Water Infrastructure Asset Management Plan

Summary

CITY OF ADELAIDE

Contents

EXECUTIVE SUMMARY

1 The Purpose of the Plan

The City of Adelaide is responsible for an extensive and diverse asset portfolio valued at more than $2 billion, which represents a significant investment made over multiple generations. These assets play a vital role in providing essential services to our community and it is critical to ensure these assets continue to be effectively managed to enable ongoing service provision and benefits for both current and future generations.

Under South Australia's *Local Government Act 1999*, we are required to develop Asset Management Plans for a period of at least 10 years, which includes information about the operation, maintenance, renewal, acquisition, expansion, upgrade and disposal for each infrastructure assets class under our care and control.

The City of Adelaide has six Asset Management Plans, which includes Water Infrastructure, Transportation, Park Lands & Open Space, Buildings, Public Lighting and Electrical and Urban Elements. The fundamental purpose of this Water Infrastructure Asset Management Plan is to outline the Council's high-level asset management priorities for the operation, maintenance and renewal of our assets over the next 10 years. Additionally, it aims to improve the long-term strategic management of our Water Infrastructure assets, to cater for the community's required levels of service both now and into the future.

Work is currently underway to significantly improve the spatial data, asset condition information and asset attribute information utilised within this Water Infrastructure Asset Management Plan. These activities align with good asset management practices and will provide more granular information to enable robust analysis to inform future decision making. The outcome of this work, which is due for completion by June 2025, will enable a more mature Water Asset Management Plan with a higher degree of confidence for the future requirements of the asset class.

Therefore, due to the current maturity level of the asset data, this Water Infrastructure Asset Management Plan will be considered an interim document, which will be updated following the completion of the condition audit, and subsequent modelling and analysis.

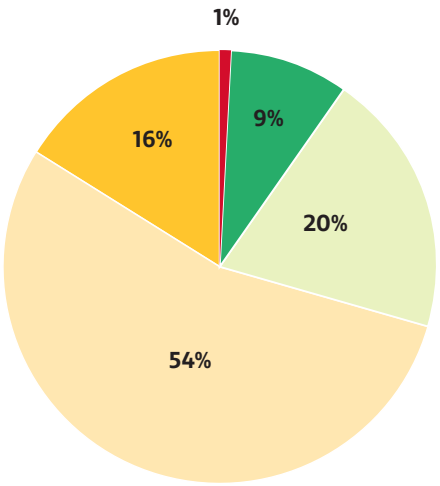
This interim plan defines the current state of our $282.1 million Water Infrastructure asset portfolio, as well as the asset management activities and associated funding requirements recommended for inclusion into the Long-Term Financial Plan and to achieve our asset performance targets.

2 Our Water Infrastructure Assets

The City of Adelaide's Water Infrastructure portfolio is valued at approximately $282.1 million and provides critical services which protect the community from heavy rainfall and flood events, conserve the ecological health of our waterways and provide recreational facilities and natural amenity within our Park Lands. These assets include the underground stormwater drainage network, stormwater management devices (e.g. detention basins, gross pollutant traps), Karrawirra Pari/River Torrens, Park Lands watercourses, potable and non-potable water distribution systems and sewer infrastructure.

A small proportion of our Water Infrastructure assets have shared management responsibilities with other government agencies. These include the Karrawirra Pari/River Torrens as well as specific Brown Hill Keswick Creek stormwater management devices located within Pakapakanthi/Park 16 and Kurangga/Park 20. The Torrens Lake, upstream of the Torrens Weir extending to Albert Bridge, is the sole responsibility of the City of Adelaide, with the remaining sections of the River outside of this area having shared management responsibilities. Stormwater infrastructure located within our Park Lands associated with the Brown Hill Keswick Creek catchment falls under the responsibility of the Brown Hill Keswick Creek Board, where financial contributions are made annually by subsidiaries in accordance with a funding deed.

To monitor the performance of our Water Infrastructure assets, we undertake condition audits at regular intervals. Asset condition information is analysed with respect to technical intervention criteria to inform our maintenance and renewal programs. The condition of our Water Infrastructure is generally rated in a fair condition, with an overall condition index rating of 2.8. 83% of assets are estimated to be in a very good to fair condition and 17% of assets are estimated to be in a poor or very poor condition, which form the general basis of our future renewal program priorities.



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

The Torrens Weir is an aging asset, originally constructed in 1881 with sluice gates added in 1929. Majority of its components are rated in a fair to poor condition and engineering inspections and recommendations have identified the need to undertake an options analysis (currently underway) to guide the future management of the asset as it approaches the end of its useful life.

It is important to note that the condition data for the underground stormwater network is considered to be of low reliability. Network wide condition data is not available and age data has been utilised to forecast the estimated condition rating where no condition data is available. A comprehensive network wide condition audit is currently underway for the underground stormwater network, which will provide improved asset data for renewal modelling and analysis for the next revision of this Asset Management Plan.

3 Community Engagement and Customer Satisfaction

In November 2021, we undertook an engagement process with city residents and visitors to better understand and measure levels of customer satisfaction for the services provided by our Water Infrastructure assets. A summary of the responses is shown below.

Category	Average Score	Very Poor (<40%)	Poor (40-54%)	Average (55-69%)	Good (70-84%)	Excellent (>85%)
Underground Stormwater Drainage Network	93%					●
Karrawirra Pari/River Torrens and Park Lands watercourses	85%					●

The overall feedback confirmed appropriate levels of customer satisfaction for the maintenance and renewal of our Water Infrastructure assets.

A Recommended Levels of Service Report was presented to Council, with the recommendations approved in November 2023. This report noted the community consultation undertaken and the associated benchmarking of current user satisfaction. Additionally, Council also approved the development of the Water Infrastructure Asset Management Plan based on the planning principles and recommended management strategies presented within the report and its attachments.

4 Current and Future Demands

It is anticipated that City of Adelaide will be subject to considerable change over the next ten years. This will result in our Water Infrastructure being subject to new demands that have the potential to impact future service delivery and the requirements of our existing assets.

Key demand drivers and future challenges will include:

- City growth
- Changing demographic
- Tourism & event growth
- Climate change and carbon neutrality
- Emerging technology
- Legislation & regulation

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets, providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, such as educating the community around alternative options, which facilitates service provision without the need to invest in new or upgraded infrastructure.

Demand management will include:

- Continuing to engage with our community through annual City User Profile surveys
- Developing a Stormwater Management Plan (SMP) to understand the existing performance of the stormwater drainage network and to provide solutions to mitigate flood risk and improve water quality
- Completion of the Adelaide Park Lands Strategic Water Resources Study to identify key initiatives to enable sustainable water resource planning for current and future demands
- Completion of the Water Sensitive Urban Design (WSUD) Priority Investment Study to identify key upgrade projects that will improve the quality of stormwater runoff
- Delivering priority upgrade/new projects identified within the Strategic Plan and Strategic Documents
- Ensuring stormwater assets are renewed to accommodate current and forecasted future storm events
- Ensuring climate risk mitigation and adaptation is a key focus for strategic planning, asset management and project delivery
- Continuing to review and update design standards and technical specifications to ensure our assets transition towards having a lower carbon footprint with improved circular economy outcomes through increased usage of recycled materials
- Continuing to partner with industry, to monitor and evaluate new and emerging technologies, with trials of new materials, approaches, and methodologies
- Continuing to monitor changes to legislation and ensure appropriate adaptation into asset management practices

5 Strategic Planning

Under the *Local Government Act (SA) 1999*, we are legislatively required to establish a suite of Strategic Management Plans, which guide Council's future planning, asset management and financial sustainability. An overview of these strategic management plans are shown below:

Strategic Plan ***Community***	Long term with a four year delivery focus. *Planning for the vision and aspirations of the Adelaide Capital City.*
Long-Term Financial Plan ***Financial***	Ten year Plan, revised annually to ensure a ten year view is maintained. *Planning for the long-term financial sustainability of the City of Adelaide.*
Asset Management Plans ***Infrastructure***	Suite of ten year Plans. *Planning for the sustainable renewal and maintenance of Council assets.*
City Plan ***Development / Built Form***	Ten year Spatial Plan. *Planning for the future land uses and built form of the Adelaide Capital City.*

Through the City of Adelaide Strategic Plan 2024 – 2028, Council's vision is:

Our Adelaide. Bold. Aspirational. Innovative.

Achieving our vision for the future will be guided by our long term aspirations:

Our Community: Vibrant, connected and inclusive
Our Environment: Resilient, protected and sustainable
Our Economy: Growing, innovative and responsive
Our Places: Interesting, purposeful and safe
Our Corporation: High performing, customer-centric and bold

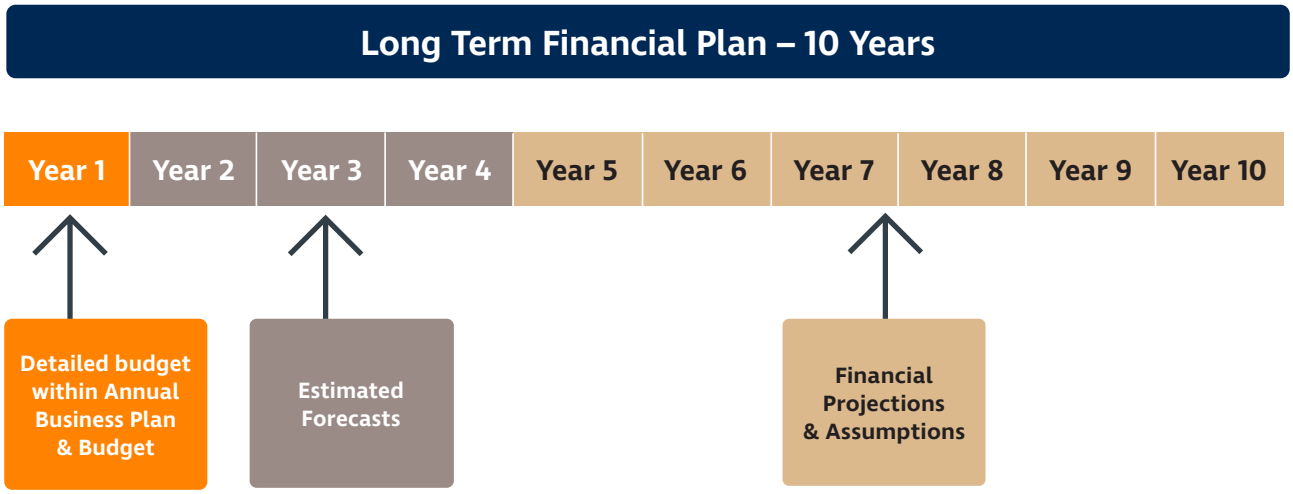
As Adelaide grows, we will need to consider economic vitality, social connectivity and wellbeing, distinctive precincts, environmental and financial sustainability, asset management and service delivery. To ensure we maintain our liveability and to support growth, these principles will underpin everything we do:

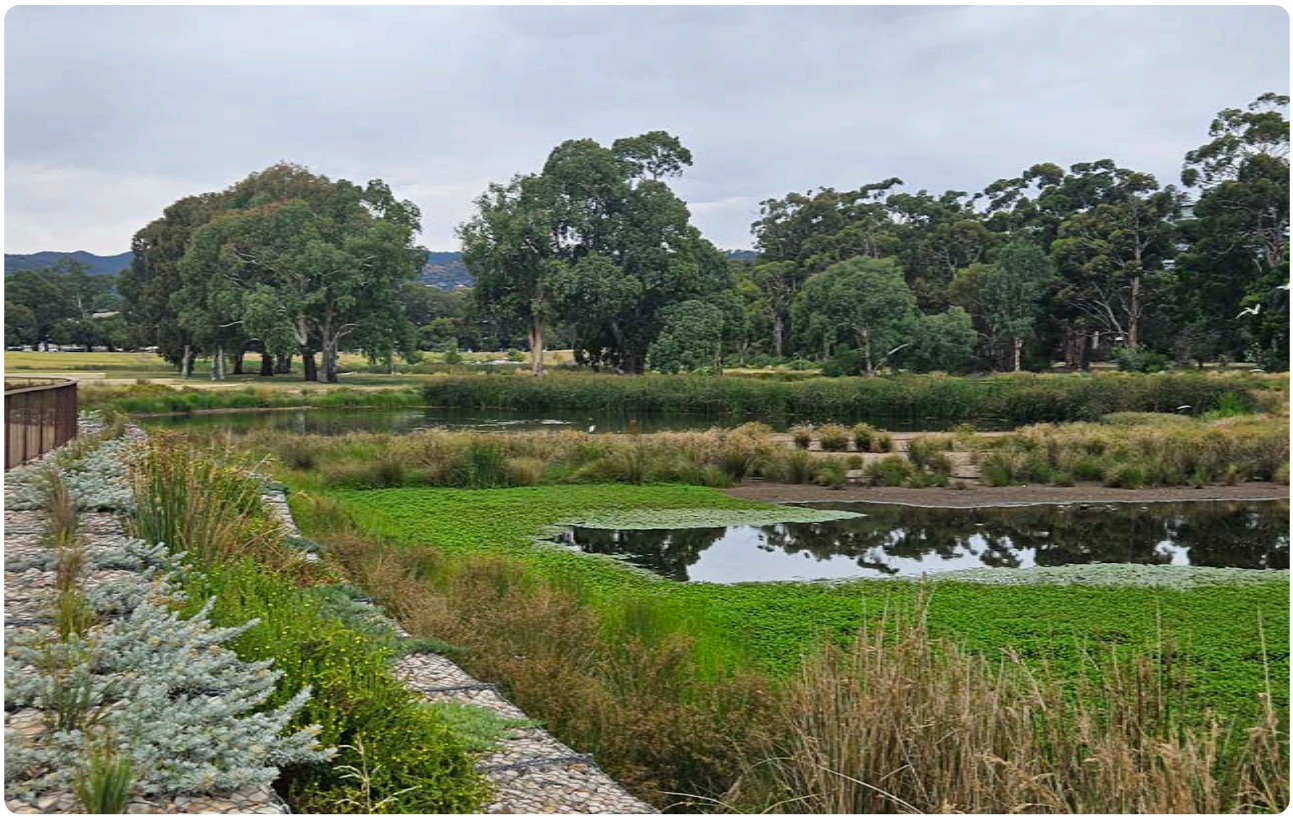
- Exceptional Amenity – Be bold and courageous in our pursuit of excellence for our city
- Quality Housing – Strive for liveability and affordability to attract and retain residents
- Community Connection – Strengthen connection, accessibility, diversity and inclusivity by putting people first
- Unique Experiences – Create interesting experiences for our residents, workers and visitors
- Climate Resilience – Embed climate resilience in all that we do
- Economic Growth – Encourage innovation, investment and development in current and emerging sectors
- Budget Repair – Provide quality services and ensure long-term financial sustainability

The Strategic Plan is supported by a suite of long and short-term strategies and action plans as well as a Resource Plan. The Resource Plan provides a four-year view of new and upgrade projects, resources, and budget requirements to deliver our Strategic Plan aspirations and objectives.

Integrated Delivery Planning ensures that prudent and efficient decisions are made, with line-of-sight between Council's Strategic Plan objectives and the major infrastructure projects we deliver. While this Asset Management Plan does not identify financial forecasts associated with new and upgrade projects, it does ensure required asset renewals are aligned (where practical) with key new and upgrade projects specified within the Resource Plan.

Each year our annual business plan and budget formalises funding allocations to continue providing services and progress new projects. It enables existing projects to move from one delivery stage to the next (e.g. progress concept design to detailed design and detailed design to construction) as well as consider emerging risks and opportunities that may result from Council decisions, community requests or other external factors.





6 Lifecycle Management

In order to effectively manage our assets, it is important to understand the relationship between all stages of the asset lifecycle. Effective asset management and sustainable financial planning requires a balance between the maintenance, renewal and disposal of existing assets and the delivery of new and upgraded assets.

Our goal is to provide assets that service the needs of the community, providing the agreed levels of service at the lowest lifecycle cost. To enable this, it is important to understand:

- How our assets are performing
- How our assets should be operated and maintained
- When our assets should be renewed
- When we should consider upgrading existing assets or constructing new assets
- How funding for new and upgraded assets is prioritised
- When we should consider disposing underperforming or underutilised assets

This Asset Management Plan's renewal strategy aims to minimise the number of assets that deteriorate into a poor condition and prohibit assets reaching a very poor condition. This strategy ensures we can continue to provide services in line with the community's expectations, appropriately manage risk and optimise whole-of-life costs. Renewal requirements have been identified through a combination of workshops with key infrastructure and maintenance staff and available condition audit information.

In addition to condition based renewal interventions, this asset management plan also forecasts service/capacity based renewal interventions to address known performance deficiencies (i.e. where pipe sizes and side entry pit inlet capacity is not sufficient to manage stormwater runoff) at strategic locations where streetscape upgrades are being undertaken (eg. Main Street Revitalisation Projects) as well as significant road renewal projects.

While we have proactive maintenance programs associated with legislative requirements for water quality testing, general operational and maintenance activities are typically evaluated and prioritised with respect to budget provisions within the Long-Term Financial Plan and Annual Business Plan and Budget. Following the completion of this Asset Management Plan, we will be reviewing operations and maintenance standards for Water Infrastructure assets, with a view to develop more structured and proactive maintenance regimes which provide an acceptable balance between cost, risk, and customer expectations. The associated financial impacts will need to be further considered in future revisions of this Asset Management Plan and the Long-Term Financial Plan.

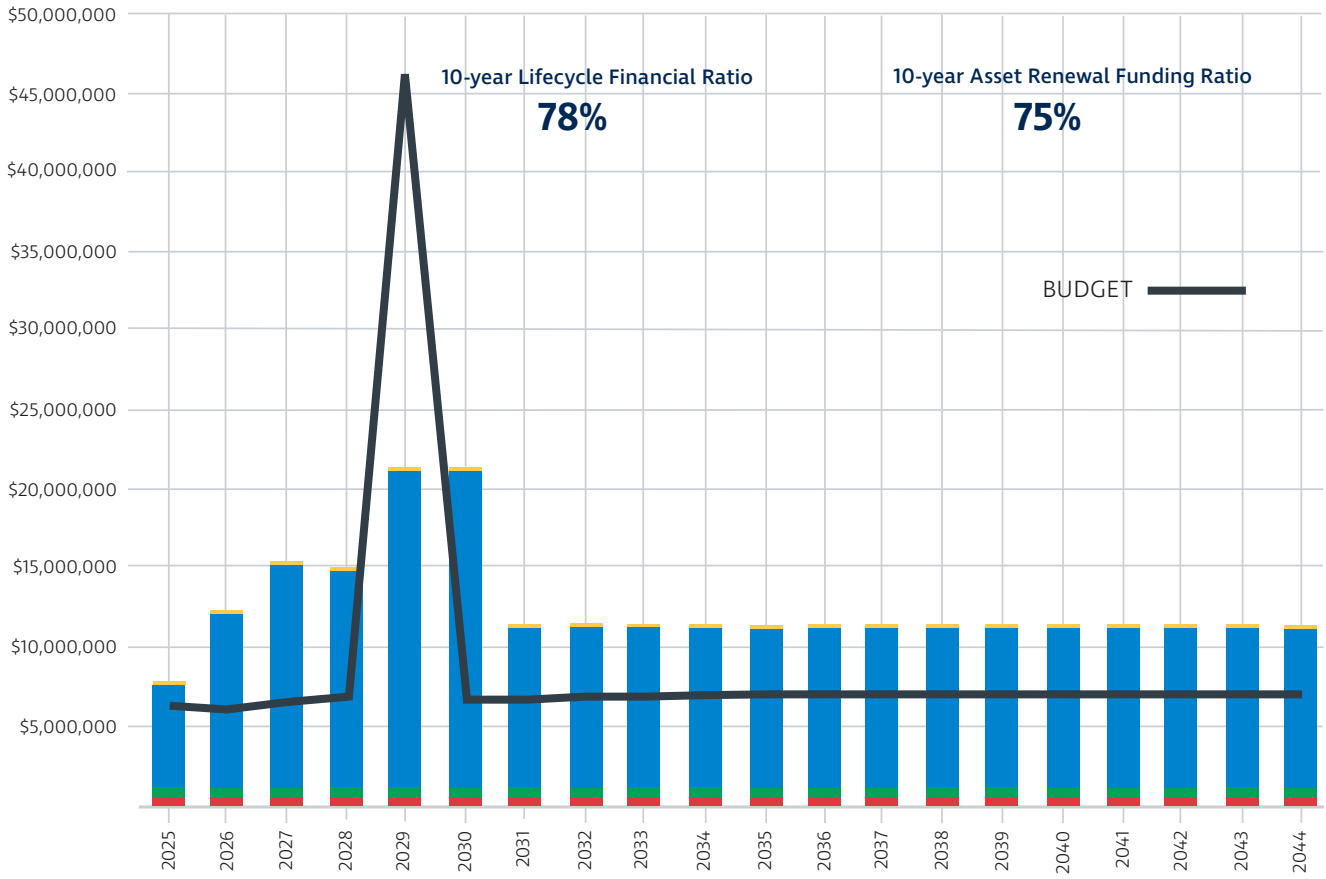
This Asset Management Plan does not identify financial forecasts associated with asset disposal, however where recommended, significant assets will be identified for decommissioning and disposal through Council Reports, to then be considered within the Long-Term Financial Plan and Business Plan and Budget.

7 Financial Summary

This Asset Management Plan defines the asset management activities and associated funding requirements recommended for inclusion into the Long-Term Financial Plan to achieve our asset performance targets. The lifecycle costs necessary to operate, maintain and renew our assets as outlined within this Asset Management Plan is approximately $13.95 million on average each year across the 10-year planning period. The associated 10-year annual average financial forecasts for renewal, maintenance and operation are presented below for Water Infrastructure assets.

Lifecycle Category	10-Year Annual Average Forecast
Renewal	$12.60 M
Maintenance	$0.73 M
Operation Cost	$0.62 M
Lifecycle Cost	$13.95 M

Currently, the lifecycle budget allocation within the Long-Term Financial Plan is only $10.84 million on average each year. This leaves a funding shortfall of $3.11 million on average each year and means we currently only have 78% of the costs (Lifecycle Financial Ratio) to deliver the required activities to sustain current levels of service.



LIFECYCLE SUMMARY

Annual Average first 10 years

Lifecycle Forecast	$13,952,439
Planned Budget	$10,842,650
Shortfall	-$3,109,789

MAINTENANCE

Annual Average first 10 years

Planned Budget	$734,502
Lifecycle Forecast	$734,502

OPERATION

Annual Average first 10 years

Planned Budget	$620,937
Lifecycle Forecast	$620,937

RENEWAL

Annual Average first 10 years

Planned Budget	$9,487,211
Lifecycle Forecast	$12,597,000

Noting that this Asset Management Plan has not forecast any additional operational and maintenance requirements, the identified lifecycle funding shortfall is associated with the revised asset renewal forecasting. The Water Infrastructure asset class generally requires additional renewal funding across the 10-year planning period to maintain existing levels of service.

The Asset Renewal Funding Ratio indicates that over the next 10 years our current budgets within the Long-Term Financial Plan account for 75% of the forecast funding required for the optimal renewal of our Water Infrastructure Assets. Contributing factors for the gap between the forecast renewal costs and current budgets within the Long-Term Financial Plan include:

- Not achieving our Asset Renewal Funding Ratio targets over the past 3 years (a result of covid-19 resourcing impacts and project delays associated with market saturation)
- Comprehensively reviewing our stormwater management planning principles, to appropriate recognise service-based renewal interventions aligned with key streetscape upgrade projects, with a requirement for increased pipe sizes and catchpit arrangements
- Ensuring we accurately recognise asset replacement costs, utilising current unit rates that take into consideration increasing costs associated with inflation and industry escalations. (We have experienced significant increases in project unit rates, noting that the Local Government Association (LGA) have indicated that costs and materials have increased up to 25% post pandemic).

Only what is funded in the Long-Term Financial Plan and approved through the Annual Business Plan and Budget can be delivered. Should the Long-Term Financial Plan be unable to accommodate the revised asset renewal forecasts recommended within this Asset Management Plan, there will be associated service and risk impacts.

Continuing to leverage off external funding opportunities will allow us to maintain and enhance the quality of the service we provide, while reducing financial pressures through the efficiencies in an increased revenue. We will continue to work in partnership with both the State and Federal Governments to pursue these opportunities for both renewal and significant new and upgrade projects.

8 Potential Service and Risk Impacts

If the forecast activities outlined within this Asset Management Plan (operations, maintenance, renewal) are unable to be accommodated into the Long-Term Financial Plan, there will be potential service consequences for users. These service consequences include:

- Reduced levels of service for Water Infrastructure
- Reduced customer satisfaction levels associated with the management of our existing assets
- Intergenerational inequity (burdening future generations)

These associated risk consequences include:

- Increased safety and property damage risks from stormwater flooding
- Increased safety risks associated with assets deteriorating beyond recommended intervention levels
- Increased environmental risks and associated reduction in amenity due to insufficient management of the Karrawirra Pari/River Torrens and Park Lands water courses including adjacent assets
- Increased reputational risks associated with services not aligning with community expectations
- Increased financial risks associated with additional maintenance requirements that cannot be accommodated within existing budgets
- Increased financial risks associated with higher renewal and/or rehabilitation treatments as asset renewals are not funded at the optimal point in time
- Increased economic risk associated with reduced business activity, events and tourism
- Intergenerational inequity (passing on costs and risk to future generations)

If the forecast activities outlined within this Asset Management Plan are unable to be accommodated into the Long-Term Financial Plan, we will endeavour to manage these risks within available funding by:

- Continuing to undertake regular asset condition and maintenance inspections
- Prioritising all asset renewal and maintenance activities with respect to available budget
- Revising our levels of service to establish an acceptable balance between cost, level of service and risk
- Developing a communication strategy to manage expectations and educate the community around affordable levels of service
- Continuing to seek out external funding opportunities
- Prioritisation of the delivery of key actions from the Improvement Plan

9 Monitoring and Improvement Program

The next steps resulting from this Asset Management Plan to improve asset management practices are:

	Improvement Plan Actions
1	Comprehensive update of this Asset Management Plan following the completion of spatial data improvements, asset condition audit and asset revaluation.
2	Finalise the Stormwater Management Plan to identify key priority upgrade projects that will improve the city's overall flood resiliency as well as improve water quality for the Karrawirra Pari/River Torrens and Park Lands watercourses.
3	Finalise the Adelaide Park Lands Strategic Water Resources Study to identify key initiatives to enable sustainable water resource planning for current and future demands.
4	Finalise the Water Sensitive Urban Design (WSUD) Priority Investment Study to identify key priority upgrade projects that will improve the quality of stormwater runoff that is discharged into natural water courses.
5	Finalise a 4-year Resource Plan to identify key upgrade/new projects to deliver Council's Strategic Plan objectives. Once key projects are recognised within the Long Term Financial Plan, Asset Management Plans will be updated to ensure associated acquisition costs (upgrade/new) and ongoing operational and maintenance costs are appropriately recognised, in conjunction with any scheduling adjustments required for asset renewal programs.
6	Revise asset renewal forecasts for the Torrens Weir following the completion of the Lifecycle Study and Options Analysis.
7	Continue to work in partnership with both the State and Federal Governments to pursue external funding opportunities for both renewal and significant upgrade/new water infrastructure projects.
8	Review and update operations and maintenance standards, to develop more structured and proactive maintenance regimes which provide an acceptable balance between cost, risk, and customer expectations. Include changes into future revisions of this Asset Management Plan and Long Term Financial Plan.
9	Continue to undertake regular condition audits and revaluation for all our water infrastructure assets within the nominated 4-year cycles, including regular review of asset useful lives.
10	Continue to review our technical standards for water infrastructure with respect to climate resilience, circular economy, recycled materials, durability and performance, whole-of-life cost, amenity, and heritage requirements.
11	Continue to monitor forecast climate change impacts to ensure we remain resilient through proactively implementing appropriate mitigation and adaptation controls.
12	Improve the capture of carbon emission data for technical standards and project procurement to support lower carbon decision making.
13	Review of corporate performance measure targets for customer satisfaction, to assist with performance gap analysis.
14	Review and standardise asset hierarchies for all asset categories within Water Infrastructure.
15	Review customer service requests codes to better align with Level of Service reporting and operational and maintenance sub-activities.

CITY OF ADELAIDE