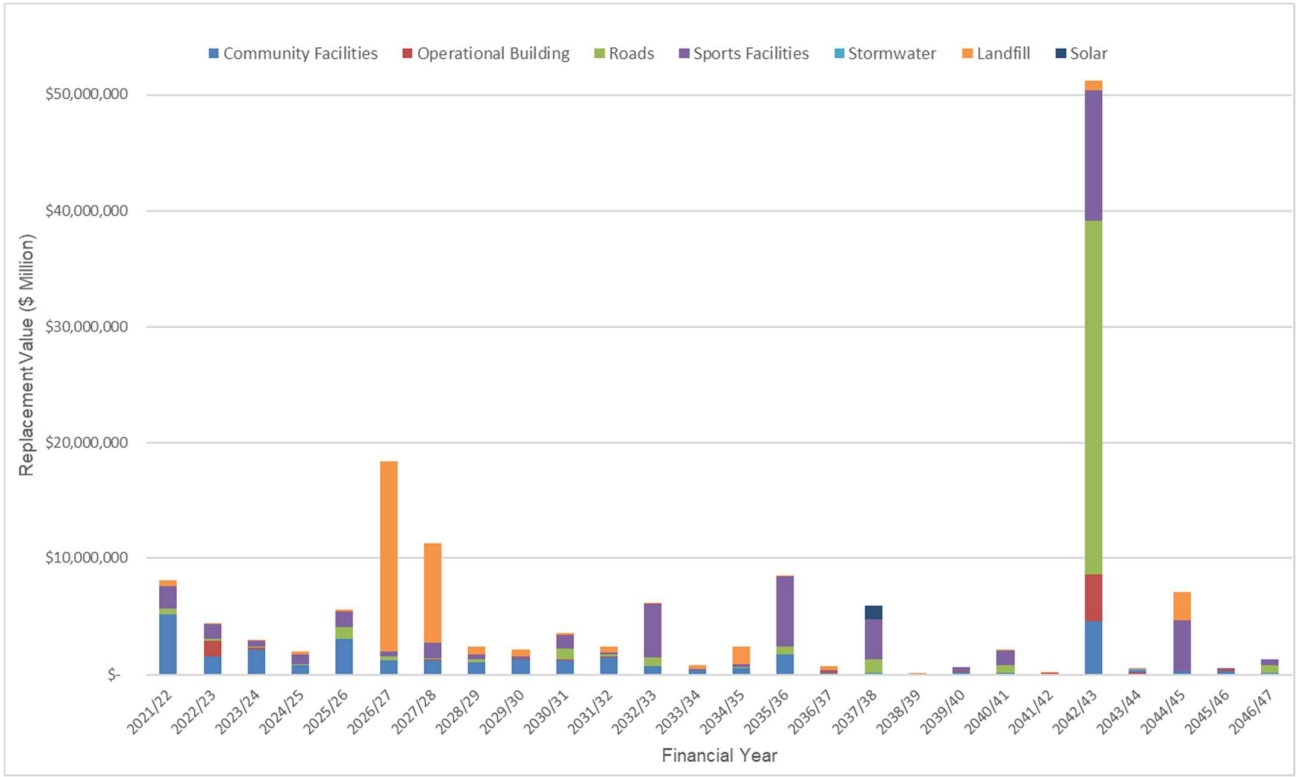

Figure 6-11 Expected Capital Infrastructure Funding Forecast for next 25 years by Sector

Asset criticality is the potential impact to the organisation should an asset or system fail, which considers the effect of the failure on health & safety, cost, reputation, service delivery and environmental damage. The failure of a low criticality asset would be deemed to have a minor impact and would typically be readily absorbed under normal operating conditions. Alternatively, the failure of a high criticality asset would be deemed to have a catastrophic impact; with likely irreversible and extensive impacts which could significantly undermining the key business objectives of the organisation.

The asset criticality ratings were used to provide an indicative mechanism for informing potential deferral of asset capital funding requirements in an environment of funding constraints. Presented in Figure 6-12 is the plot of the expected capital infrastructure funding required by the asset criticality. From Figure 6-12 it can be observed that funding required to address the high criticality assets comprises 18% of the total funding required, however in financial year 2026/27 and 2027/28 there will be a significant increase due to the

expected requirements for the associated costs (i.e. the additions and disposals of assets) with extending the life of the RWMF.

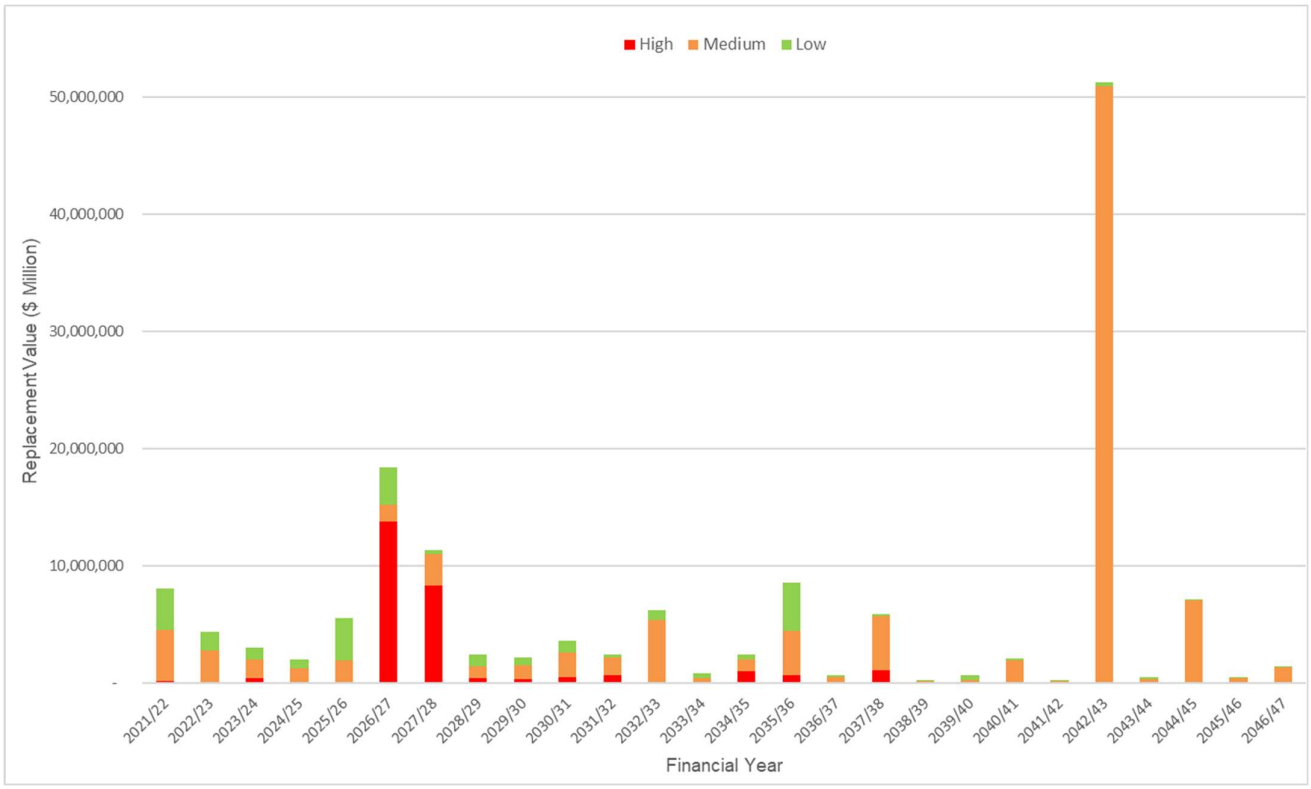

Figure 6-12 Expected Capital Infrastructure Funding Forecast for next 25 years by Criticality

From Figure 6-12 the indicative level of annual investment required over the next 25-year period to **only** fund the capital asset requirements for:

- The high criticality assets, is around $ 1.10 million per annum;
- The high and medium criticality assets, is around $ 3.99 million per annum; and
- All the assets (high, medium, and low criticality assets), is around $ 6.07 million per annum.

6.3 Funding Strategy

The financial strategy of the entity determines how funding will be provided, whereas the asset management plan communicates how and when this will be spent, along with the service and risk consequences of differing options. Additional assets will generally add to the operations and maintenance needs in the longer term, as well as the need for future renewals.

Funding for assets is provided from the budget and access to grant funding and the ASTC intends to utilise their reserve fund, available state grants along with council rates to fund their infrastructure budgets required to provide the services required by the community. However, no information was available on the strategy that the ASTC would adopt to fund any gaps between their current funding and the budget requirements for the infrastructure assets.

7 Asset Management Practices

7.1 Assessment Framework

The asset management practices of the ASTC were assessed using a structured assessment methodology based upon the AM Landscape published by the Global Forum on Maintenance and Asset Management (GFMAM) for its AM diagnostic assessments. The landscape defines Asset Management as consisting of 39 subjects in 6 subject-groups, as shown in Table 7-1.

Table 7-1 The Six Subject-groups and 39 Subjects of the AM Landscape[2]

#	Subject Group & Subjects	#	Subject Group & Subjects
Asset Management Strategy & Planning		**Asset Knowledge Enablers**	
1	Asset Management Policy	22	Asset information Strategy
2	Asset Management Strategy & Objectives	23	Asset information Management
3	Demand Analysis	24	Asset information Systems
4	Strategic Planning	25	Data & Information
5	Asset Management Planning	**Organisation & People Enables**	
Asset Management Decision - making		26	Procurement & Supply Chain Management
6	Capital Investment Decision-Making	27	Asset Management Leadership
7	Operations & Maintenance Decision - Making	28	Organisational Structure
8	Life Cycle Value Realisation	29	Organisational Culture
9	Resourcing Strategy	30	Competence Management
10	Shutdowns & Outage Strategy	**Risk, Review & Continual Improvement**	
Life Cycle Delivery Activities		31	Risk Assessment and Management
11	Technical Standards & Legislation	32	Contingency Planning & Resilience Analysis
12	Asset Creation & Acquisition	33	Sustainable Development
13	Systems Engineering	34	Management of Change
14	Configuration Management	35	Asset Performance & Health Monitoring
15	Maintenance Delivery	36	Asset Management System Monitoring
16	Reliability Engineering	37	Management Review, Audit & Assurance
17	Asset Operations	38	Asset Costing & Valuation
18	Resource Management	39	Stakeholder Engagement
19	Shutdowns & Outage Management		
20	Fault & Incident Response		
21	Asset Decommissioning and Disposal		

The Institute for AM (IAM) in the United Kingdom has developed a maturity scale which uses six levels of maturity to describe AM practice for each of the 39 subjects. These levels are as described in the accompanying Table 7-2. An assessed maturity of 3 – Competent also indicates compliance with ISO55001[3].

[2] Adapted from The Institute for Asset Management, "Asset Management Maturity Scale and Guidance".
[3] ISO55001 is the Standard for an AM Management System as published by the International Organisation for Standardisation.

Table 7-2 IAM Maturity Scale[4]

Scale	Description	Definition	Maturity Characteristics
0	Innocent	The organisation has not recognised the need for this requirement and/or there is no evidence of commitment to put it in place	
1	Aware	The Organisation has identified the need for this requirement, and there is evidence of intent to progress it	Proposals are under development and some requirements may be in place. Processes are poorly controlled, reactive and performance is unpredictable.
2	Developing	The Organisation has identified the means of systematically and consistently achieving the requirements, and can demonstrate that these are being progressed with credible and resourced plans in place	This is a transition state. Processes are planned, documented (where necessary, applied and controlled at a local level or within functional departments, often in a reactive mode but could achieve expected results on a repeatable basis. The Processes are insufficiently integrated, with limited consistency or coordination across the organisation.
3	Competent	The organisation can demonstrate that it systematically and consistently achieves relevant requirements set out in ISO55001	This involves a formal documented Asset Management System element is measured reviewed and continually improved to achieve Asset Management Objectives.
4	Optimizing	The Organisation can demonstrate that it is systematically and consistently optimizing its Asset Management proactive, in line with the organisation's objectives and operating context	This is 2nd transition state.
5	Excellent	The Organisation can demonstrate that it employs the leading practices and achieves maximum value from the management of its assets in line with the organisation's objectives and operating context.	This is a dynamic and context sensitive state, so evidence must include demonstration of awareness of benchmarking positions against similar best in class organisation’s and that, in both Asset Management practices and Asset Management Results (value realisation) there are no known improvements that have not already been implemented

The asset management maturity of ASTC was assessed by:

- Interviewing a wide range of staff members
- Site visits
- Review of available documentation
- Observing asset management activities

A list of interviews and facility inspections conducted is included in Appendix 3.

4 Adapted from The Institute for Asset Management, “Asset Management Maturity Scale and Guidance”

7.2 Assessment Results

7.2.1 Summary

Presented in Table 7-3 is the summary of ASTC's maturity per Subject Group, which provides an overall rating of 2.05 for the ASTC, which indicates a maturity between **DEVELOPING** and **COMPETENT**.

Table 7-3 ASTC Average Rating per Subject Group

Subject Group	Average of Rating
1. AM Strategy & planning	1.8
2. AM Decision-making	1.6
3. Lifecycle Delivery Activities	2.36
4. Asset Knowledge Enablers	1.25
5. Organisation & People Enablers	2.8
6. Risk, Review & Continual Improvement	2.0

Characteristics that are typical for an organisation that is described as **DEVELOPING** are:

- Pockets of excellence – There is/are individuals and teams that are excelling. However, the best practices developed by them are not always shared across silos within the organisation.
- Many systems used are manual and / or outdated. Spreadsheets are commonly used for data capture and exchange and systems are not integrated.
- Much of the management reporting is ad hoc with the same information required in different formats for different stakeholders.
- There is understanding of the importance of AM and various improvement plans exist. However, these are not integrated through a larger vision and are driven by individuals and small teams.
- There is a large focus on legal compliance, e.g. to get a clean audit, or to comply with health and safety requirements.
- Managers and staff are frustrated and aware that there is a better way of "doing things".

A summary of our findings by subject group is provided in the sections below.

7.2.2 Asset Management Strategy and Planning

ASTC has not developed an AM Framework that contains the documents the convert the organisations strategic goals to asset management goals. These should include a comprehensive AM policy; a Strategic AM plan and various AM plans for the asset classes managed by the council. The AM Framework must also include procedures to enable AM.

However, this AM plan as well as long-term financial plan will be finalised before the end of 2021/22 and these will provide a sound basis for AM.

Despite the lack of a long-term vision, the overall strategy for the council is outlined in key guiding documents, such as the ASTC Strategic Plan 2018-2021 and draft plan for 2021-2022. It should also be noted that this strategic plan already contains a number of performance targets which are based on AM outcomes, and this will strengthen the link between the organisation's strategic objectives and its assets.

This strategic plans and draft AM plan should be used as the base for a comprehensive enabling framework for AM at ASTC.

The framework needs to be implemented through enabling policies, such as a comprehensive AM policy as well as the establishment of an AM Steering committee to track progress with the implementation of AM improvements. It is noted that ASTC has developed a Rural Road Maintenance policy, which is quite old and should be incorporated in a more comprehensive AM policy and strategic plan.

Lastly, the AM Framework must consider the new Northern Territory Local Government Act and any AM requirements it might contain.

7.2.3 Asset Management Decision-making

Varied approaches are followed for capital investment decision-making. In some cases, such as the road reseal programme and vehicle replacements, detailed data analysis is undertaken to support these capital decisions. However, for the other asset classes the need for capital works are more ad hoc and based upon the expert knowledge of ASTC staff. There is an opportunity to formalise the approach to capital investment decision-making through the development of a procedure to guide these decisions, informed by the approaches implemented during the drafting of the recent AM plan. This should include the identification and agreement of affordable levels of service with the community as well as considering whole-of-life asset costs.

Because a large percentage of the capital works executed by ASTC is funded from Northern Territory grants, the projects implemented using these funds are based upon the strategic outcomes of the Territory government. The state of readiness of projects is also a big determinant on their selection for implementation with “shovel-ready” projects typically selected. Better coordination between ASTC and the Territory government is required to align capital programmes in support of the strategic outcomes of both speres of government.

Similarly, operational decision-making is ad hoc and based upon the knowledge of staff. Apart from some work on plant and equipment, maintenance works are almost exclusively reactive in response to asset failures.

Budgets are constrained by a focus on keeping the impact on rates as low as possible. ASTC has accumulated a healthy capital reserve account which should be used to recapitalise critical assets.

Although ASTC implements the bulk of capital- and maintenance project using its own resources such as machinery, personnel & tools, some work is contracted out. The remote location of Alice Springs means that this is often costly with poor responses to tenders.

7.2.4 Life Cycle Delivery Activities

Despite some gaps in longer term planning noted above, ASTC delivers consistent services to its customers. This is achieved through a dedicated technical workforce with very few vacancies, supported by a competent organisation and good leadership.

However, life cycle delivery activities as executed in an ad hoc manner and it is recommended that they be formalised through a formal work planning and execution process. This should include statutory inspections as well as condition assessments to prevent key asset from deteriorating. An example is severe corrosion noticed on the pumps at the aquatic centre, which could be prevented through regular preventive inspections.

Maintenance work should be supported by an asset information system, such as the AM System (AMS) used at the workshop. ASTC should explore whether this platform could be used to identify and record maintenance across all asset classes.

In some instances, resources such as vehicles & budgets are also constraining delivery across the asset life cycle. A good example is solid waste collection which is done with a single waste compactor with no backup. The fleet of 80 plus is old and needs significant investment for it to be renewed.

Good health and safety practices were observed but some operational areas were untidy.

7.2.5 Asset Knowledge Enablers

A number of information systems support AM activities. These include the AMS at the workshops, the Civica enterprise management system, Diligent board management and the Content manager Intranet. The systems are not integrated and have duplicate functionality.

In general, the information technology (IT) unit provides good backup to all AM functions although they have a challenge to overcome a legacy of very strict control of software and hardware in the past, which has led to outdated software and technically obsolete hardware. A 3-year transformation plan has been implemented to address this challenge.

Limited use is made of geographic information even though the core business of a town council is built on asset spread over a large geographic area.

There is significant opportunity for ASTC to rationalise the information systems it uses to support AM, as part of the wider IT transformation plan. This needs to be based upon an understanding of the core AM processes across the asset life cycle. The effective implementation of an enabling asset information system will support a reduction in the current use of paper-based management systems.

There is no formal technical asset register in place. An attempt was made a few years ago to establish such a register but it has since become outdated. ASTC should prioritise a project to document a formal asset hierarchy as well as other meta data required for asset management and implement a programme to populate such a register, and to keep it updated. It is required as the foundation for sound asset management. A positive development is that an asset officer was recruited for the technical department and will have a large focus on updating the asset register.

7.2.6 Organisation and People Enablers

The organisational structure at ASTC is adequate for the AM functions it must perform, and technical vacancies are low. The AM structure is staffed with competent hard-working staff members, but the general awareness of AM principles is low. However, the recruitment lead times to fill positions is lengthy.

The lack of formal procedures covering the life cycle of assets has resulted in most decisions being taken on an ad hoc basis using the expert judgement and knowledge of individuals.

There is a very good understanding of the importance of asset management in the senior leadership team led by a dynamic Chief Executive Officer, who is the sponsor for the AM improvement project. This will ensure the right culture at ASTC for the implementation of the proposed AM improvements.

7.2.7 Monitoring, Review and Continual Improvement

A comprehensive key performance index framework has been deployed at ASTC. This framework must be enhanced to include appropriate AM indicators to drive good behaviours across the organisation.

Although risk management function is under development, risk is managed in a formal manner through a risk register, and the Director: Corporate Services is a very experienced risk manager. Risk management considers key asset related risk such as the ageing fleet and the limited capacity at the landfill site.

A programme has been implemented to develop formal processes for many of the functions Council must perform. This must be expended to processes that cover the life cycle of the assets that ASTC manages.

ASTC has implemented good sustainable practices, especially in the solid waste management department with initiatives such as the separation of Food and Garden organics, the reuse of concrete, steel recycling and general waste separation. Dust on the waste site is controlled.

A project has been implemented to monitor energy use as some facilities, but its impact has been limited by a lack of data to use for analysis.

It was noted that the ASTC utilises the Revaluation Model for its accounting treatment of its Property, Plant and Equipment (infrastructure) asset register. The Revaluation Model is based on determining a fair value for the asset usually based on the value the asset could obtain in the market. The Revaluation Model is thus well suited for investment property but for infrastructure assets this poses a challenge as typically there is no second-hand market for infrastructure assets. It is recommended that the ASTC considers moving to the Cost Model for its Property, Plant and Equipment (infrastructure) assets.

8 Recommendations

The existing infrastructure asset portfolio of the ASTC provides the production capacity for the delivery of services. This section identifies the recommendations and follow-up actions required to give effect to the infrastructure Asset Management Plan.

The following recommendations are proposed:

- For each sector definitions of levels of service are developed for key asset types or components. These levels of service must then be socialised with the community through stakeholder engagements along with an understanding of the associated budget commitments that will be required to sustain the levels of service. Establish the community's priorities for each of level of service and the desired level of service, that can be provided by the ASTC in a sustainable manner.
- A detailed study is undertaken to understand the expected demographic changes over the long term (twenty-year period) that is expected in Alice Springs. This study should also provide insight into the expected funding support levels that the ASTC should be able to expect from the community and should inform discussions with the community around levels of service for infrastructure assets.
- Redeveloping the infrastructure Asset Register, including:
  - Developing a fit-for-purpose asset classification hierarchy.
  - Reviewing and amending the asset attributes to be captured for each asset within the Asset Register to ensure that the required asset information to support decision-making is available. This would include defining gradation scales for condition, utilisation, criticality, and operating environment.
  - Re-compilation of the asset register ideally based on a full physical verification of the asset base, to inspect and capture data for all assets the associated asset information required (asset attributes for assets as per the asset hierarchy classification).
  - Review the key accountabilities and governance structures for the asset management policy, processes and procedures to ensure that the asset information is utilised and regularly updated and maintained.
- For the implementation of risk management, the ASTC should:
  - Assess the asset criticality of its infrastructure portfolio based on the criticality framework developed.
  - Compile and maintain a risk register for asset and non-asset risks on its infrastructure assets.
  - Develop resilience measures based on asset monitoring and review procedures.
- Formalise the funding strategy for infrastructure assets (for asset creation, operation and maintenance, renewal, and disposal) to ensure they deliver the services required by the community, along with the strategy for dealing with any funding gaps.
- Further develop the Asset Management Framework with a dedicated Asset Management Policy and Strategic Asset Management Plan.
- Formalise the approach to capital investment decision-making through the development of procedures to guide these decisions and capture in future asset management plans.
- Enhance the key performance index framework deployed at ASTC to include appropriate asset management indicators to drive good behaviours across the organisation.
- Considers moving to the cost model for its Property, Plant and Equipment (infrastructure) asset register.

This asset management plan shall be reviewed, updated, and extended in view of the Town Council's commitment to improve service provision and to establish effective and sustainable asset management practices.

Appendix 1 – Asset Information

Although the ASTC's 2019/2020 asset register was the most complete source of asset information for the ASTC asset portfolio, it is not without challenges. It has been acknowledged that information in the asset register has not been consistently maintained and that the register may contain records that may no longer exist or may not include records for newly created assets. Initial analysis of the raw data confirmed that there was a gap in records that had been recently updated and the incompleteness of certain data fields such as Purchase Value and Commission/Acquisition Date.

To ensure the infrastructure asset information required for the analysis required in the Asset Management Plan used the most reliable data (as far as practicable), the 2019/2020 asset register was iteratively refined. The steps taken to identify and remove 'non-current' and non-infrastructure assets to develop the Revised Asset Register for ASTC's infrastructure assets were:

- Removal of all inactive assets in the asset register, as these assets were understood to represent asset that are no longer providing benefit to the ASTC.
- Proxy assets were identified using the details available in the asset register field "Asset Description", as these records were understood to represent temporary records and not assets.
- Assets identified as land in the asset register field "Asset Sub-Class" were removed, as they represent land assets.
- Assets with a zero value in the asset register fields "Residual Life" and "Last Value" were removed, as these assets were understood to no longer have any useful life and carried no value and were thus deemed to have been disposed and were in the register as historic records.
- Assets identified as being non-infrastructure based on the asset classification hierarchy were removed after validation and testing with ASTC stakeholders.

Presented in Table A1-1 is a summary of the revisions undertaken along with the associated number of records, the sum of asset Current Replacement Cost (CRC) and completeness/availability of the CRC value data for each revision of the asset database. The database formed after revision 6 was used as the Revised Asset Register for ASTC's infrastructure assets.

Table A1-8-1 Summary of the Iterative Refinement of Asset Register

Revision	Description	Total No of Records	Sum of CRC ($ Million)	Completeness of CRC Data
1	All active assets in the '2019-2020 Asset Register' database	5147	529.8	84.9%
2	Proxy assets removed.	5134	529.8	85.1%
3	Land assets removed.	5017	468.9	84.8%
4	Assets with a sale date removed.	5000	467.0	84.8%
5	Assets with 0 residual life and 0 last value removed.	4137	445.4	98.4%
6	'Non-infrastructure' assets removed.	3609	439.3	98.9%

Some of the key asset information fields needed to conduct the lifecycle analysis required for the Asset Management Planning were not complete and additional steps were required to address these gaps in asset information. The key asset information data fields available within the ASTC Asset Register were: Useful Life, Residual Life, Commission Date, Acquisition Date, Last Date and Purchase Value. These were used to inform and derive the following key asset data filed required for the lifecycle analysis.

Expected Useful Life

Expected Useful Life (EUL) is how long (in years) the asset is expected to provide value to the Council. The "Useful Life" field in the asset register was found to be complete for the infrastructure assets and was utilised as the EUL.

Remaining Useful Life

Remaining Useful Life (RUL) is the length of time, in years, that the asset is expected to be able to keep providing service to the Council. Once an asset has a remaining useful life of 0 years, then the asset is considered to have reach the end of its serviceable life and deemed to require replacement or refurbishment in order to be able to keep providing the services required for it.

Remaining useful life was calculated by applying the following formula:

Remaining Useful Life = Expected Useful Life – Asset Age

Where Asset Age is the number of years the asset has been in service. Following fields in the Asset Register were used to determine the Asset Age, in order of priority:

1. Commission Date
2. Acquisition Date
3. Backup Date (*Backup Date = Last Date – [Useful Life – Residual Life]*)

Current Replacement Cost

The assets Current Replacement Cost (CRC) value represents the cost and all the associated costs that would be required to recreate or replacing the asset, using today's value of money.

As some of the costs associated with creating assets are historic and an escalation factor was utilised to escalate historic costs to today's value of money.

Asset Current Replacement Cost = Historic Value x Escalation Factor

Where the Escalation Factor is based on the Contract Price Adjustment, that uses contract price indices to escalate historic values based on a known 'purchase' date to escalate it its value to today's equivalent value.

Historic Value is the cost associated with creating the asset with an associated date, the fields "Purchase Value" and "Last Value" in the asset register were used as Historic Value.

The "Last Value" was the value assigned as per the last revaluation carried out and was based on either a **revaluation** (i.e. valuation based on market value) or a **depreciated replacement cost** (i.e. valuation based on the remaining condition or remaining useful life of the asset).

> The Depreciated Replacement Cost (DRC) is the current cost of replacing an asset with its modern equivalent asset less deductions for physical deterioration and all relevant forms of obsolescence and optimisation.

Assets where the "Last Value" was based on a DRC were identified (from the JLL Report: Revaluation of Alice Springs Town Council Assets, 01 July 2019) and their CRC was determined by:

CRC = DRC x (Expected Useful Life/Remaining Useful Life)

Criticality

Asset Criticality is an assessment of the impact (typically in financial, safety, environmental, operational and reputation terms) to the organisation arising from the failure of the asset or the asset failing to provide the function required. The ASTC's 2019/2020 asset register did not contain any data fields that informed on the assets critically. Thus, a high-level asset criticality was applied to each asset and a "high", "medium" and "low" criticality rating was assigned based on the asset type. The criticality ratings were sense checked to account for specific assets which were understood to be operationally critical to the ASTC.

The asset criticality was assigned to assets based on our understanding of the assets that would be critical to the operational functionality of the ASTC to provide an indicative view across the asset portfolio.

The ASTC's 2019/2020 asset register used are Accounting Group, Asset Category, and Asset Sub-Class to inform the asset classification hierarchy and presented in Table A1-2 is a summary of the classifications available in each of these data fields.

Table A1-8-2 Asset Classification Hierarchy in the Asset Register

Accounting Group	Asset Category	Asset Sub-Class
Economic Affairs	Community centres & halls	Buildings
Environmental Protection	Control of domestic animals and livestock	Furniture and Office Equipment
General Public Services	Cultural services	Land Improvements
Housing & Community Amenities	Economic affairs NEC	Other Infrastructure
Public Order & Safety	Emissions & air pollution abatement & management	Plant and Equipment
Recreation, Culture and Religion	Family & children services	Sealed Roads
Social Protection	General public services NEC	Stormwater Drains
	Housing & community amenities NEC	Unsealed Roads
	Public Order & Safety	
	Public order & safety NEC	
	Recreation, culture and religion	
	Recreation, culture and religion NEC	
	Religious services	
	Road transport	
	Solid waste management	
	Sport & physical recreation services	
	Street lighting	
	Waste water management	

The Asset Sub-Class which provides the lowest level of granularity for the asset classification hierarchy in the asset register, has not been componentised to a maintenance significant item level. As result assets such as a 'building', which in itself is comprised of several maintenance significant item (or components), are listed alongside recognisable maintenance significant items such as sealed and unsealed roads.

The result of this is that the current asset classification hierarchy utilised in the ASTC's 2019/2020 asset register does not provide a clear view of the asset type, the asset function, nor the sector associated with that asset. Thus based on our understanding of the ASTC's asset portfolio, for the purposes of the analysis required for the AMP, we assigned a "sector" to each asset record in the Revised Asset Register for ASTC's infrastructure assets to provide a better resolution and understanding of the service group the assets provide for the ASTC:

- **Roads** – for assets associated with roads transportation such as the roads themselves (road pavements, and road structures), roadside furniture (signs, barriers, traffic lights, etc.), carparks and cycle and footpaths.
- **Stormwater** –for assets associated with stormwater such as the stormwater pipes, drains, and kerb inlets.
- **Landfill** –for assets associated with the Regional Waste Management Facility landfill site.
- **Community Facilities** –for assets that are associated with facilities that are operated and maintained by the ASTC that provide services to the community and typically includes facilities such as: Cemeteries, Crèches/Child care, Clinics, Community halls and centres, Fire and Ambulance Services, Libraries, Sport and recreation, Parks, Pay and Enquiry Points and Vehicle Testing Stations.
- **Sports Facilities** – are assets associated with facilities that provide recreational and sports services for the community, this is usually a sub-division within the Community Facilities Sector and the available data allowed this sub-group to be identified.
- **Operational Buildings** – for assets associated with facilities that are operated and maintained by the ASTC that enable the Council staff to carry out the work required of them and typically includes facilities such as: Depots, Yards, Workshops, Stores, Municipal offices and Laboratories.

- **Solar** - for assets associated with photo voltaic electricity generation, this would usually be a sub-division within the Operational Buildings Sector and the available data allowed this sub-group to be identified.

A fully fledged asset classification hierarchy should provide support for asset componentisation for all immovable assets that can be found with the ASTC's asset portfolio, to the level necessary to support accounting/financial requirements for asset recognition and measurement and strategic asset management.

Presented in Figure A 1 is a framework for componentising an asset portfolio into six levels that provides clarity on the assets function and asset type. In Figure A 1 the asset class can be used to describe the 'sector' the assets belong to, where the sector provides a useful definition for understanding the services to which the asset contributes towards.

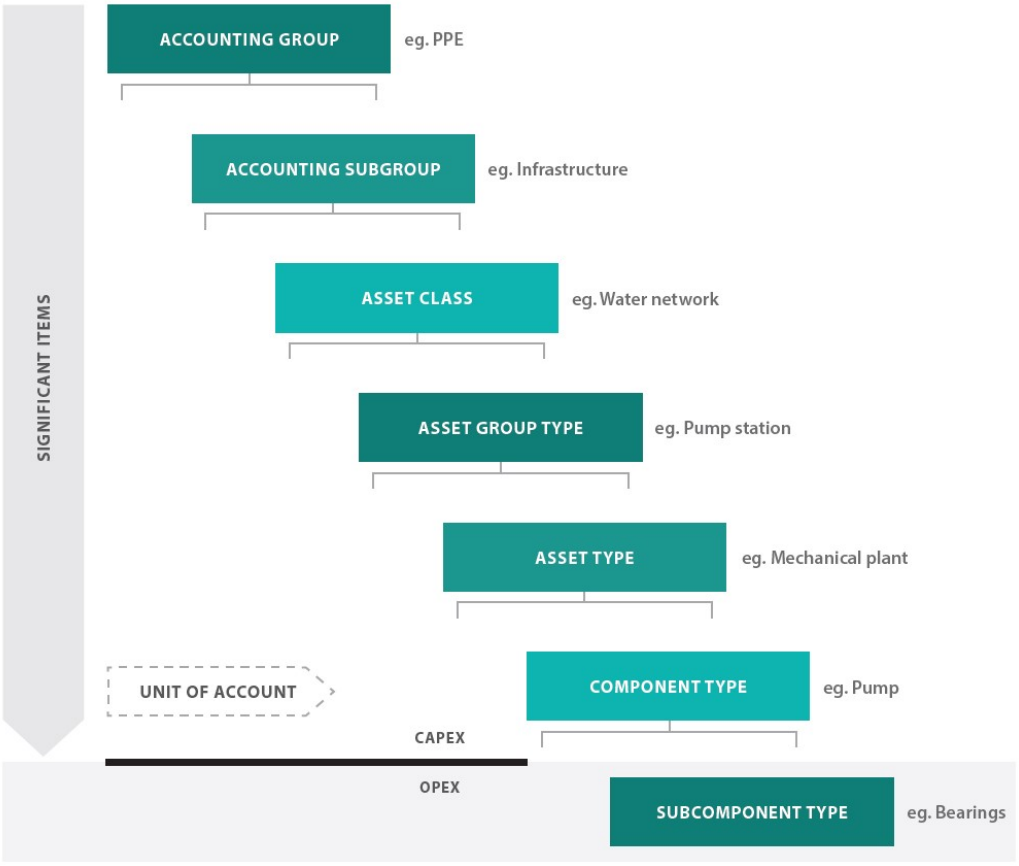

Figure A1-1 Framework for segmenting an asset portfolio into a suitable asset classification hierarchy

In ASTC the Sectors that the council provides services through its infrastructure could be grouped in to four main categories: Roads & Stormwater, Solid Waste Management, Community Facilities, and Operational Buildings.

Appendix 2 – Projected Upgrade / New Work Program

The projected upgrade / new capital works program shown in the tables below by financial year, are based on the projects identified in the 2018 asset management plans developed for Transport Infrastructure and Buildings and Land Improvements. The forecast asset addition expenditure in each financial year are shown in current dollar values.

Financial Year	Item	Description	Estimate ($'000)
2021/22	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Entry Statement Gap Road	$300
	4	Civic Centre Upgrade	$100
	5	Upgrade to Skate Park	$1,000
	6	Public Library Lifelong Learning Centre	$17,000
	7	Aquatic Centre Capital Upgrade	$100
	8	Albrecht Oval additional Change Room and Toilet	$1,000
	9	Public Toilet Refurbish	$100
2021		**Total**	**$20,000**

Financial Year	Item	Description	Estimate ($'000)
2022/23	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Capital improvements to Civic Centre	$90
	4	50 + Community Centre-Remodel & Extend	$750
	5	Traeger Park Oval Entrance	$400
	6	Aquatic Centre Capital Upgrade	$100
	7	Public Toilet Refurbish	$100
2022/23		**Total**	**$1,840**

Financial Year	Item	Description	Estimate ($'000)
2023/24	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Capital improvements to Civic Centre	$100
	4	Aquatic Centre Capital Upgrade	$100
	5	Public Toilet Refurbish	$100
2023/24		**Total**	**$700**

Financial Year	Item	Description	Estimate ($'000)
2024/25	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Capital improvements to Civic Centre	$90
	4	Aquatic Centre Capital Upgrade	$100
	5	Public Toilet Refurbish	$100
2024/25		**Total**	**$690**

Financial Year	Item	Description	Estimate ($'000)
2025/26	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Capital improvements to Civic Centre	$90
	4	Aquatic Centre Capital Upgrade	$100
	5	Public Toilet Refurbish	$100
	6	Kiigariff sporting facility/ community centre/ depot	$1,000
2025/26		**Total**	**$1,690**

Financial Year	Item	Description	Estimate ($'000)
2026/27	1	Cycle Paths as per 10-year plan	$200

Financial Year	Item	Description	Estimate ($'000)
	2	Alterations to traffic low and control in CBD	$200
	3	Capital improvements to Civic Centre	$90
	4	Aquatic Centre Capital Upgrade	$100
	5	Public Toilet Refurbish	$100
2026/27		**Total**	**$690**

Financial Year	Item	Description	Estimate ($'000)
2027/28	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Capital improvements to Civic Centre	$90
	4	Aquatic Centre Capital Upgrade	$100
	5	Public Toilet Refurbish	$100
	6	Treager park Replace Cricket wicket	$200
	7	Aquatic Centre Multipurpose Centre	$20,000
2027/28		**Total**	**$20,890**

Financial Year	Item	Description	Estimate ($'000)
2028/29	1	Cycle Paths as per 10-year plan	$200
	2	Alterations to traffic low and control in CBD	$200
	3	Aquatic Centre Capital Upgrade	$100
	4	Public Toilet Refurbish	$100
2028/29		**Total**	**$600**

Appendix 3 – Interviews and Site Inspections

Presented in the table below is the list of interviews conducted with ASTC Staff.

Date	ASTC Staff	Position
01-Feb-21	Takudzwa Charlie	Manager Technical Services
02-Feb-21	Murray MacLeod	Workshop Coordinator
02-Feb-21	Martin Kemplay	ASALC Operations Coordinator
02-Feb-21	Jeremy Roberts	ASALC Operations Assistant
03-Feb-21	Oliver Eclipse	Manager Regional Waste Management Facility
03-Feb-21	James Sanders	Supervisor Regional Waste Management Facility
03-Feb-21	Kane Hynes	Supervisor Municipal Services (Acting Works Manager)
03-Feb-21	Takudzwa Charlie	Manager Technical Services
03-Feb-21	Luke Allen	Acting Manager ICT
04-Feb-21	Kim Sutton	Director Community
04-Feb-21	Dulip Nellikat	Developments Manager
04-Feb-21	Sabine Taylor	Director Corporate Services
05-Feb-21	Jodie Summers	Governance Manager
11-Feb-21	Mel Bennett	Manager Finance
12-Feb-21	Charlotte Klempin	Environment Officer
16-Feb-21	Robert Jennings	Chief Executive Officer
26-Feb-21	Steve Baloban	Infrastructure Manager

Presented in the table below is the list of ASTC facility inspections conducted.

Date	ASTC Facilities
02-Feb-21	Depot and Workshops
02-Feb-21	Alice Springs Aquatic and Leisure Centre
03-Feb-21	Regional Waste Management Facility
03-Feb-21	Town Centre

Document prepared by

Aurecon Australasia Pty Ltd
ABN 54 005 139 873

Level 5, 116 Military Road
Neutral Bay NSW 2089

PO Box 538
Neutral Bay NSW 2089
Australia

T +61 2 9465 5599
F +61 2 9465 5598
E sydney@aurecongroup.com
W aurecongroup.com