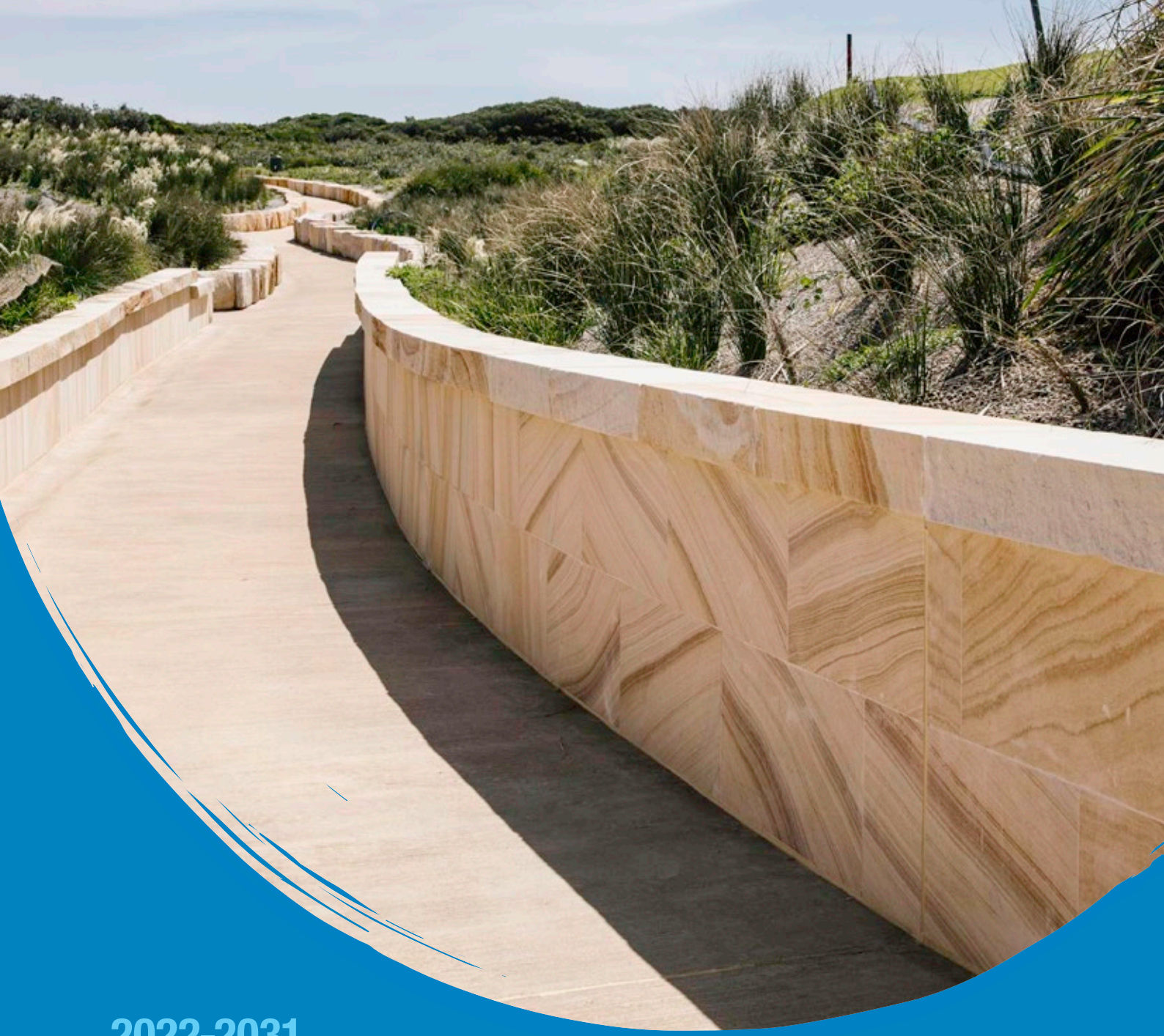


2022-2031

Asset Management Plan Retaining Wall

Randwick City Council
a sense of community

June 2022

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset Management planning is a comprehensive process to ensure infrastructure benefits are optimised to meet community needs in a financially sustainable manner.

This Retaining Wall Asset Management Plan (Retaining Wall AMP) details information about retaining wall assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and funding requirements over the 10-year planning period. The Retaining Wall AMP funding model supports the development of the Long-Term Financial Plan and overall Resourcing Strategy of the Integrated Planning and Reporting Framework.

1.2 Asset Description

This plan covers Randwick City Council's Retaining wall assets which comprise of various types of retaining wall including:

Asset Components	Quantity
Timber Retaining Walls	24
Sandstone Retaining Walls	149
Concrete Block Retaining Walls	87
Brick Retaining Wall	48
TOTAL	**308**

The above infrastructure assets have a replacement value estimated at $18,967,437.

1.3 Levels of Service

The allocation in the planned budget for retaining wall assets is sufficient to continue providing services at agreed levels of service for the planning period.

The main objectives of the planned funding budget are:

- There is sufficient budget allocated for renewal of assets as they reach the end of life.
- There is sufficient budget in maintenance and operations with minor increase in the future years.
- There is sufficient budget to acquire new assets to meet community needs.

1.4 Future Demand

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

- The need to construct retaining walls to improve the topography of open space land associated with new facilities or upgrades.
- New private development to accommodate a projected increase in population of 23% by 2036 as estimated by the NSW Department of Planning, Industry and Environment.

- There is no foreseeable significant level changes to the road network within the next 10 years.

Recently, there has been a demand to create vehicular access through steep terrain. This trend is likely to continue. However, the retaining walls arising from this demand are generally funded by the developer.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and constructing new assets. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures. To manage demand effectively, consideration must be given to:

- Balancing priorities for infrastructure with what the community is prepared to pay
- Assess capacity to fund current and improved levels of service
- Timing of renewal projects with acquisition projects through effective project management

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this Retaining Wall AMP includes operation, maintenance, renewal, acquisition, and construction of new assets. This AMP has been developed to inform the Long-Term Financial Plan over a period of 10 years. The 10-year forecast total funding requirement for the retaining wall asset class is estimated at $2,530,833 or an average of $253,083 per year.

Retaining walls are assets with a long life. The age profile of this asset class results in the requirement for only a small amount of renewal work during the 10-year planning period.

Overall, our retaining wall assets are depreciating by $207,807 annually which is less than the proposed average annual funding over the AMP planning period.

This means that more funding will need to be allocated in the planning period beyond this AMP to sustainably manage retaining wall assets.

1.6 Financial Summary

1.6.1 What we will do

The forecast funding budget for the 10-year period is $2,797,486 or an annual average of $279,749 as per the Long-Term Financial plan or Planned Budget. This figure equates to 111% of the cost to sustain the current level of service at the lowest lifecycle cost.

To manage infrastructure, we can only manage assets based on what is funded in the long-term financial plan. The Informed decision making depends on the Retaining Wall AMP emphasising the consequences of planned funding on the service levels provided and risks.

The planned funding budget for retaining wall assets is $26,665 more, on average, per year of the forecast lifecycle costs required to provide services in the AMP. This is shown in the figure below.

It is proposed that the forecast budget amount be included in the Long-Term Financial Plan for the retaining wall asset class.

Forecast Lifecycle Costs and Planned Budgets

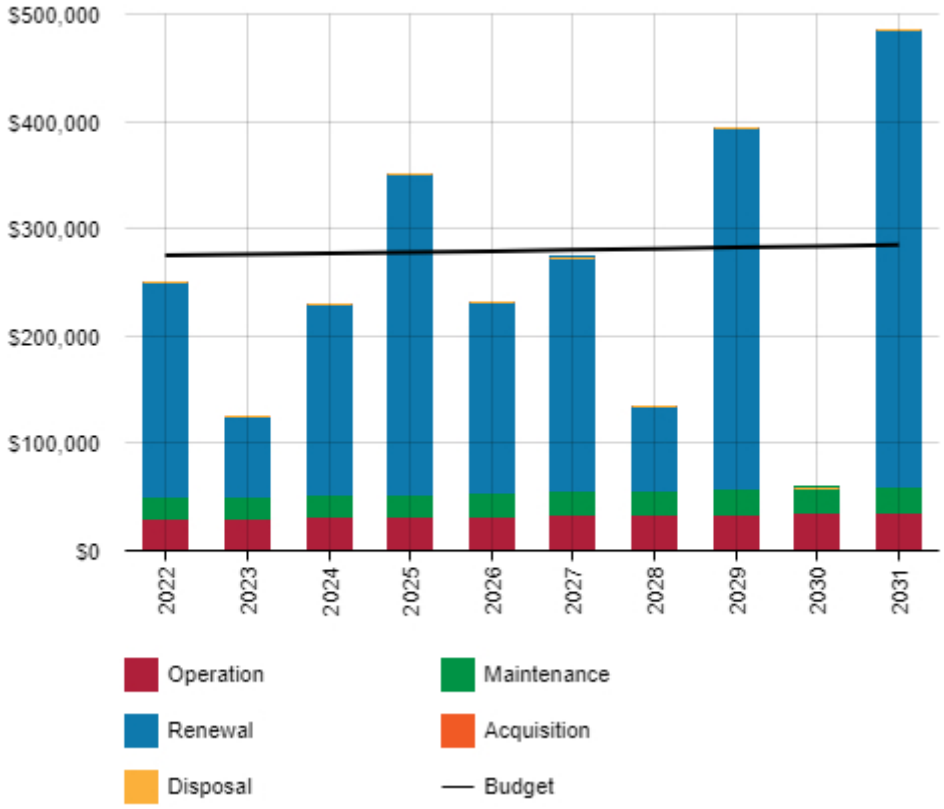


Figure values are in current dollars.

We plan to provide funding for retaining wall assets to undertake:

- Operation, maintenance, renewal and acquisition of retaining wall assets to meet service levels.

1.6.2 What we cannot do

We currently do **not** allocate funding to exceed service levels or expand the network as an accelerated program. Works and services that cannot be provided under present funding levels are:

- Expansion of the retaining wall asset class faster than the current planned rate
- Betterment of existing retaining walls prior to the forecast renewal date

1.6.3 Managing the Risks

Our present forecast funding levels are sufficient to continue to manage risks in the medium term. The main risks associated with this asset class are:

- Council staff unable to meet service levels due to inadequate funding
- Dilapidated retaining wall assets due to lack of planning
- Public safety risks arising from lack of inspections and maintenance

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

- Ensuring asset management practices are followed as set-out by this AMP
- Funding requirements are appropriately allocated, and programs developed

- Continual focus on asset condition assessment and validation
- Ongoing dialogue and consultation with the community

1.7 Asset Management Planning Practices

Key assumptions made in this Retaining Wall AMP are:

- Asset values and dimensions are correct
- 100% of Council's retaining wall assets have been inspected
- The estimates used for current rates of renewal will remain constant
- Assets requiring renewal are identified from the asset register method

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

This Retaining Wall AMP is based on a highly reliable confidence level of information.

1.8 Monitoring and Improvement Program

The next steps to improve asset management practices for the Retaining Wall AMP are:

- Improve asset register data confidence
- Review resilience of service delivery
- Include priority weighting methodology in maintenance and operation of assets. The four categories include: Condition, Functionality, Usage and Criticality
- Improve proactive maintenance planning and reporting mechanisms
- Establish a Strategic Asset Management system
- Improve council staff awareness of asset management principles

2.0 Introduction

2.1 Background

This Retaining Wall AMP details the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the 10-year planning period.

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

- Randwick City Plan - Community Strategic Plan (CSP)
- Informing Strategies – Arts and Culture, Economic Development, Environment, Housing, Inclusive Randwick, Integrated Transport and Open Space and Recreation
- Randwick Local Environmental Plan
- Randwick Council Resourcing Strategy including the Asset Management Strategy, Long Term Financial Plan, Workforce Management Plan and Digital Strategy
- Delivery Plan and Annual Operational Plans
- Asset Management Plans
- Randwick City Council Community Consultation Principles and Consultation Planning Guide.

The infrastructure assets covered by this AMP include retaining walls constructed using various material and methods including but not limited to sandstone, brick and concrete blocks. For a detailed summary of the assets covered in this AMP, refer to section 5.

These assets are used to provide level ground above and below the retaining wall along naturally sloping terrain.

The infrastructure assets included in this plan have a total replacement value of $18,967,437.

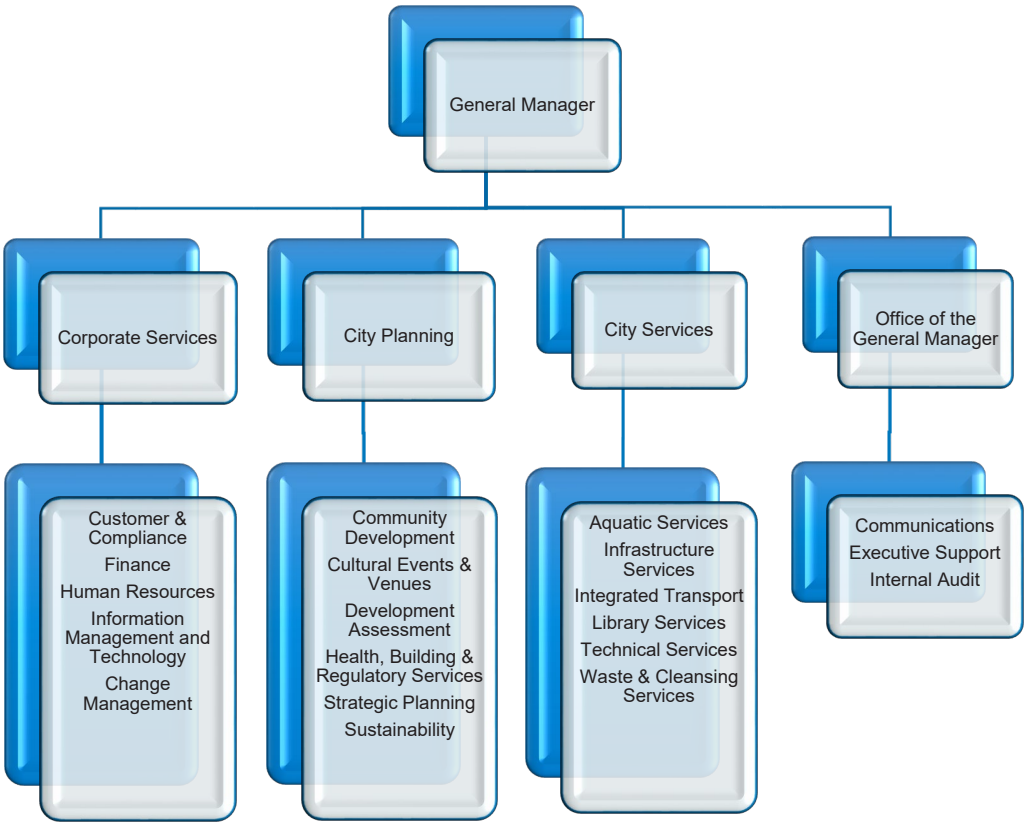
Key stakeholders in the preparation and implementation of this retaining wall AMP are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AMP

Key Stakeholder	Role in Asset Management Plan
Council Representatives	Represent needs of community/shareholders. Allocate resources to meet planning objectives in providing services while managing risks. Ensure service is sustainable.
Council Officers	Manage retaining wall assets over their lifecycle. Ensure level of service provided meets needs of residents and visitors. Implement the components identified in the Retaining wall AMP.
Residents	Core users of infrastructure assets.

Key Stakeholder	Role in Asset Management Plan
	Their needs, wants and expectations are conveyed to the Council and should be reflected in desired levels of service.
Visitors	Second largest users of infrastructure assets. Their needs, wants and expectations drive the replacement in areas of the highest visitor usage and commercial areas.
Insurers	Insurers have interest in implementation of systems which allow Council to gain better knowledge of the condition of their assets. Systems should be reflected in the number of claims made against each asset group.

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



2.2 Goals and Objectives of Asset Ownership

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

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

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

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Risk Management – utilise Council's Risk Management Framework to effectively mitigate risks arise,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

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

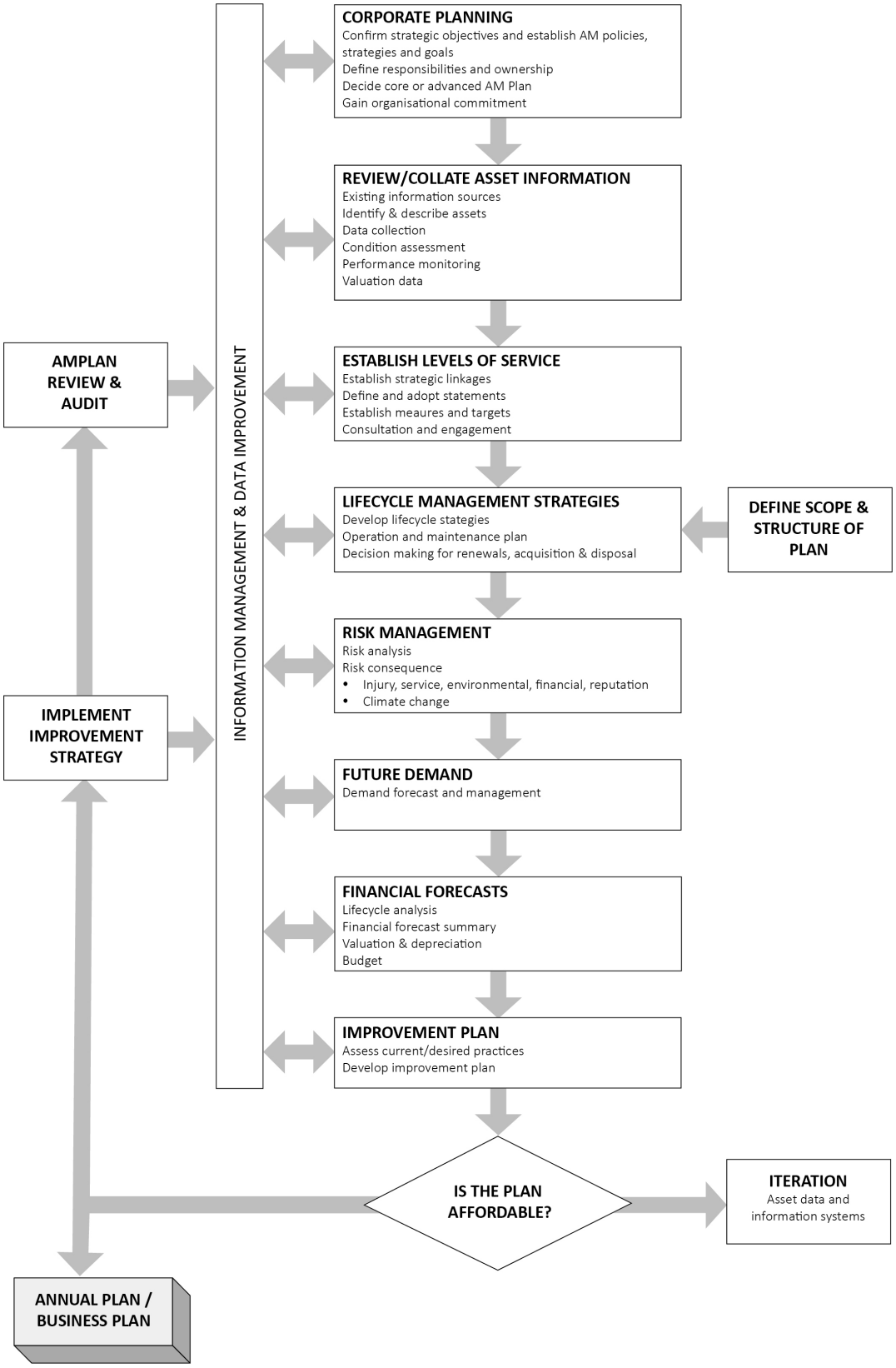
- International Infrastructure Management Manual 2015 [1]
- ISO 55000[2]

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13

[2] ISO 55000 Overview, principles and terminology

A road map for preparing an AMP is shown below.

Road Map for preparing an Asset Management Plan
Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 LEVELS OF SERVICE

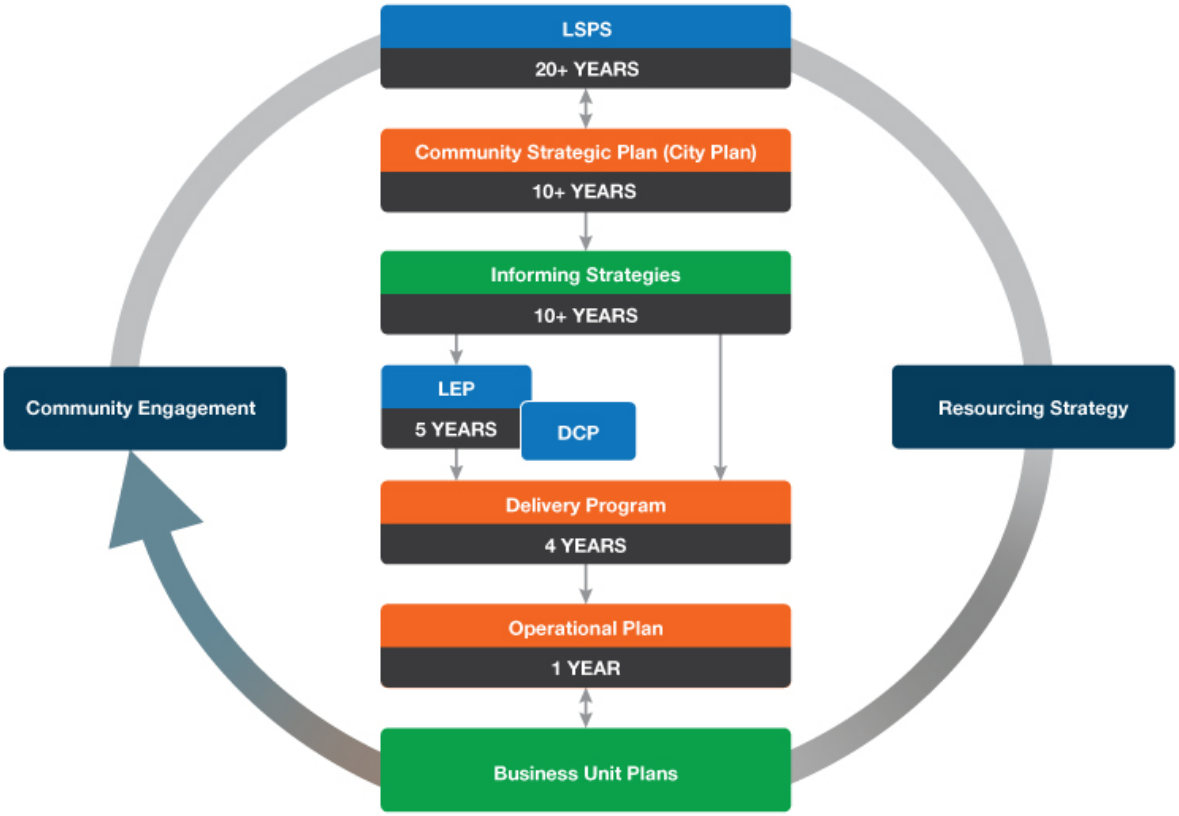
3.1 Customer Research and Expectations

Levels of service should be developed in consultation with the community. Future revisions of the AMP will incorporate customer consultation on service levels and costs of providing the service. This will assist the Councillors and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

We currently have historic understanding of customer expectations. Community satisfaction information has been used in developing the 10-year Randwick City Plan and in the allocation of resources in the budget.

3.2 Strategic and Corporate Goals

This AMP is prepared under the direction of the 10-year Community Strategic Plan and Informing Strategies within the Integrated Planning and Reporting (IPR) framework. This AMP forms part of the Resourcing Strategy.



Strategic goals have been set in the Randwick City Plan (CSP). The relevant goals and objectives and how these are addressed in this AMP are summarised in Table 3.2.

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

Randwick City Plan Outcome	Direction	Objective	How Goal and Objectives are addressed in the AMP
Outcome 1. Leadership in Sustainability	Direction 1a: Council has a long-term vision based on sustainability.	Ensure financial strategies underpin Council's asset management policies and strategic vision.	The Retaining Wall Asset Management Plan aligns with Council's Resourcing Strategy, including the Asset Management Strategy, Workforce Plan and Long-Term Financial Plan.
Outcome 6: A Liveable City	Direction 6a: Our public infrastructure and assets are planned, managed, and funded to meet the community expectations and defined levels of service.	Plan asset renewals and construct or accept dedication of new assets in accordance with adopted service levels.	The Retaining Wall Asset Management Plan includes funding for renewal and new assets including provisions for performance monitoring against adopted service level.
Outcome 6: A Liveable City	Direction 6c: The safety of our community is paramount and is acknowledged and supported through proactive policies, programs, and strategies.	Conduct programmed maintenance and minor reactive maintenance management in accordance with adopted service levels.	Conduct regular condition assessment to plan maintenance Respond to customer requests within service level agreements. Identify High and Extreme risk retaining walls. Planned inspections for High and Extreme risk retaining walls. Develop an operational and maintenance plan and allocate funding to carry out remediation work as required.

3.3 Legislative Requirements

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

Table 3.3: Legislative Requirements

Legislation	Requirement
NSW Local Government Act 1993	Sets out role, purpose, responsibilities, and powers of local government including the preparation of a long-term financial plan supported by asset management plans for sustainable service delivery.

Legislation	Requirement
Roads Act 1993	To provide public access to roads, to classify roads, to act as the local road authority, to carry out certain functions e.g. road works and to regulate activities on public roads.
Civil Liability Act 2002 and Civil Liability Amendment (Personal Responsibility) Act 2002	Protects the Council from civil action by requiring the court to consider the financial resources, the general responsibilities of the authority and the compliance with general practices and applicable standards.
Workplace Health and Safety Act 2011	Protecting Works and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising from work.
Australian Accounting Standard AASB116	Reporting on asset condition and consumption to Councillors, management, and the community.
Native Vegetation Act	To manage native vegetation, to prevent broad scale clearing, to protect native vegetation, to improve native vegetation and to encourage revegetation of land.
Protection of the Environment Operations Act 1997	A state legislation to protect, restore and enhance the environment in NSW. They provide both the framework for Council decisions that affect the environment and the means of adopting Australia-wide environment protection measures set by the National Environment Protection Council.

3.4 Customer Values

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

Customer Values indicate:

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

Table 3.4: Customer Values

Service Objective: **Retaining Wall that is fit for purpose, maintained in a safe and accessible manner.**		
Customer Values	**Customer Satisfaction Measure**	**Expected Trend Based on Planned Budget**
A retaining wall that is safe for all road users	Number of claims received	Number of claims is reducing.
A well-maintained retaining wall	Requests for retaining wall maintenance	Reduction in maintenance requests for retaining walls

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition A condition 6 (scale 1 to 10) retaining wall is the minimum acceptable service level;

Function The retaining wall must be fit for purpose and the intention of the retaining wall asset shall be well defined;

Safety The retaining wall is built to safety standards;

Capacity/Use Retaining wall should be designed to appropriate design specifications to retain the material at all times;

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

These are measures of fact related to the service delivery outcome (e.g. number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Service Objective: Provision of safe retaining wall assets.				
Condition	Provide retaining walls free from obvious defects.	Respond to CRM's within SLA timeframe	94% CRM's inspected within SLA time frame to make the site safe	Maintain the current performance
		Organisational measure % of retaining walls in very good/good condition and poor/very poor condition	86.52% good to very good condition	Maintain the current performance
	Routinely inspect Retaining wall assets	20% of the network to be inspected annually	Achieved	Maintain the current position
	Confidence levels		Medium	High
Function	Retaining structures meet user requirements	Projected retaining wall renewals are completed when required	There is currently no retaining wall renewal backlog	Maintain the current performance
	Confidence levels		Medium	High

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Safety	Retaining walls are safe for their intended purposes	Respond to CRM's within SLA timeframe	94% resolved within SLA time frame	Maintain the current performance
	Confidence levels		Medium	High
Capacity and Use	Retaining walls help provide safe user environment	Pedestrians and other road users can rely on the retaining wall to provide safe access	Retaining walls are provided only when there is no effective alternate solution	Maintain the current performance
	Confidence levels		Medium	High

3.6 Technical Levels of Service

Technical Levels of Service – Measures of operational or technical performance used to deliver the customer value and achieve Customer Levels of Service. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

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

- **Acquisition** – the activities to provide a higher level of service (e.g. extension of retaining wall, raising retaining wall height or relocate retaining wall) or a new service that did not exist previously (e.g. a new wall).
- **Operation** – the regular activities to provide services (e.g. mowing grass on top of the wall, inspections, weed cleaning, 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. clearing of weep holes, repointing of joints, etc),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. replacing a retaining wall that has significant rotation and rank as high risk, anchoring of retaining wall, etc)

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

Table 3.6 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AMP.

Table 3.6: Technical Levels of Service

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

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Acquire new retaining walls	As needed as part of other projects or development	Upgrade / new retaining walls are funded by the developer or under the project budget with new assets capitalised into the retaining wall register	Maintain current approach
		Budget	Not applicable	
Operation	Apply a risk management approach to retaining wall inspections	Annual inspections	20% of the total number of walls are inspected per annum	Satisfied with current performance
		Budget	$32,849	$32,849
Maintenance	Respond to service requests.	Service requests completed within established service levels.	94% resolved within SLA time frame	Satisfied with current performance
	Identify planned maintenance	Annual inspections	20% of the total number of walls are inspected per annum	Satisfied with current performance
		Budget	$21,899	$21,899
Renewal	Infrastructure meets needs of users.	Retaining walls are renewed when required	Retaining walls are renewed as required	Satisfied with current performance
		Budget	$225,000	$198,335
Disposal	Infrastructure meets needs of users.	As required as part of other projects or development	Retaining wall disposal is funded by the developer or under the project budget with new assets capitalised into the retaining wall register	Maintain current approach
		Budget	Not applicable	

Note: * Current activities related to Planned Budget.

** Expected performance related to forecast lifecycle costs.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

4.0 FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

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

4.3 Demand Impact and Demand Management Plan

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

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

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

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population	154,265 (As per Randwick Housing Strategy 2021	NSW DPIE projects a 23% increase in population by 2036 within the Randwick Local Government Area	An increase in population will require an increase in community and infrastructure services. Existing services may require amendment to cater for changes in use or increased patronage	The demand of retaining walls for the purpose of creating vehicular access to new developments These demands are managed with each development
Technology Changes	Materials used for retaining wall construction are concrete or masonry products	Seek to reduce environmental impact, improve constructability, relatively affordable and longer asset life with reduced maintenance requirements	Potential to reduce maintenance and resource requirements	New and emerging technologies should be assessed for both performance, abilities to improve service and whole of life costs

4.4 Asset Programs to meet Demand

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

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

4.5 Climate Change Adaptation

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

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.[4]

As a minimum, we have considered how to manage our existing assets given potential climate change impacts for our region.

Risk and opportunities identified to date are shown in Table 4.5.1

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

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Increased Rainfall Intensity	Higher Chances of flash flooding. Increase in rain intensity, longer drought period	Higher rainfall intensity will likely result in more overland flow and more ground water, increasing the number of instances that loading behind the retaining wall is maximised	Construction of retaining wall assets with better drainage and capacity to cater for increased infiltration.
Need to be carbon neutral	Civil works are high carbon emitting activities. Seek to reduce carbon emission from civil works	Maintain or reduce the energy required to undertake retaining wall construction	Use of renewable materials where possible, recycled fill material or use of virgin fill where possible can reduce the amount of landfill

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

- Assets will withstand the impacts of climate change
- Services can be sustained; and

[4] IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

Table 4.5 summarises some asset climate change resilience opportunities.

Table 4.5 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
Sandstone Retaining Walls	Weathering, salt attack	Inspect every 5 years from construction, assess in accordance with condition rating tables in Section 5.1.3
Brick Retaining Walls	Increased rate of water pressure build up behind walls	Improve drainage for the retaining walls. Design to ensure that the retaining walls drains can be maintained

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

5.0 LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

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

Table 5.1.1: Assets covered by this Plan

Asset Components	Quantity	Replacement Value
Timber Retaining Walls	24	$136,842
Sandstone Retaining Walls	149	$8,869,435
Concrete Block Retaining Walls	87	$7,675,100
Brick Retaining Wall	48	$2,286,060
TOTAL	**308**	$18,967,437

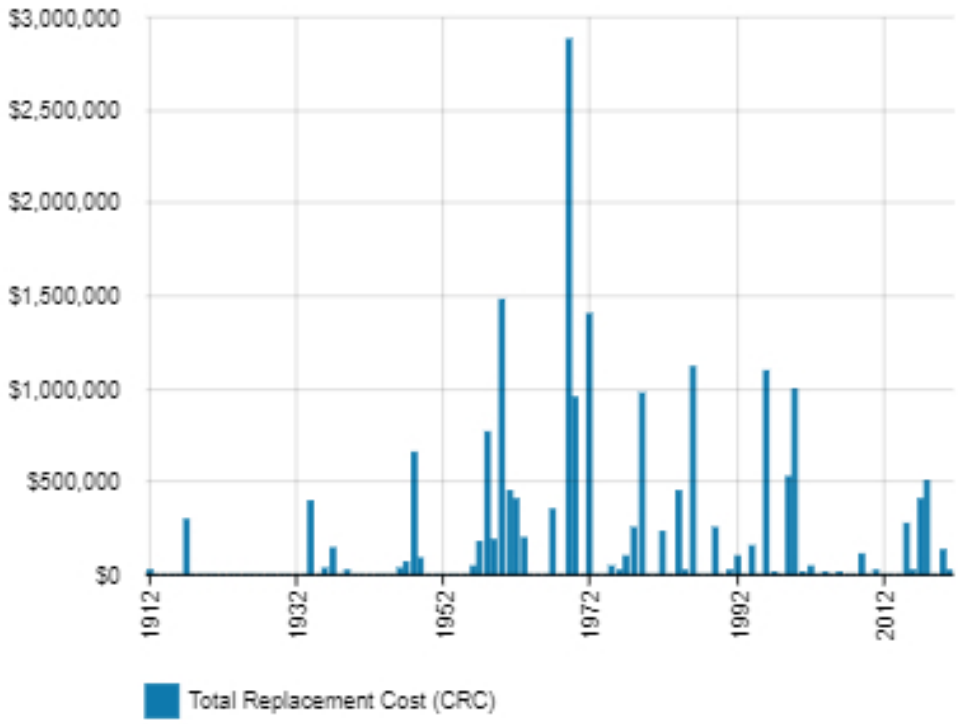


Figure 5.1.1: Asset Age Profile

All figure values are shown in current day dollars.

According to Figure 5.1.1, the majority of retaining walls have been built in the 1960s. Based on our asset life for retaining walls, significant renewal demand is due around 2060.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available.

There are no deficiencies identified in the retaining wall asset class.

5.1.3 Asset condition

Condition is currently monitored by inspection of 20 percent of the network every year. The condition assessment of retaining wall assets is encompassed within this plan.

Condition is measured using a 1 – 5 grading system[5] from the IIMM. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system is used at Council's asset definition level as detailed in Table 5.1.3 These condition ratings can be easily translated to a 1 – 5 grading scale when reporting to OLG.

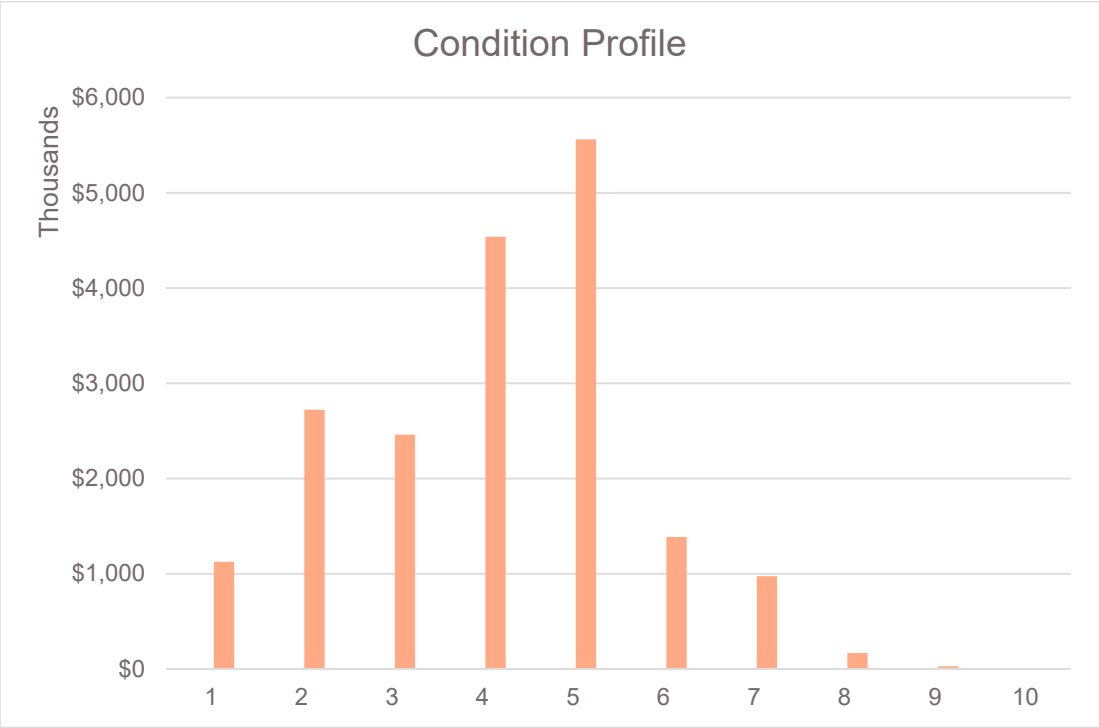
Table 5.1.3: Retaining Wall Condition Grading System

Condition Rating	Condition Index	Condition Description
1	**New**	New retaining wall, no defects.
2	**Excellent**	Near new in appearance, no defects such as cracking, displacement or rotation in wall.
3	**Very Good**	Very minor aesthetic deterioration. Retaining wall appears a few years old but still structurally sound.
4	**Good**	Some aesthetic deterioration. Extremely minor cracking (hairline) may be slightly visible however still no displacement nor rotation in wall.
5	**Average**	Moderate deterioration becoming evident. Small cracking now visible (credit card width) possibly due to tree roots and soil pressure causing the initiation of minor displacement and rotation in wall.
6	**Satisfactory**	Cracking in wall (<5mm) possibly due to more extensive tree root damage and soil pressure making it clearly evident throughout wall. Displacement is visible in some parts of the wall, as is rotation from lateral pressure.
7	**Unsatisfactory**	Cracking in wall (<10mm) however structural damage now more severe. Tree roots and soil pressure causing evident displacement and rotation and some minor loss of land fill.
8	**Poor**	Extremely poor aesthetic condition, large cracks (10mm-20mm), rotation increased since last inspection, wall now losing capability to retain backfill. Consider intervention.
9	**Reconstruction Required**	Large cracks (>20mm), displacement and or rotation of the wall shows that wall function is greatly diminished.
10	**Isolation Required**	Retaining wall at risk of failing. Large cracks (>50mm), displacement and or rotation of the wall is deemed at an unsafe level and poses risk of injury and or property damage.

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

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

Figure 5.1.3: Asset Condition Profile



All figure values are shown in current (real) dollars.

The overall condition of retaining walls is good with most asset conditions better than average and very few assets in poor condition.

Should these assets not be maintained throughout their lifecycle, then the overall condition will decline and risks associated with retaining walls may increase.

Management of these assets with timely maintenance intervention to extend the life of the asset, may change the asset renewal timeframe. Other options would include to bring forward or delay some of the renewal timeframes based on a risk assessment approach.

5.2 Operations and Maintenance Plan

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

Maintenance includes all actions necessary to keep an asset as near as practicable to an appropriate service condition. These regular actions include ongoing day-to-day work, asphalt patching and potholes rectification.

The trend in maintenance budgets for retaining walls is shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget $
2020	$20,000
2021	$20,000
2022	$20,000

Maintenance budget levels are adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AMP, and service risks considered in the Infrastructure Risk Management Plan.

Assessment and priority of reactive maintenance is currently undertaken by staff using experience and sound professional judgement. There is an inherent risk in depending on staff to use experience. The risk is identified in the Section 6 under Risk Management. The improvement plan in Section 8.2 also indicates an improvement on the prioritisation methodology.

5.2.1 Asset hierarchy

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

The service hierarchy is shown is Table 5.2.2.

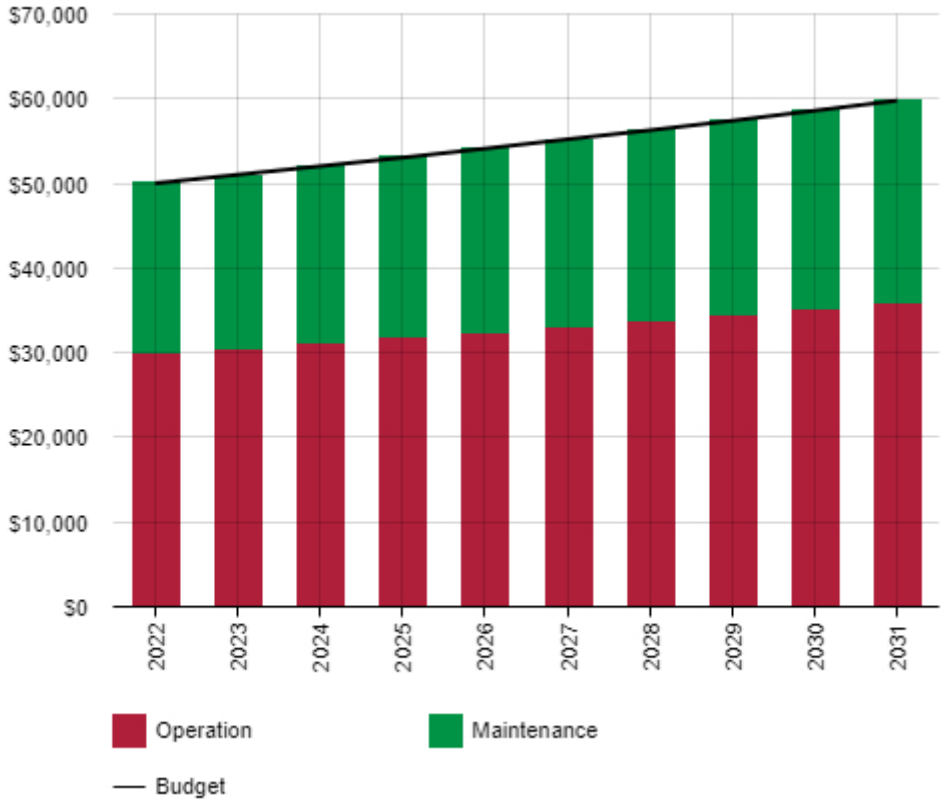
Table 5.2.2: Asset Service Hierarchy

Hierarchy	Service Level Objective
Very High Retaining Walls	To inspect, assess and make the asset safe within 24 hours of reporting. Plan the rectification to minimise reconstruction costs
Critical Retaining Walls	To inspect, assess and make the asset safe within 24 hours of reporting. Plan the rectification to minimise reconstruction costs

5.2.2 Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed, the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

The forecast operations and renewal costs are in line with the proposed operations budget. However, with the growing cost of material, labour, and new acquisitions, it is likely that the budget for future operations and maintenance will require review every 5 years to keep up with the growing cost. The increase in maintenance cost while insignificant, will create deferred maintenance items causing increased deterioration rate and a shorter lifespan of assets.

5.3 Renewal Plan

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

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

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

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed on 30 June 2021.[6]

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Sandstone Retaining Walls	120 years
Timber Retaining Walls	50 years
Brick Retaining Walls	80 years
Concrete Block Retaining Walls	100 years

The estimates for renewals in this AMP were based on the asset register method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).[7]

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

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[8]

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

Table 5.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Community – Function	30%
Community – Quality	15%
Technical – Risk of Failure	40%
Technical – Operating/Maintenance and lifecycle costs	15%
Total	**100%**

[6] D03483347

[7] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

[8] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix C.

Figure 5.4.1: Forecast Renewal Costs

All figure values are shown in current day dollars.

The forecast renewal costs are generally below the proposed renewal budget. As an average, this is an indicator that there is sufficient funding for renewal of assets in the next 10 years. The surplus captured under renewal is sufficient to cater for renewal projects in the next 10 years.

5.5 Acquisition Plan

Acquisition is defined as new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Randwick City Council.

5.5.1 Selection criteria

Proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term.

Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.5.1.

Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Safety	45%
Community Expectation	15%
Lifecycle Cost	25%
Community Benefits (Usage, population, future development)	15%
Total	100%

Future asset acquisition costs

Currently Council has no plans to acquire new retaining walls. Therefore, there is no planned budget allocated to the acquisition of retaining walls.

When Council commits to new assets, we must be prepared to fund future operations, maintenance and renewal costs. We must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by Council.

There is no foreseeable major retaining wall acquisition by capital investment. However, there is the potential to have assets donated to Council as part of private development. The urban setting of Randwick City Council would mean that these donated assets will be dedicated at no capital cost to Council.

5.6 Disposal Plan

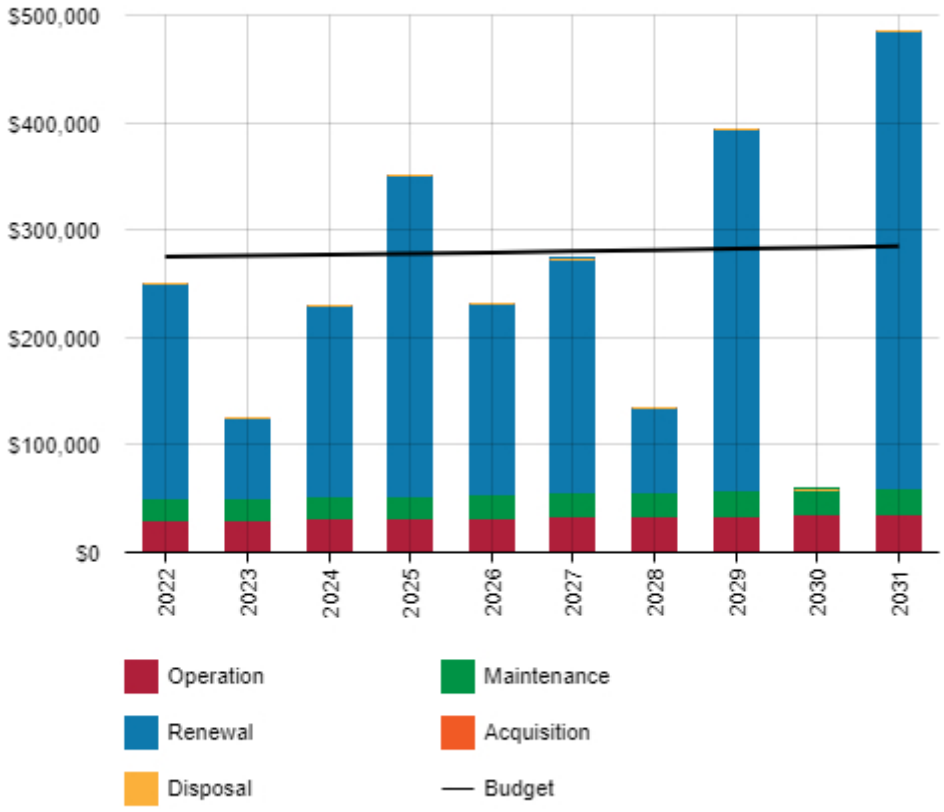
Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition, or relocation. Costs incurred from early disposal of assets were not included in this asset management plan. The cost incurred will be the residual values of the assets being renewed prior to the end of life. Depending on the performance of such assets, their values can be fully actualised prior to the end of life. There are currently no assets being identified for possible decommissioning and disposal.

5.7 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.7.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

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

Figure 5.7.1: Lifecycle Summary



All figure values are shown in current day dollars.

The forecast costs of the asset are generally below the proposed budget which caters for fluctuations in yearly cost variations. The model shows that the budget is currently sustainable. As retaining walls are costly and high risk, it is important that the surplus be set aside in preparation for long term renewal requirements in retaining walls such as the occasional spikes of higher value works projected by this model.

6.0 RISK MANAGEMENT PLANNING

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

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[9].

An assessment of risks[10] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

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

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Wall	Overturning	casualties to users, property damage, loss, or reduction of service and restricted access.
Footing	Sliding	casualties to users, property damage, loss, or reduction of service and restricted access.
Retaining Structure	Global Stability	casualties to users, property damage, loss, or reduction of service and restricted access.
Other Structures above the wall	Displacement or distress	casualties to users, property damage, loss, or reduction of service and restricted access.

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

[9] ISO 31000:2009, p 2

[10] D03410905 RCC Enterprise Risk Management Framework

6.2 Risk Assessment

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

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

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

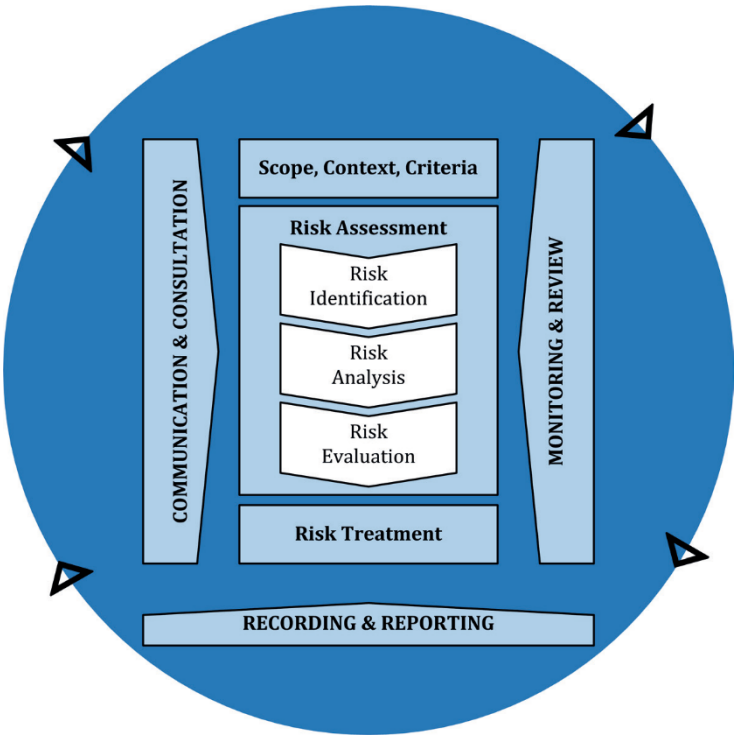


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

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

An assessment of risks[11] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2.1. It is essential that these critical risks and costs are reported to management and the Council.

[11] D03410905 RCC Enterprise Risk Management Framework

Table 6.2.1: Risks and Treatment Plans

Risk Assessment

Risk Factors	Consequence	Likelihood
Personal Injury		*Please note likelihood is based on condition assessment*
Financial Implications		
Environmental		
Political		

Consequence	Risk Descriptions
Catastrophic	Death, toxic release off site with detrimental effect, huge financial loss (>$100,000), sustained comprehensive negative national media coverage with major loss in community trust
Major	Extensive injuries, loss of production capability, off site release with no detrimental effects, major financial loss (>$50,000 & <$100,000), Ongoing negative media coverage in local and metro press with minimal community trust
Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss (>$10,000 & <$50,000), Short period negative media coverage with rigorous community discussion
Minor	First aid treatment, on-site release immediately contained, medium financial loss (>$1000 & <$10,000), little or no impact on community's perception of Council
Insignificant	No injuries, low financial loss (<$1000), no effect to normal operations

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

Table 6.2.2: Risks Matrix

	CONSEQUENCE				
LIKELIHOOD	Insignificant (2)	Minor (3)	Moderate (7)	Major (13)	Catastrophic (20) Major (13)
Almost Certain (5)	Medium (10)	High (15)	High (35)	Extreme (65)	Extreme (100)
Likely (4)	Medium (8)	Medium (12)	High (28)	High (52)	Extreme (80)
Possible (3)	Low (6)	Medium (9)	High (21)	High (39)	Extreme (60)
Unlikely (2)	Low (4)	Low (6)	Medium (14)	High (26)	High (40)
Rare (1)	Low (2)	Low (3)	Medium (7)	Medium (13)	High (20)

6.3 Infrastructure Resilience Approach

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

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

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

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

6.4 Service and Risk Trade-Offs

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

6.4.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- We cannot continually undertake reactive maintenance only
- We cannot increase the number of retaining walls without the resources the required

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

- Council staff unable to meet service level agreements
- Dilapidated retaining wall assets
- Reduced public safety to those benefiting from the retaining wall including pedestrians

6.4.2 Risk trade-off

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

- Risk of causing harm to road users and buildings from dilapidated retaining assets e.g. overturning or global stability failure.
- Extended time of road assets being closed causing inconvenience to users.

These operations and maintenance activities are considered and included in the forecast costs, and where developed, the Risk Management Plan.

7.0 FINANCIAL SUMMARY

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

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

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

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[12] 113%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 113% of the funds required for the optimal renewal of assets.

The forecast renewal works along with the proposed renewal budget is illustrated in Appendix C.

Medium term – 10 year financial planning period

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

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10-year planning period is $253,083 average per year.

The proposed (budget) operations, maintenance and renewal funding is $279,749, on average per year over the 10-year plan. This budget figure has an excess of $26,665 per year compared to forecast costs. This indicates that 111% of the forecast costs needed to provide the services documented in this AMP are accounted for in the proposed budget. Note, these calculations exclude acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AMP and ideally over the 10-year life of the Long-Term Financial Plan.

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

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

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the long-term financial plan.

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

Forecast costs are shown in 2021 dollar values.

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

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2022	$-	$30,000	$20,000	$200,000	$0
2023	$-	$30,600	$20,400	$73,602	$0
2024	$-	$31,212	$20,808	$177,115	$0
2025	$-	$31,836	$21,224	$298,204	$0
2026	$-	$32,473	$21,649	$177,262	$0
2027	$-	$33,122	$22,082	$217,802	$0
2028	$-	$33,785	$22,523	$78,204	$0
2029	$-	$34,461	$22,974	$335,428	$0
2030	$-	$35,150	$23,433	$0	$0
2031	$-	$35,853	$23,902	$425,730	$0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Entity's budget and Long-Term financial plan.

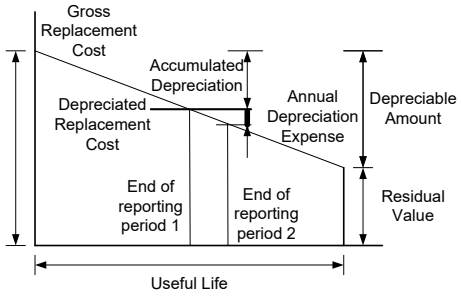
The financial strategy of the entity determines how funding will be provided, whereas the AMP communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this AMP are shown below. The assets are valued using fair value to determine cost to replace service capacity:

Replacement Cost (Current/Gross)	$18,967,437
Depreciable Amount	$19,438,326
Depreciated Replacement Cost[13]	$9,403,692
Depreciation	$207,807



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

7.3.2 Valuation forecast

Asset funding costs and values are forecast to increase as additional assets are added to the asset class. Assets will cost more to reconstruct in the future based on inflation.

Additional assets will generally add to the operations and maintenance needs in the longer term. Any additional assets will also add to future depreciation forecasts.

Under the AASB requirements, Council is required to revaluate assets at a rate of minimum once every 4 years. This will help align the values of the existing assets with the addition of the acquired assets to a current day value.

7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this AMP are:

- Asset values and dimensions are correct. Changes to asset values and dimensions will have an effect on resources required to operate, maintain and renew the retaining wall assets.
- 100% of Council's retaining wall assets are inspected and the retaining wall asset conditions are updated accordingly. Monitoring of change of condition may show change in the asset's useful life which may have a subsequent change of funding required to maintain level of service.
- The estimates used for current rates of renewal will remain constant at the current 2021 values for the next 10 years. Any increase to the renewal costs may reduce the amount of work budgeted with possible reduction in the retaining wall service level.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[14] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%

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

Confidence Grade	Description
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AMP is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment	Comment
Demand drivers	C. Medium	The demand drivers are based on NSW Department of Planning requirements.
Growth projections	B. High	The demand drivers are based on customer requests, condition assessment and ongoing development requirements.
Acquisition forecast	B. High	This data has been a trend for Randwick City Council for the past 5 years.
Operation forecast	B. High	This data has been a trend for Randwick City Council for the past 5 years.
Maintenance forecast	B. High	This data has been a trend for Randwick City Council for the past 5 years.
Renewal forecast - Asset values	B. High	The data is based on a recent revaluation of assets after a Council wide audit.
- Asset useful lives	B. High	The data is based on a recent revaluation of assets after a Council wide audit.
- Condition modelling	B. High	The data is based on a recent revaluation of assets after a Council wide audit.

The estimated confidence level for and reliability of data used in this AMP is considered to be High.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[15]

8.1.1 Accounting and financial data sources

In 2010 Council implemented the financial system, Technology One. This system contains a Works and Assets Module in which works orders or tasks can be raised and costings tracked against a particular asset.

Council's finance system is managed by its Finance section. The system is used for reporting and audited annually. The audited report is present to Council, who then refers the report onto the Office of Local Government.

Council's Asset Management Services team provides input into the asset registers including condition, useful life, unit rates, capitalisation data and physical attributes.

8.1.2 Asset management data sources

Randwick Council's Asset Register is currently located within the Technology One software package. This dataset contains information to physically describe the asset including its makeup, age, condition, useful life, CRC and other financial data. The register is also linked to other systems including GIS.

The Technology One software used for asset management is currently controlled/managed by Council's Finance section.

Data maintenance is undertaken by Council's Asset Management team who review data/assets on an annual program and advise the Finance section of any updates, new or disposed assets as they arise.

Council is currently reviewing options for a Strategic Asset Management System.

8.2 Improvement Plan

It is important that an entity recognise areas of their AMP and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AMP is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Maintain operations and maintenance protocols for retaining wall structures	Infrastructure services	Maintenance Team	Ongoing
2	Gather data on assets needed to meet future demand	Asset Management Services	Asset Team	Ongoing

[15] ISO 55000 Refers to this as the Asset Management System

Task	Task	Responsibility	Resources Required	Timeline
3	Develop maintenance and renewal recommendations and methodologies for retaining wall structures	Engineering Services	Coordinator Engineering Services	The next AMP
4	Establish a Strategic Asset Management system	Asset Management Services	Asset Team	The next AMP
5	Improve asset management principles awareness within Council staff	Asset Management Services	Asset Team	Ongoing

8.3 Monitoring and Review Procedures

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

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

The AMP has a maximum life of 4 years and is due for complete revision and updating within 6 months of each Council election.

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this AMP are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AMP,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

9.0 REFERENCES

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10.0 APPENDICES

Appendix A Operation Forecast

A.1 – Operation Forecast Assumptions and Source

Operational forecast is assumed to be increasing yearly due to the increase of material and labour cost. Additional operation forecast increase is due to the increase in acquisition forecast.

A.2 – Operation Forecast Summary

Table A2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	$30,000.00	$0.00	$30,000.00
2023	$30,600.00	$0.00	$30,600.00
2024	$31,212.00	$0.00	$31,212.00
2025	$31,836.00	$0.00	$31,836.00
2026	$32,473.00	$0.00	$32,473.00
2027	$33,122.00	$0.00	$33,122.00
2028	$33,785.00	$0.00	$33,785.00
2029	$34,461.00	$0.00	$34,461.00
2030	$35,150.00	$0.00	$35,150.00
2031	$35,853.00	$0.00	$35,853.00

Appendix B Maintenance Forecast

B.1 – Maintenance Forecast Assumptions and Source

Maintenance forecast is assumed to be increasing yearly due to the increase of material and labour cost. Additional maintenance forecast increase is due to the increase in acquisition forecast.

B.2 – Maintenance Forecast Summary

Table B2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2022	$20,000	$0	$20,000
2023	$20,400	$0	$20,400
2024	$20,808	$0	$20,808
2025	$21,224	$0	$21,224
2026	$21,649	$0	$21,649
2027	$22,082	$0	$22,082
2028	$22,523	$0	$22,523
2029	$22,974	$0	$22,974
2030	$23,433	$0	$23,433
2031	$23,902	$0	$23,902

Appendix C Renewal Forecast Summary

C.1 – Renewal Forecast Assumptions and Source

Renewal forecast is based on the asset register. The general assumption of the asset register is that the condition of the assets are assessed appropriately and that the physical data of the asset are correct.

C.2 – Renewal Forecast Summary

Table C3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2022	$200,000	$225,000
2023	$73,602	$225,000
2024	$177,115	$225,000
2025	$298,204	$225,000
2026	$177,262	$225,000
2027	$217,802	$225,000
2028	$78,204	$225,000
2029	$335,428	$225,000
2030	$-	$225,000
2031	$425,730	$225,000

C.3 –Renewal Plan

Projected 10 Year Capital Renewal and Replacement Works Program

Asset ID	Street Name	Retaining Wall Type	Suburb	Renewal Year
RW0092	Milford Street 6-10	Dry Stone	RANDWICK	2022
RW0189	Inman Street 1-3	Timber Log	MAROUBRA	2023
RW0081	Gordons Bay Reserve 1R	Timber Sleeper	COOGEE	2023
RW0223	Maroubra Road 334-336	Criblock	MAROUBRA	2023
RW0196	Boyce Road 96	Timber Sleeper	MAROUBRA	2023
RW0241	Malabar Road 410	Timber Sleeper	MAROUBRA	2023

Asset ID	Street Name	Retaining Wall Type	Suburb	Renewal Year
RW0322	Duke Street 43R	Timber Log	KENSINGTON	2024
RW0051	Clovelly Road 2-14LH	Mortared Sandstone	CLOVELLY	2025
RW0034	Fewings Street 36-46	Concrete	CLOVELLY	2026
RW0044	Surfside Avenue1-27	Besser Block	CLOVELLY	2027
RW0269	Knowles Avenue 67R	Timber Sleeper	MATRAVILLE	2027
RW0177	Edgecliffe Avenue 2-4	Timber Sleeper	SOUTH COOGEE	2027
RW0178	Edgecliffe Avenue 6	Timber Sleeper	SOUTH COOGEE	2027
RW0244	Nicol Avenue 2	Timber Sleeper	MAROUBRA	2027
RW0304	Baker Park - 32-34 Dudley St	Timber Sleeper	COOGEE	2027
RW0315	Prince Edward Street 81-83	Timber Sleeper	MALABAR	2027
RW0179	Edgecliffe Avenue 12	Timber Sleeper	SOUTH COOGEE	2027
RW0257	Malabar Road 687-691	Timber Log	MAROUBRA	2027
RW0283	Adina Avenue 47-49	Timber Sleeper	LA PEROUSE	2027
RW0137	Rainbow Street 60-62	Timber Sleeper	KINGSFORD	2027
RW0195	Gale Road 197-199	Timber Sleeper	MAROUBRA	2027
RW0200	Malabar Road 376-278	Timber Sleeper	MAROUBRA	2027
RW0202	Malabar Road 278-280	Timber Sleeper	MAROUBRA	2027
RW0328	Balfour Road 43R	Timber Log	KENSINGTON	2027
RW0041	Melrose Parade 5	Brick	CLOVELLY	2027
RW0187	Anzac Parade 770-784	Criblock	MAROUBRA	2028
RW0215	Boyce Road 173-179	Concrete	MAROUBRA	2028
RW0217	Boyce Road 183	Concrete	MAROUBRA	2028

Asset ID	Street Name	Retaining Wall Type	Suburb	Renewal Year
RW0064	Burrows Park -13-33R Eastbourne Ave	Timber Log	CLOVELLY	2028
RW0125	Arden Street 242T	Brick	COOGEE	2029
RW0128	Howard Street 8-18	Brick	RANDWICK	2029
RW0171	Tucabia Street 2-10	Brick	SOUTH COOGEE	2029
RW0284	Goonda Avenue 4	Timber Log	LA PEROUSE	2029
RW0106	Tunstall Avenue 84	Timber Sleeper	KINGSFORD	2029
RW0203	Malabar Road 280-282	Timber Sleeper	MAROUBRA	2029
RW0031	Arden Street 158-174	Mortared Sandstone	COOGEE	2031
RW0100	Bream Street 61S	Mortared Sandstone	COOGEE	2031

Appendix D Budget Summary by Lifecycle Activity

The planned budget for the relevant lifecycle activities is sufficient. There is no disposal cost considered as the assets will be renewed.

Table D1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	$-	$30,000	$20,000	$225,000	$-	$275,000
2023	$-	$30,600	$20,400	$225,000	$-	$276,000
2024	$-	$31,212	$20,808	$225,000	$-	$277,020
2025	$-	$31,836	$21,224	$225,000	$-	$278,060
2026	$-	$32,473	$21,649	$225,000	$-	$279,122
2027	$-	$33,122	$22,082	$225,000	$-	$280,204
2028	$-	$33,785	$22,523	$225,000	$-	$281,308
2029	$-	$34,461	$22,974	$225,000	$-	$282,434
2030	$-	$35,150	$23,433	$225,000	$-	$283,583
2031	$-	$35,853	$23,902	$225,000	$-	$284,755

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