Randwick City Council
a sense of community

Asset Management Plan
Stormwater Drainage

2013–32

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ABBREVIATIONS

AAAC Average annual asset consumption

AMP Asset management plan

ARI Average recurrence interval

BOD Biochemical (biological) oxygen demand

CRC Current replacement cost

CWMS Community wastewater management systems

DA Depreciable amount

DoH Department of Health

EF Earthworks/formation

IRMP Infrastructure risk management plan

LCC Life Cycle cost

LCE Life cycle expenditure

MMS Maintenance management system

PCI Pavement condition index

RV Residual value

SS Suspended solids

vph Vehicles per hour

GLOSSARY

Annual service cost (ASC)
An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operating, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset class
Grouping of assets of a similar nature and use in an entity's operations (AASB 166.37).

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

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

Assets
Future economic benefits controlled by the entity as a result of past transactions or other past events (AAS27.12).

Property, plant and equipment including infrastructure and other assets (such as furniture and fittings) with benefits expected to last more than 12 month.

Average annual asset consumption (AAAC)*
The amount of a local government's asset base consumed during a year. This may be calculated by dividing the Depreciable Amount (DA) by the Useful Life and totalled for each and every asset OR by dividing the Fair Value (Depreciated Replacement Cost) by the Remaining Life and totalled for each and every asset in an asset category or class.

Brownfield asset values**
Asset (re)valuation values based on the cost to replace the asset including demolition and restoration costs.

Capital expansion expenditure
Expenditure that extends an existing asset, at the same standard as is currently enjoyed by residents, to a new group of users. It is discretional expenditure, which increases future operating, and maintenance costs, because it increases council's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

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

Capital funding
Funding to pay for capital expenditure.

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

Capital investment expenditure
See capital expenditure definition

Capital new expenditure
Expenditure which creates a new asset providing a new service to the community that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operating and maintenance expenditure.

Capital renewal expenditure
Expenditure on an existing asset, which returns the service potential or the life of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital upgrade expenditure
Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretional and often does not result in additional revenue unless direct user charges apply. It will increase operating and maintenance expenditure in the future because of the increase in the council's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility. Where capital projects involve a combination of renewal, expansion and/or upgrade

expenditures, the total project cost needs to be allocated accordingly.

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

Class of assets
See asset class definition

Component
An individual part of an asset which contributes to the composition of the whole and can be separated from or attached to an asset or a system.

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

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

Current replacement cost "As New" (CRC)
The current cost of replacing the original service potential of an existing asset, with a similar modern equivalent asset, i.e. the total cost of replacing an existing asset with an as NEW or similar asset expressed in current dollar values.

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

Depreciable amount
The cost of an asset, or other amount substituted for its cost, less its residual value (AASB 116.6)

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

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

Economic life
See useful life definition.

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

Fair value
The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Greenfield asset values**
Asset (re)valuation values based on the cost to initially acquire the asset.

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

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

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

Investment property
Property held to earn rentals or for capital appreciation or both, rather than for:
(a) use in the production or supply of goods or services or for administrative purposes; or
(b) sale in the ordinary course of business (AASB 140.5)

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

Life Cycle Cost **
The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure **
The Life Cycle Expenditure (LCE) is the actual or planned annual maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to Life Cycle Cost to give an initial indicator of life cycle sustainability.

Loans / borrowings
Loans result in funds being received which are then repaid over a period of time with interest (an additional cost). Their primary benefit is in 'spreading the burden' of capital expenditure over time. Although loans enable works to be completed sooner, they are only ultimately cost effective where the capital works funded (generally renewals) result in operating and maintenance cost savings, which are greater than the cost of the loan (interest and charges).

Maintenance and renewal gap
Difference between estimated budgets and projected expenditures for maintenance and renewal of assets, totalled over a defined time (eg 5, 10 and 15 years).

Maintenance and renewal sustainability index
Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

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

Materiality
An item is material is its omission or misstatement could influence the economic decisions of users taken on the basis of the financial report. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances.

Modern equivalent asset.
A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.

Non-revenue generating investments
Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operating expenditure
Recurrent expenditure, which is continuously required excluding maintenance and depreciation, eg power, fuel, staff, plant equipment, on-costs and overheads.

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

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

PMS Score
A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption*
A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount (AAAC/DA). Depreciation may be used for AAAC.

Rate of annual asset renewal*
A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

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

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

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

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

Recurrent funding
Funding to pay for recurrent expenditure.

Rehabilitation
See capital renewal expenditure definition above.

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

Renewal
See capital renewal expenditure definition above.

Residual value
The net amount which an entity expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.

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

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

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

Service potential
The capacity to provide goods and services in accordance with the entity's objectives, whether those objectives are the generation of net cash inflows or the provision of goods and services of a particular volume and quantity to the beneficiaries thereof.

Service potential remaining*
A measure of the remaining life of assets expressed as a percentage of economic life. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (DRC/DA).

Strategic Management Plan (SA)**
Documents Council objectives for a specified period (3-5 yrs), the principle activities to achieve the objectives, the means by which that will be carried out, estimated income and expenditure, measures to assess performance and how rating policy relates to the Council's objectives and activities.

Sub-component
Smaller individual parts that make up a component part.

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

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

Value in Use
The present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate new cash flows, where if deprived of the asset its future economic benefits would be replaced.

Source: DVC 2006, Glossary
Note: Items shown * modified to use DA instead of CRC
Additional glossary items shown **

1. EXECUTIVE SUMMARY

What Council Provides

Randwick City Council has a significant portfolio of stormwater drainage assets under its care and control including drainage conduits, drainage pits and gross pollutant traps.

The Aim of the Randwick City Council Stormwater Drainage Asset Management Plan is to provide a provide a framework to detail and examine existing management practices of drainage infrastructure, and form the basis of an improvement program to progressively meet identified deficiencies.

What does it Cost?

There are two key indicators of cost to provide the Stormwater drainage service.

- The life cycle cost being the average cost over the life cycle of the asset, and
- The total maintenance and capital renewal expenditure required to deliver existing service levels in the next 10 years covered by Council's long term financial plan.

The life cycle cost to provide the Stormwater drainage service is estimated at $1,915,914 per annum. Council's planned life cycle expenditure for year 1 of the asset management plan is $1,572,630 which gives a life cycle sustainability index of 1.30.

The total maintenance and capital renewal expenditure required to provide the Stormwater drainage service the in the next 10 years is estimated at $20,606,770. This is an average of $2,060,677 per annum.

Council's maintenance and capital renewal expenditure for year 1 of the asset management plan of $1,572,630 giving a 10 year sustainability index of 1.11.

Plans for the Future

Council plans to operate and maintain the Stormwater drainage network to achieve the following strategic objectives.

1. Ensure the stormwater drainage network is maintained at a safe and functional standard as set out in this asset management plan.
2. Manage the drainage network in a sustainable manner;
3. Develop an integrated drainage asset management system;
4. Minimise adverse impact of asset users, such as developers and utilities on the drainage assets; and
   Maintain drainage to a desired level of service

Measuring our Performance

Quality
Stormwater drainage assets will be maintained in a reasonably usable condition. Defects found or reported that are outside our service standard will be repaired. See our maintenance response service levels for details of defect prioritisation and response time.

Function
Stormwater drainage asset attributes will be maintained at a safe level and associated signage and equipment be provided as needed to ensure public safety. We need to ensure key functional objectives are met:

- Demonstrate responsible stewardship;
- Define and articulate how the infrastructure is and will be managed to achieve the organisation's objectives;
- Manage risk of asset failure;
- Achieve savings by optimising whole of life costs; and
- Support long term financial planning.
- Ensure that maintenance programs are adequately funded to ensure assets remain functioning in a safe and serviceable condition
- Predict future issues and needs; and establish strategies to overcome identified problems.

Safety
We inspect all Stormwater drainage assets regularly and prioritise and repair defects in accordance with our inspection schedule to ensure they are safe.

The Next Steps

This actions resulting from this asset management plan are:

- Determine the specific components of the drainage assets owned by Council
- Improve the methodology for determining condition and expected life of drainage assets
- Establishing processes to prioritise works and allocate funds
- Long-term funding requirements

2. INTRODUCTION

2.1 Background

Randwick City Council owns an extensive stormwater drainage network that captures and transports storm water flows before its release, generally along our coastline. Our network also includes a portfolio of gross pollutant traps that remove particulate matter from stormwater prior to its release.

The drainage network is generally funded by Council, with grants available from time to time under a number of programs. Drainage under the ownership and control of Sydney Water, The Department of Housing and the Road and Traffic Authority, are not considered within this plan.

The management of Council's road assets requires the coordination of Council's technical and operational resources.

Council's design and asset management teams administer the asset management systems, determine strategic outcomes, develop operational works programs and produce designs, specifications and standards.

Council's operational teams undertake maintenance activities, some augmentation work and co-ordinate external Contractors to undertake renewal, replacement and other augmentation works.

The aim of the Randwick City Council Road Asset Management Plan is to provide a framework for the sustainable management of road surface and pavement assets in line with community expectations and Council's Integrated Planning Framework.

The asset management plan is to be read with the following associated planning documents:

- The Randwick City Plan
- Management Plan (4-Year Delivery Plan and Operational Plan)
- Asset Management Policy
- Asset Management Strategy
- Long Term Financial Plan
- Workforce Strategy
- Randwick City Council Community Consultation Principles and Consultation Planning Guide

This asset management plan covers the following infrastructure assets:

Table 2.1. Assets covered by this Plan

Asset category	Dimension	Replacement Value ($M)
Conduits	191.1 km	$221.60
Pits	9852 no.	$56.11
Box Culverts	16.6 km	$69.86
Gross Pollutant Traps	36 No.	$10.80
TOTAL		**$358.36**

Key stakeholders in the preparation and implementation of this asset management plan are:

Council Officers	Council officers play a major role in managing stormwater drainage assets to ensure that they provide a level of service that meets the needs of both residents and visitors to the area. Council officers implement the components identified in the footpaths asset management plan.
Council Representatives	This stakeholder group includes Councillors and the Mayor for the Council. They are primarily responsible to ensure that their decisions represent and reflect the needs of the wider community.
Residents	Residents have are core users of stormwater drainage assets. Their needs, wants and expectations are conveyed to Council, which should be reflected in the desired levels of service.
Insurers	Insurers have an interest to drive the implementation of systems, which allows Council to be in a better position to gain a better knowledge in the condition of our assets. This should be reflected in the number of claims made against each asset group.

2.2 Goals and Objectives of Asset Management

The provision of services by Council includes the provision of infrastructure assets. Council has acquired infrastructure assets by means which include 'purchase', by contract, construction by Council and by donation of assets constructed by developers and others to meet increased levels of service.

Council's goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach,
- Developing cost-effective management strategies for the long term,
- Providing a defined level of service and monitoring performance,
- Understanding and meeting the demands of growth through demand management and infrastructure investment,
- Managing risks associated with asset failures,
- Sustainable use of physical resources,
- Continuous improvement in asset management practices.[1]

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

Council's vision is:

'A sense of community'

Council's mission is:

'Working together to enhance our environment, celebrate our heritage and to value and serve our diverse community'

[1] IIMM 2006 Sec 1.1.3, p 1.3

Relevant Council goals and objectives and how these are addressed in this asset management plan are:

Table 2.2. Council Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in IAMP
Council has a long term vision based on sustainability	Ensure financial strategies underpin Council's asset management policies and strategic vision	Prepare and review the Council's short and medium term financial plans for Risk Management, Domestic Waste Management, Plant & Equipment, Information Technology, S94 Plan, Asset Management Plans and cash reserves
Council is a leader in the delivery of social, financial, environmental, and operational activities	Ensure good governance and administrative support for the Council and organisation	Prepare and review the Council's short and medium term financial plans for Risk Management, Domestic Waste Management, Plant & Equipment, Information Technology, S94 Plan, Asset Management Plans and cash reserves
Our public assets are planned, managed and funded to meet the community expectations and defined levels of service	Conduct programmed asset maintenance management in accordance with adopted service levels	Maintain Road Reserves (road pavements, footpaths, kerbs and gutters, drainage)
	Continue to implement Strategic Asset Management plans to deliver intergenerational equity and meet the Council's obligations as the custodian of our community's assets.	Implement SAM to ensure the City's assets are managed and maintained to target service levels
		Implement the drainage program incorporating the stormwater management service charge.
The safety of our community is paramount and is acknowledged and supported through proactive policies, programs and strategies	Conduct minor reactive maintenance management in accordance with adopted service levels.	Respond in a timely manner to community requests for repairs to road reserves, open space and Council owned buildings.

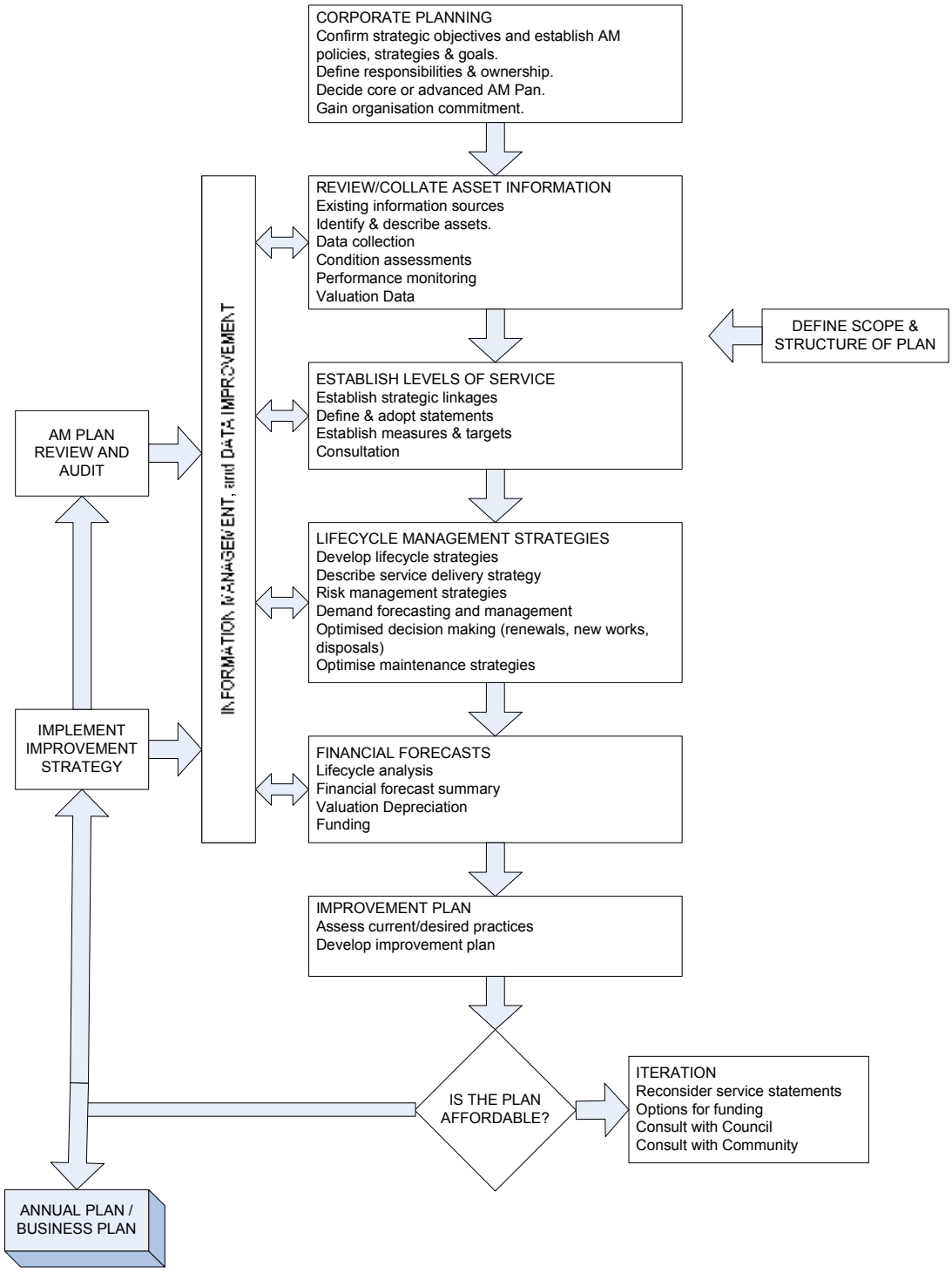
2.3 Plan Framework

Key elements of the plan are

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

A road map for preparing an asset management plan is shown below.

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



2.4 Core and Advanced Asset Management

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

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

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

In 2012 Council commissioned a community satisfaction survey conducted by Micromex research. The survey was administered using a computer aided telephone system to a sample of 1000 residents. The most recent customer satisfaction survey reported satisfaction levels for the following services

Table 3.1. Community Satisfaction Survey Levels

Performance Measure	Satisfaction Level				
	Very Satisfied	**Satisfied**	**Somewhat satisfied**	**Not Very satisfied**	**Not satisfied at all**
Overall satisfaction with Council's performance			√		
Maintaining local roads			√		
Long term planning for the city			√		
Council's response time to request for service			√		

Council uses this information in developing the Strategic Management Plan and in allocation of resources in the budget.

3.2 Legislative Requirements

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

Table 3.2. Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Workplace Health and Safety Act 2011	*"Protecting workers 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.
Civil Liability Act 2002 and Civil Liability Amendment (Personal Responsibility) Act 2002	Protects the Council from civil action by requiring the courts to take into account the financial resources, the general responsibilities of the authority and the compliance with general practices and applicable standards.
Local Government (General) Amendment (Stormwater) Regulation 2006 under the Local Government Act 1993	The object of this Regulation is to amend the Local Government (General) Regulation 2005: (a) to prescribe the maximum amount that may be charged by a council for the provision of stormwater management services, and (b) to provide that certain information regarding stormwater management services is to be included in a council's draft management plan, and (c) to provide that a council's annual report is to include certain information relating to the provision of stormwater management services. This Regulation is made under the Local Government Act 1993, including sections 403 (1), 428 (2) (r), 496A and 748 (the general regulation-making power).
Protection of the Environment Administration Act 1991	The objects of this Act are as follows: (a) to constitute the Environment Protection Authority, (b) to provide integrated administration for environment protection, (c) To require the Authority to perform particular tasks in relation to the quality of the environment, environmental audit and reports on the state of the environment.
Water Management Act 2000	The objects of this Act are to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations and, in particular: (a) to apply the principles of ecologically sustainable development, and (b) to protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality, and (c) to recognise and foster the significant social and economic benefits to the State that result from the sustainable and efficient use of water, including: (i) benefits to the environment, and (ii) benefits to urban communities, agriculture, fisheries, industry and recreation, and (iii) benefits to culture and heritage, and (iv) benefits to the Aboriginal people in relation to their spiritual, social, customary and economic use of land and water, (d) to recognise the role of the community, as a partner with

	government, in resolving issues relating to the management of water sources, (e) to provide for the orderly, efficient and equitable sharing of water from water sources, (f) to integrate the management of water sources with the management of other aspects of the environment, including the land, its soil, its native vegetation and its native fauna, (g) to encourage the sharing of responsibility for the sustainable and efficient use of water between the Government and water users, (h) to encourage best practice in the management and use of water.

3.3 Current Levels of Service

Council has defined service levels in two terms.

Community Levels of Service relate to how the community receives the service in terms of safety, quality, quantity, reliability, responsiveness, cost/efficiency and legislative compliance.

Supporting the community service levels are operational or technical measures of performance developed to ensure that the minimum community levels of service are met. These technical measures relate to service criteria such as:

Service Criteria	**Technical measures may relate to**
Quality	Smoothness of roads
Quantity	Area of parks per resident
Availability	Distance from a dwelling to a sealed road
Safety	Number of injury accidents

Council's current service levels are detailed in Table 3.3.

Table 3.3. Current Service Levels

Key Performance Measure	Level of Service	Performance Measure Process	Performance Target	Current Performance
COMMUNITY LEVELS OF SERVICE				
Quality	Water quality discharged from stormwater systems meet environmental standards.	Customer service requests (CRM's)	Reduction in CRM's relating to water pollution.	44 CRM's relating to water pollution in 2011-12.
		NSW Department of Environment and Heritage Beachwatch Monthly Reports	Beaches are safe for swimming in dry weather.	79% of beaches on average were safe for swimming for 2011-12.
Function	Storm events cause minimal disruption to community.	Customer Satisfaction Survey results	Increase in customer satisfaction survey results	'Moderately low' satisfaction for Transport, Roads and Drainage in 2010
		Reduction in stormwater damage claims made against Council.	0 claims made to council in 2012-13	0 claims made to council in 2011-12
Condition	A stormwater network in good condition.	Customer service requests (CRM's)	Reduction in CRM's relating to stormwater assets.	40 CRM's relating to stormwater assets in 2011-12
Safety	The stormwater system manages hazards caused by storm events.	Reduction in injury claims made against Council regarding Stormwater.	0 claims made to council in 2012-13	0 claims made to council in 2011-12
TECHNICAL LEVELS OF SERVICE				
Condition	Provide functioning stormwater drainage system.	Routine inspection of stormwater assets	Inspection of 20% of stormwater network per year	- Visual inspection network completed in 2011. - Each inspected annually
			100% of CCTV budget spent each year on systematic CCTV inspection of network.	54% of CCTV budget spent in 2011/12.
Operations	Operational inspection of GPT's	Routine inspection of GPT's	24 GPT's inspected monthly, 4 high priority GPT's inspected on a weekly basis and cleaned if need be.	36 GPT's inspected monthly, 4 high priority GPT's inspected on a weekly basis and cleaned if need be.
	Inspection and cleaning of pits.	Routine maintenance of pits	Each of Council's 12 designated operational precincts maintained once per year.	Each of Council's 12 designated operational precincts maintained once per year.
Function	A stormwater network that meets current standards.	Upgrading of Stormwater assets to meet current standards	100% of stormwater capital works budget spent.	84% spent in 2011/12

Please see appendix X for ANZECC (2000) guidelines for the protection of aquatic ecosystem health

3.4 Desired Levels of Service

At present, indications of desired levels of service are obtained from various sources including the 2012 Customer Satisfaction survey, residents' feedback to Councillors and staff, service requests and correspondence. Council has yet to quantify desired levels of service. This will be done in future revisions of this asset management plan.

4. FUTURE DEMAND

4.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc.

Demand factor trends and impacts on service delivery are summarised in Table 4.1.

Table 4.1. Demand Factors, Projections and Impact on Services

Demand factor	Present position	Projection	Impact on services
Population	128, 989 (As at 21 June 2012, ABS estimated resident population)	Randwick City Council's population has experienced 7.6% growth since last 2006 census.	An increase in population will require an increase in community and infrastructure services.
Demographics	In the ABS 2006 census, Sydney's average compared with Randwick City Council had: • A higher proportion of young adults, • A smaller percentage of young children, • A high percentage of renters • A high percentage of people aged 15-24. The area also has an ageing population consistent with nationwide trends. Randwick is a multicultural area with a significant number of non-English speaking communities.	Number of people per household is expected to decline. Percentage of people aged 65 is expected to increase. Number of people below the age of 15 is expected to remain the same.	Greater need for aged care facilities and disability access. Increase in population will require improvements to public transport infrastructure.

4.2 Changes in Technology

Technology changes are forecast to affect the delivery of services covered by this plan in the following areas.

Table 4.2. Changes in Technology and Forecast effect on Service Delivery

Technology Change	Effect on Service Delivery
Updated Plant & Equipment	Improved service delivery within a more efficient time frame
Water treatment technology	Ongoing improvement to the cost and effectiveness of water treatment technology will be needed to assist in solving the issues associated with stormwater recycling. Improved infiltration and ground water aquifer recharge opportunities and water harvesting opportunities such as harvesting water from base flows in pipes and Gross Pollutant Traps.
Technology Improvements to enable better recording and analysis of unit effectiveness and maintenance costs	Reduction in maintenance costs and improved targeting of maintenance work. Improvements to methods of design, construction and disposal of stormwater that will minimise the need for digging up old infrastructure to replace pipes.
Unit Design and Maintenance and Cleaning Technology	Further improvement of the design of units and techniques used to reduce maintenance cost is likely but difficult to predict. Continue to monitor.

4.3 Demand Management Plan

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

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

Table 4.3. Water Cycle Management Strategies Summary

Activity	Agency Responsible
Ensuring that new development is sensitive to impacts on stormwater system and includes sustainable features including green space, infiltration systems or on site detention.	Council
Direct reuse involves using rainwater, greywater, stormwater or wastewater without treatment.	Whole of Government working with community
Stormwater harvesting is the process of tapping directly into the stormwater system to extract water for irrigation or other purposes.	Sydney Water, Council, developers, major land holders
Stormwater - runoff from roofs, roads and driveways. Stormwater must generally be treated for use. Water caught in rainwater tanks is suitable for some uses	Council
Floodplain Management – Ongoing catchment studies will enable a better understanding of the capacity and performance of our drainage network. This knowledge will be used to inform decisions regarding the management of stormwater as well as providing a basis for securing additional funding.	Council and Department of Environment and Heritage.

4.4 New Assets from Growth

There are no new assets from growth identified by Randwick City Council at the time on creating this Asset Management Plan.

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in section 3) while optimising life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this asset management plan are shown below.

Conduits	191068 m
Pits	9852 assets
Box Culverts	16565 m
Gross Pollutant Traps	36 No

The cost of drainage infrastructure is inherently expensive as it most often requires excavations and underground works. Cost alone demands that Council continue to investigate and use alternative solutions that may become available to extend the lives of the existing infrastructure and in doing so realise the residual value of existing assets.. This includes the use of modern methods of design, construction and disposal of stormwater.

The relining of old pipes on the verge of failing is becoming more common. Pipe relining is the rehabilitation of existing pipes and culverts by placing a new conduit inside of the existing conduit. This method reduces the need to excavate a drainage line and is particular useful for drainage lines that run through private property or in “difficult to access” areas.

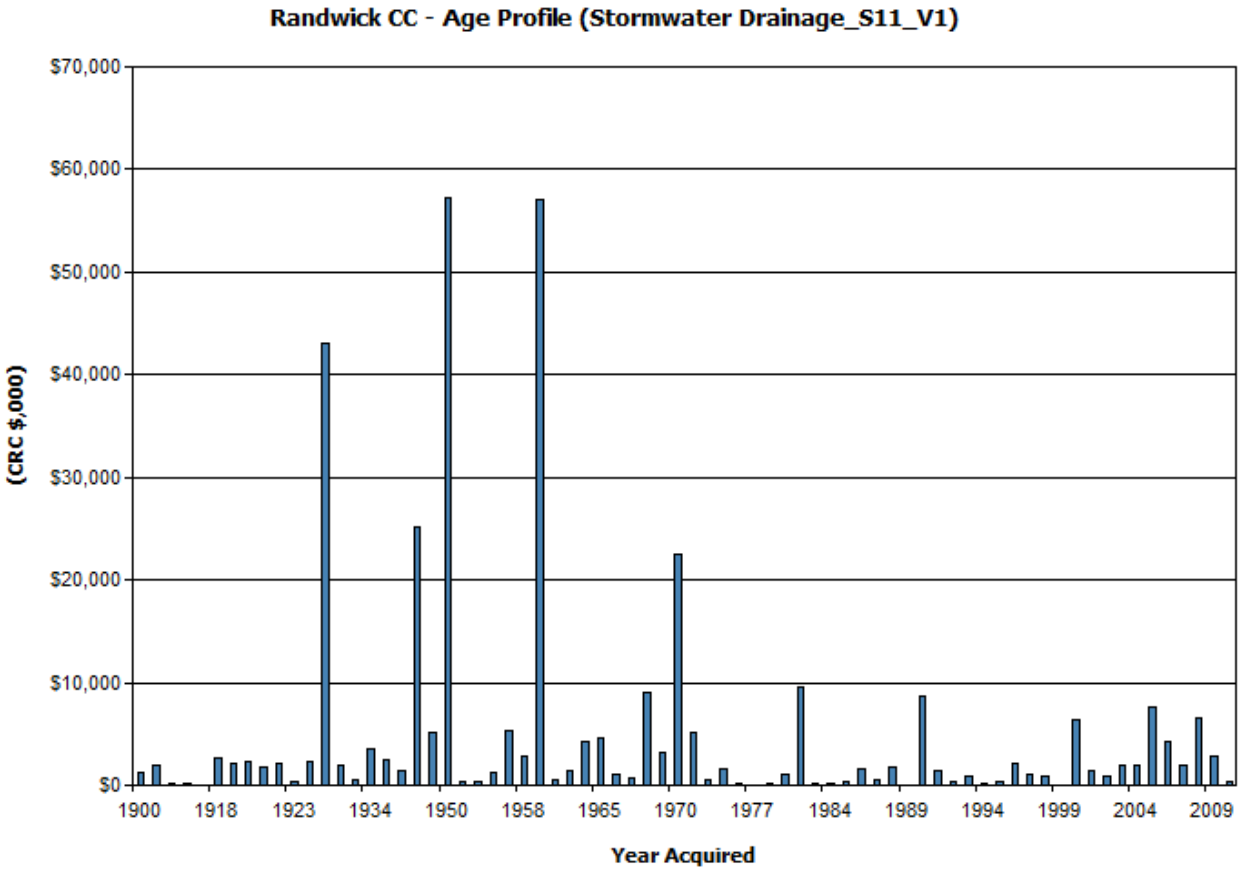
This method does not increase the capacity of a pipe and may encounter problems when new connections are required into the relined pipe. Council will need to take care in assessing the suitability of the use of relining. Overall, this is an acceptable and effective method of extending the life of a pipe line and will become more prevalent in the future.

Other methods of managing stormwater are becoming commonplace including water conservation, environmental conservation and Water Sensitive Urban Design (WSUD).

Council sees the importance these issues have to the community and will endeavour to reduce town water usage and pollution caused by stormwater by implementing WSUD principles. In order to be effective, Council will need to identify infiltration and ground water aquifer recharge opportunities and water harvesting opportunities such as harvesting water from base flows in pipes and Gross Pollutant Traps.

The age profile of Council’s assets is shown below.

Fig 2. Asset Age Profile



The asset age profile shown is not indicative of the actual age of the assets. The year of construction/acquisition for stormwater assets is not known to any degree of accuracy in most cases. The year of acquisition was therefore determined by considering the anticipated asset life and current condition on the lifecycle deterioration curve for that asset.

For example if an asset was assessed to be a condition 7 out of 10, based on a straight line depreciation graph it is assumed that 70% of the life of the asset has been consumed. If the culvert has an assumed useful life of 100 years then 70 years of its useful life has been consumed. To determine 'Year of Acquisition' the asset consumption age of 70 is subtracted from the current year, 2012, giving a year of acquisition of 1942.

5.1.2 Asset capacity and performance

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

Service deficiencies are identified and prioritised from requests for maintenance of Council's drainage assets as recorded in Council's customer request system.

Randwick Council is conducting flood studies for its catchments under the NSW floodplain Development Manual. Flood Studies have been completed or a nearing completion for 4 catchments. The Floodplain Management Study of these catchments will analyse the deficiencies in each catchment and address these deficiencies in a Floodplain Risk Management Plan. This will be used to inform decisions regarding the management of stormwater as well as providing a basis for securing additional funding.

5.1.3 Asset condition

Randwick Council has completed a data collection program to confirm the location, type and condition of all drainage assets. This program relied on a visual assessment of the asset to determine the condition. Council also budget to undertake CCTV inspections on an annual basis to continually improve data integrity. The cost of CCTV surveys means that the inspections are undertaken on a priority basis.

Randwick is one of the older areas within Sydney, and despite long stormwater asset lives, there are numerous stormwater assets that require renewal. Council has implemented a stormwater service levy to assist in this program.

Randwick Council's condition rating in on a scale of 1 to 10 where 1 is an asset in a condition "as new" and 10 being a condition of "failed or immanent failure".

Conduit Condition Ratings

1	New	New, no problems, No defects Assume less than 5yrs old. (If there is no age information)
2	Excellent	No problems, No defects Assume 5-10 years old (If there is no age information)
3	Very Good	No problems. Slight Surface wear. No influence to water tightness. Assume 10-25 years old (If there is no age information)
4	Good	Minor consistent invert wear, Insignificant influence to water tightness or hydraulic pressure Assume 25-50 years old (If there is no age information)
5	Average	Minor consistent invert wear, Insignificant influence to water tightness or hydraulic pressure Assume 25-50 years old (If there is no age information)
6	Satisfactory	< 5% obstruction to flow due to pipe defects such as calcite build-ups, lateral protrusions, no structural problems. Some surface wear, some seeping joints, or individual fine root intrusion. Assume 70-80 years old (If there is no age information)
7	Unsatisfactory	5-10% obstruction to flow due to pipe defects, or minor structural problems such as cracking, slight joint displacement (Less than thickness of pipe) or minor fine root infestation. Pipe wears existing, many seeping joints or gushing joint. Water tightness insufficient. Consider for relining. Assume 80-100 years old (If there is no age information)
8	Poor	<15% obstruction to flow due to pipe defects or significant protrusions, with structural problems and constructional deficiencies such as cracking, joint displacement (thickness of pipe) and/or significant root infestation. Pipe wear severe, many seeping joints or gushing joints. Water tightness insufficient. Relining required Assume 100-120 years old (If there is no age information)
9	Consider Reconstruction	>15% obstruction to flow due to pipe defects or severe protrusions, major structural problems, cracking, joint displacement (> 1.2 thickness), pipe deformation (<10 %), severe pipe wear and/or major root infestation. Water tightness minimal. Relining not an option. Assume greater than 120 years old (If there is no age information)
10	Imminent Failure/Failed	Urgent reconstruction, Pipe is/will shortly be non functioning. Pipe Deformation (>10%) or collapsed deeply rooted or other obstructions present. Relining not an option. Assume greater than 120 years old (If there is no age information)

Pit Condition Ratings

1	New	New, no problems, No defects. Assume less than 5yrs old. (If there is no age information)
2	Excellent	No problems, No defects. Assume 5-10 years old (If there is no age information)
3	Very Good	No problems. Surface wear in pit, lintel or grate only. No influence to water tightness. Assume 10-30 years old (If there is no age information)
4	Good	Minor wear in invert, no structural problems. Minor protrusions that may act as snag points that may result in intermittent obstructions to flow at times (may be due to shape of pit etc.) Assume 30-50 years old (If there is no age information)
5	Average	Some wear in invert. < 5% obstruction to flow due to protrusions, no structural problems. Assume 50-80 years old (If there is no age information)
6	Satisfactory	Minor cracks and protrusions due to less than ideal construction methods or small amounts of dumped concrete etc. Outlet pipe may not be flush with pit wall but sealed. Assume 80-100 years old (If there is no age information)
7	Unsatisfactory	Structural problems such as small open cracks. Protrusions present that encourage blockages, severe invert wear. Outlet pipe not flush with pit wall and not sealed, sump does not drain. Assume 100-120 years old (If there is no age information)
8	Poor	Structural problems such as open cracks. Protrusions present that encourage blockages, severe invert wear. Inlet and Outlet pipe not flush with pit wall and not sealed, sump does not drain. Cracking around connections. Assume 120+ years old (If there is no age information)
9	Consider Reconstruction	Significant structural problems such as large cracks missing bricks and wall deformations. Protrusions present that cause blockages, severe invert wear or invert missing. Inlet and Outlet pipe not flush with pit wall and not sealed. Cracking around connections. Assume 120+ years old (If there is no age information)
10	Imminent Failure/Failed	Urgent reconstruction, Pit is/will shortly be non-functioning (Due to structural reasons). Pit walls deformed or collapsed reinforcement exposed and corroded. Major obstructions present such as concrete, or protruding bricks. Assume 120+ years old (If there is no age information)

Lintel & Grate/Lid Condition Ratings

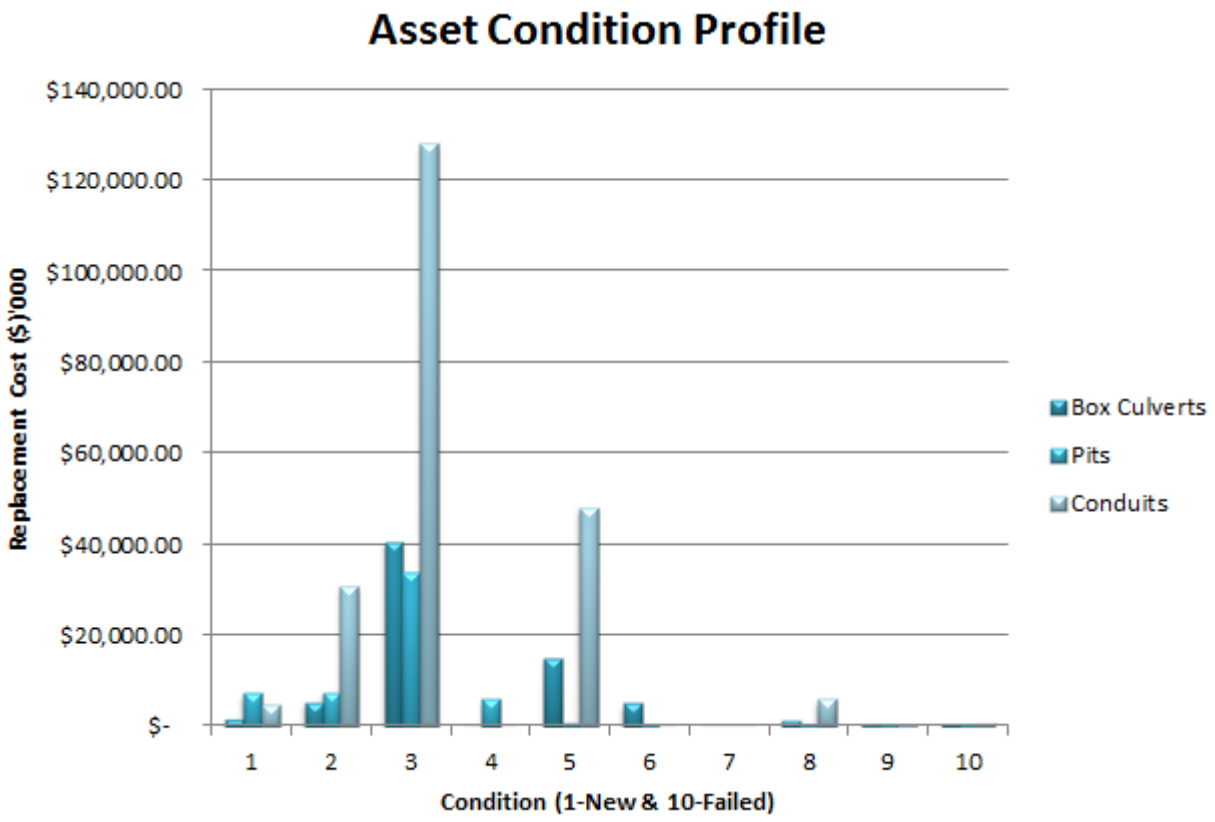
1	New	New, no problems, No defects. Assume less than 5yrs old. (If there is no age information)
2	Excellent	No problems, No defects. Assume 5-10 years old (If there is no age information)
3	Very Good	No problems. Surface wear in pit, lintel or grate only. No influence to water tightness. Assume 10-30 years old (If there is no age information)
4	Good	Good condition. Surface wear only. Assume 30-50 years old (If there is no age information)
5	Average	Showing some wear and tear Assume 50-80 years old (If there is no age information)
6	Satisfactory	Lintel may be cracked but functioning and not blocked. Grate may be damaged but not a danger to public nor any reduction in functionality. Assume 80-100 years old (If there is no age information)
7	Unsatisfactory	Lintel may be damaged and partially blocked or grate may be damaged and functionality reduced. Consider lintel replacement Assume 100-120 years old (If there is no age information)
8	Poor	Lintel is damaged and blocked and grate is damaged and functionality reduced. Required lintel replacement. Consider grate replacement. Assume 120+ years old (If there is no age information)
9	Consider Reconstruction	Lintel is damaged and blocked and grate is damaged and functionality reduced. Required lintel and grate replacement. Consider pit reconstruction. Assume 120+ years old (If there is no age information)
10	Imminent Failure/Failed	Grate is damaged and lintel crushed. Part replacement not an option. Danger to public. Assume 120+ years old (If there is no age information)

Proposed Generic Condition Ratings for GPT's, Channels & Culverts

1	New	A "new" asset or an asset recently rehabilitated back to new condition.
2	Excellent	An asset in "excellent" overall condition. There would be only very slight condition decline but it would be obvious that the asset was no longer in new condition.
3	Very Good	An asset in "very good" overall condition but with some early stages of deterioration evident, but the deterioration still minor in nature and causing no serviceability problems.
4	Good	An asset in "good" overall condition but with some obvious deterioration evident, serviceability would be impaired very slightly.
5	Average	An asset in "average" overall condition deterioration in condition would be obvious and there would be some serviceability loss.
6	Satisfactory	An asset in "satisfactory" overall condition. The condition deterioration would be quite obvious. Asset serviceability would now be affected and maintenance cost would be rising.
7	Unsatisfactory	An asset in "unsatisfactory" overall condition deterioration would be quite severe and would be starting to limit the serviceability of the asset. Maintenance cost would be high.
8	Poor	An asset in "poor" overall condition with serviceability now being heavily impacted upon by the poor condition. Maintenance cost would be very high and the asset would at a point where it needed to be rehabilitated.
9	Consider Reconstruction	An asset in "consider reconstruction" condition with severe serviceability problems and needing rehabilitation immediately. Could also be a risk to remain in service?
10	Imminent Failure/Failed	An asset that has "failed". Is no longer serviceable and should not remain in service. There would be an extreme risk in leaving the asset in service.

The condition profile of Council's assets is shown below.

Fig 3. Asset Condition Profile



5.1.4 Asset valuations

The value of assets as at 30 Jun 2011 covered by this asset management plan is summarised below. Assets were last revalued at 2010-11. Assets are valued at Brownfield rates.

Current Replacement Cost	$371,792,000.00
Depreciable Amount	$371,792,000.00
Depreciated Replacement Cost	$194,155,000.00
Annual Depreciation Expense	$3,027,000.00

Council's sustainability reporting reports the rate of annual asset consumption and compares this to asset renewal and asset upgrade and expansion.

Asset Consumption	$3,027,000.00
Asset renewal	$897,240
Annual Upgrade/expansion	$455,300

5.2 Risk Management Plan

An assessment of risks associated with service delivery from infrastructure assets has identified critical risks to Council. The risk assessment process identifies credible risks, the likliehood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the infrastructure risk management plan are summarised in Table 5.2.

Table 5.2. Critical Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan
Stormwater Pipes	Pipe failure causing flooding to private property	Moderate	Condition assessment to identify pipes requiring renewal
Stormwater Pipes	Heavy rain overwhelming stormwater drainage capacity causing flooding and erosion to natural watercourses	High	On site detention policy to ensure that maximum flow does not increase with heavy rain or development Catchment studies and Floodplain Risk Management Plans
Pollution Control Devices	Pollution spill event	Moderate	Identify high risk catchment areas and streams and implement treatment trains
Pollution Control Devices	Units not working correctly due to inadequate maintenance	High	record and analyse maintenance data to optimise maintenance frequency and treatments
Pollution Control Devices	Units not working correctly due to poor condition	High	Implement renewal programme and increase inspection frequency as units near end of life.

5.3 Routine Maintenance Plan

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

5.3.1 Maintenance plan

Maintenance includes reactive, planned and cyclic maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions. Public members directly affected by the asset generally make these requests. To provide the highest level of service, Council's objective in relation to maintenance requests is to inspect and prioritise the work requests as quickly as possible.

Should an asset require maintenance to address a safety concern or other significant risk then the work is immediately programmed in as emergency works.

Maintenance requests of a routine or minor nature will be undertaken as resources permit. Care must be taken that there is no increased risk to the public whilst waiting for maintenance.

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown

experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

Council aims to obtain best value for its maintenance budget within the constraint of the resources made available. Lack of maintenance may lead to urgent requests or catastrophic failures that will cost more than the minor expenditure required for maintenance delivered under the maintenance program.

To ensure that the best value is obtained for the available maintenance dollar, work of the same nature must be grouped in a given area so that work is completed efficiently.

This means that, for example, CCTV work required in an area is programmed together rather than a job by job basis.

Maintenance of Council drainage assets must include a regular and accurate assessment of the condition of Council's drainage assets from a condition assessment survey, and a consistent record of customer reports.

As part of the condition assessment blockages should also be noted to highlight areas prone to requiring operation maintenance.

The maintenance delivery methods outlined above form a significant part of Council's overall drainage management strategy, in which the aim is to minimise the whole of life costs of the asset. In some instances, the imminent capital replacement of an asset may mean it is suitable to either defer or undertake repairs of a temporary nature.

Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold.

Maintenance expenditure trends are shown in Table 5.3.1

Table 5.3.1. Maintenance Expenditure Trends

Year	Maintenance Expenditure		
	Reactive	**Planned**	**Cyclic**
2009/10		$ 770,117	
2010/11		$ 826,699	
2011/12	$ 266,245	$ 274,836	$ 317,777

5.3.2 Standards and specifications

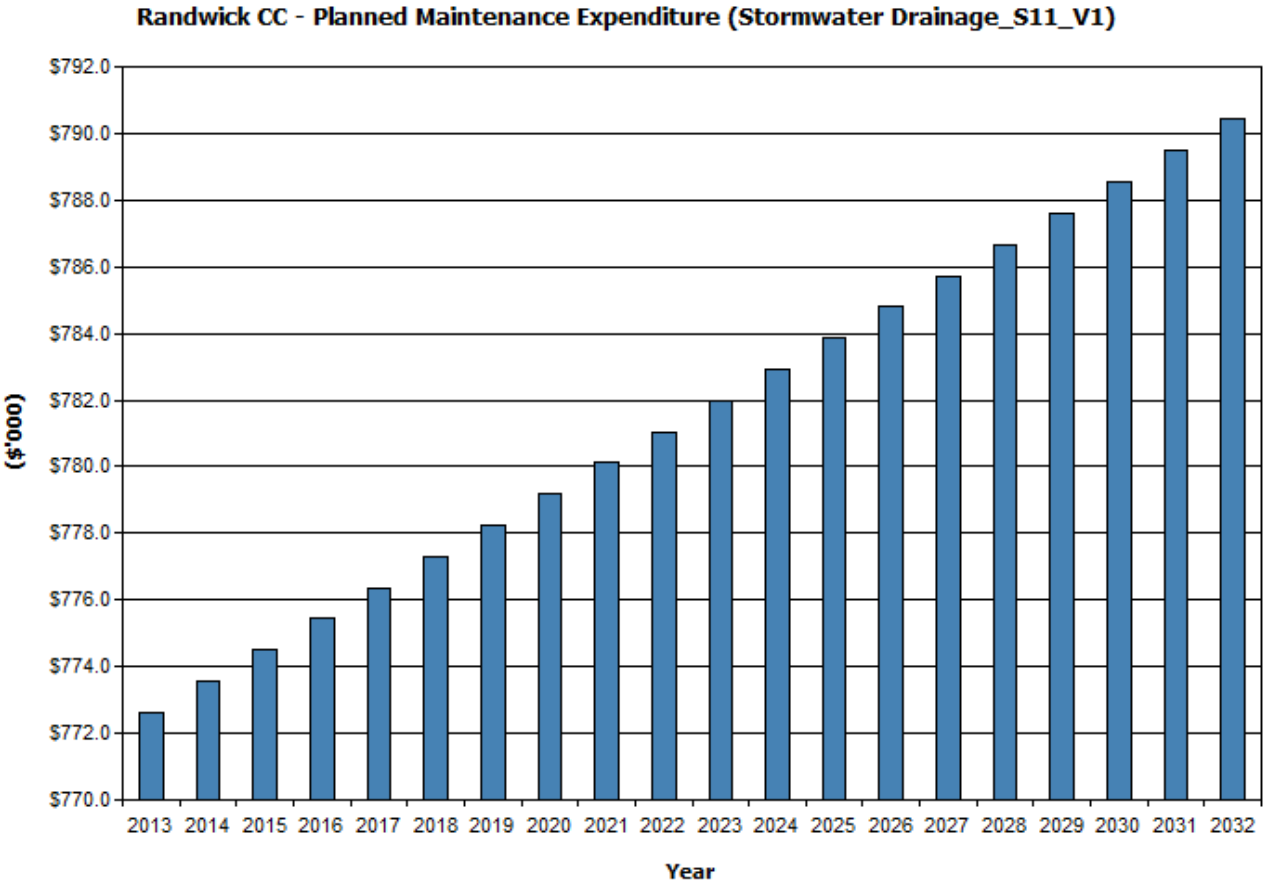
Maintenance work is carried out in accordance with the following Standards and Specifications.

- Council's standards and specifications
- AUS-SPEC is a joint venture which has published a series of documentation sets which assist Councils in providing competitive services via internal and/or external contracts.

5.3.3 Summary of future maintenance expenditures

Future maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Fig 4. Note that all costs are shown in current 2012 dollar values.

Fig 4. Planned Maintenance Expenditure



Deferred maintenance, ie works that are identified for maintenance and unable to be funded are to be included in the risk assessment process in the infrastructure risk management plan.

Maintenance is funded from Council's operating budget and grants where available. This is further discussed in Section 6.2.

5.4 Renewal/Replacement Plan

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

5.4.1 Renewal plan

An indicative assessment for replacement of drainage assets follows. This is not a definitive measure as different areas of drainage may require differing levels of service or be considered higher priority to attend to. Some of the measures that need to be considered are:

- Likelihood of damage to assets or property
- Consequences of damage to assets or property
- The total cost of works

- Number of complaints from stakeholders
- Effectiveness of solution proposed
- Current structural condition of asset.

The priority ranking criteria is detailed in Table 5.4.1.

Table 5.4.1 Renewal Priority Ranking Criteria

	Criteria	Wt	Range	Score	Comments
	BCR High BCR = High Rating e.g.BCR > 1 = rating of 4-5	3	1-5	X	BCR = 0 No Prop Damage
Q To Ask? Rating E.g.	Likelihood of Damage What Is The Storm Recurrence Interval? Is The Area In A Sag Point? Is The Area A Known Flood Prone Area? High probability of damage = High Rating (e.g. Floods in a 1 in 2 year storm = rating of 4-5)	2	1-5	X	from comments in letter. May be often but no damage
Q To Ask? Rating E.g.	Consequences of Damage Is The Area A Known Flood Prone Area?, Has There Been A History of Complaints In The Area?, Is There Potential For Injuries To Occur?, Is There Potential For Property Damage To Occur?, Is the Potential Property Damage Above Ground or Above Floor Flooding? Catastrophic Consequences of Damage = High Rating (e.g. drainage line under house = rating of 4-5)	4	1-5	X	No prop damage potential slip hazard but mostly nuisance
Q To Ask? Rating E.g.	Total Cost of Works Is The Cost Prohibitive?, Can The Work Be Done Under Maintenance? Low Cost Solution = High Rating (e.g. Cost only under $5,000 and can do under maintenance = rating of 4-5)	2	1-5	X	Low cost solution
Q To Ask? Rating E.g.	No of Complaints What Is The Number of Complaints?, What Is The Number of Persons Complaining?, Has There Been A History of Complaints In The Area? No Complaints =1, Council Staff =3 Petition = 5	3	1-5	X	Written complaint From Counsellor
Q To Ask? Rating E.g.	Effectiveness of Works Proposed Will the Work Reduce Flooding Significantly? Will the Work Reduce Flooding Downstream Significantly? Reduction in risk is significant of reduced to almost zero = High Rating (e.g. Flooding reduced to an insignificant level in 1 in 100 year storm = rating of 4-5)	2	1-5	X	Expect to be effective
Q To Ask? Rating E.g.	Current Condition of Existing Infrastructure - If any Is there any infrastructure that is in need of repair anyway? If condition of infrastructure is poor = High Rating	3	1-5	X	Good
Q To Ask Rating E.g.	Likelihood of Development in Area Is there a chance a developer requiring the reconstruction/upgrade/relocation of infrastructure due to works?, Is there an opportunity to upgrade infrastructure on a demolition site? e.g. If it is likely that a developer will commence and will be conditioned to upgrade system = High Rating	1	1-5	X	No Chance of Dev.
	Total Score as Percentage (Min 20%- Max 100%)			XXX	

Priority	Score
Very Low Priority	**20-40**
Low Priority	**41-50**
Low – Medium Priority	**51-60**
Medium Priority	**61-70**
Medium – High Priority	**71-80**
High Priority	**81-90**
Extreme Urgency	**91-100**

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost.

Examples of low cost renewal include pipe relining.

5.4.2 Renewal standards

Renewal work is carried out in carried out in accordance with the following Standards and Specifications.

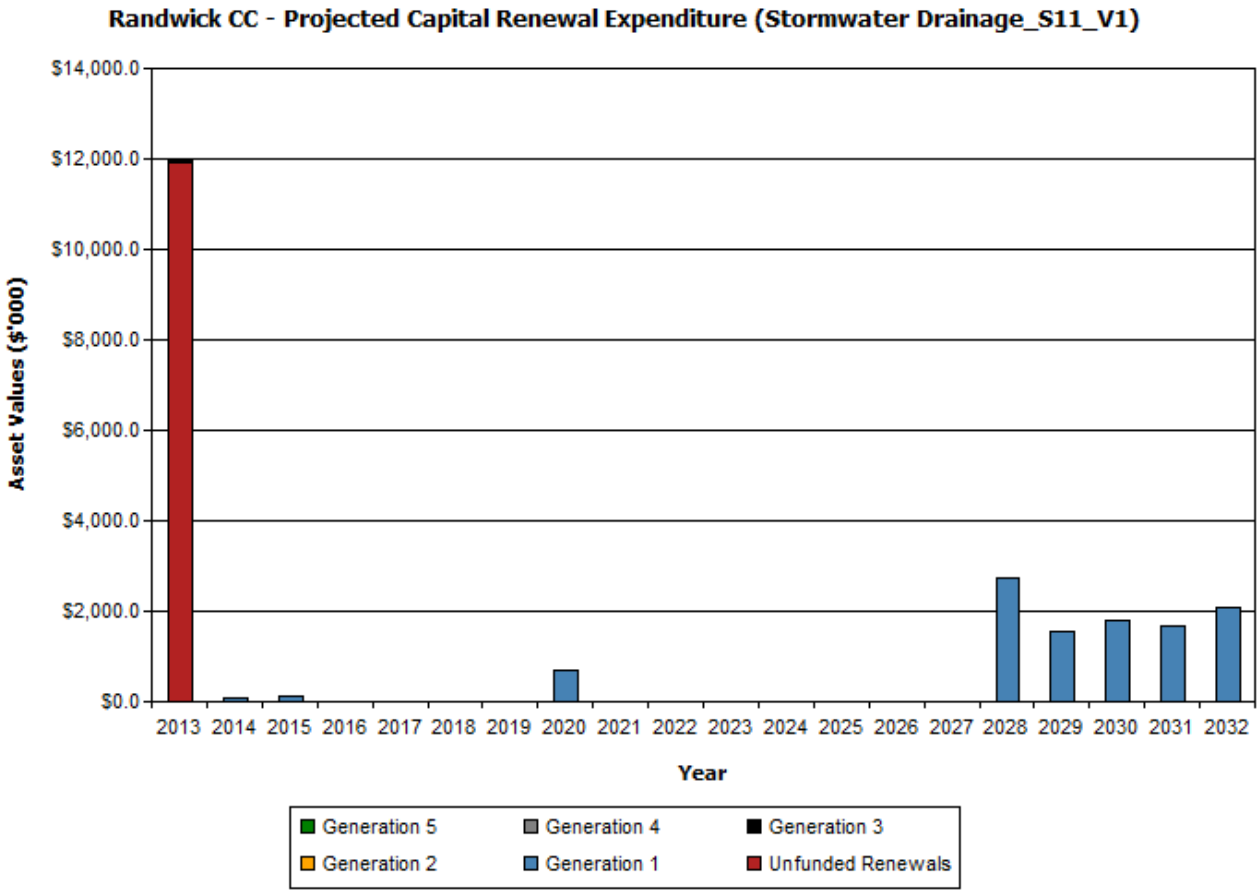
- Council's standards and specifications

5.4.3 Summary of future renewal expenditure

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised in Fig 5. Note that all costs are shown in current 2012 dollar values.

The projected capital renewal program is shown in Appendix A.

Fig 5. Projected Capital Renewal Expenditure



Deferred renewal, ie those assets identified for renewal and not scheduled for renewal in capital works programs are to be included in the risk assessment process in the risk management plan.

Renewals are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.2.

5.5 Creation/Acquisition/Upgrade Plan

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

5.5.1 Selection criteria

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

Table 5.5.1 New Assets Priority Ranking Criteria

Criteria	Weighting
Community – Function	30
Community – Quality	5
Technical – Condition	10
Technical – Risk of Failure	40
Technical – Operating/Maintenance and Lifecycle costs	15
Total	**100%**

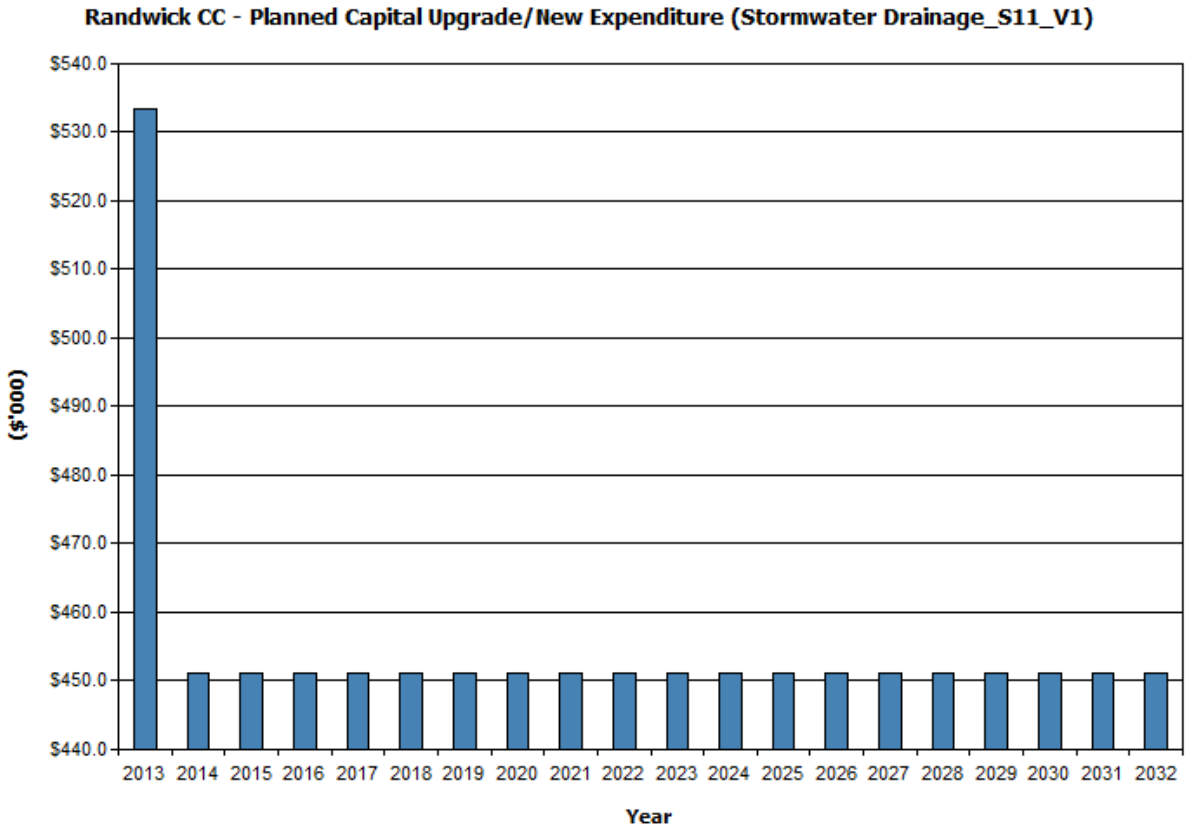
5.5.2 Standards and specifications

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

5.5.3 Summary of future upgrade/new assets expenditure

Planned upgrade/new asset expenditures are summarised in Fig 6. The planned upgrade/new capital works program is shown in Appendix C. All costs are shown in current 2012 dollar values.

Fig 6. Planned Capital Upgrade/New Asset Expenditure



New assets and services are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any.

Table 5.6 Assets identified for Disposal

Asset	Reason for Disposal	Timing	Cashflow from disposal
No assets identified for disposal at this time.			

Where cash flow projections from asset disposals are not available, these will be developed in future revisions of this asset management plan.

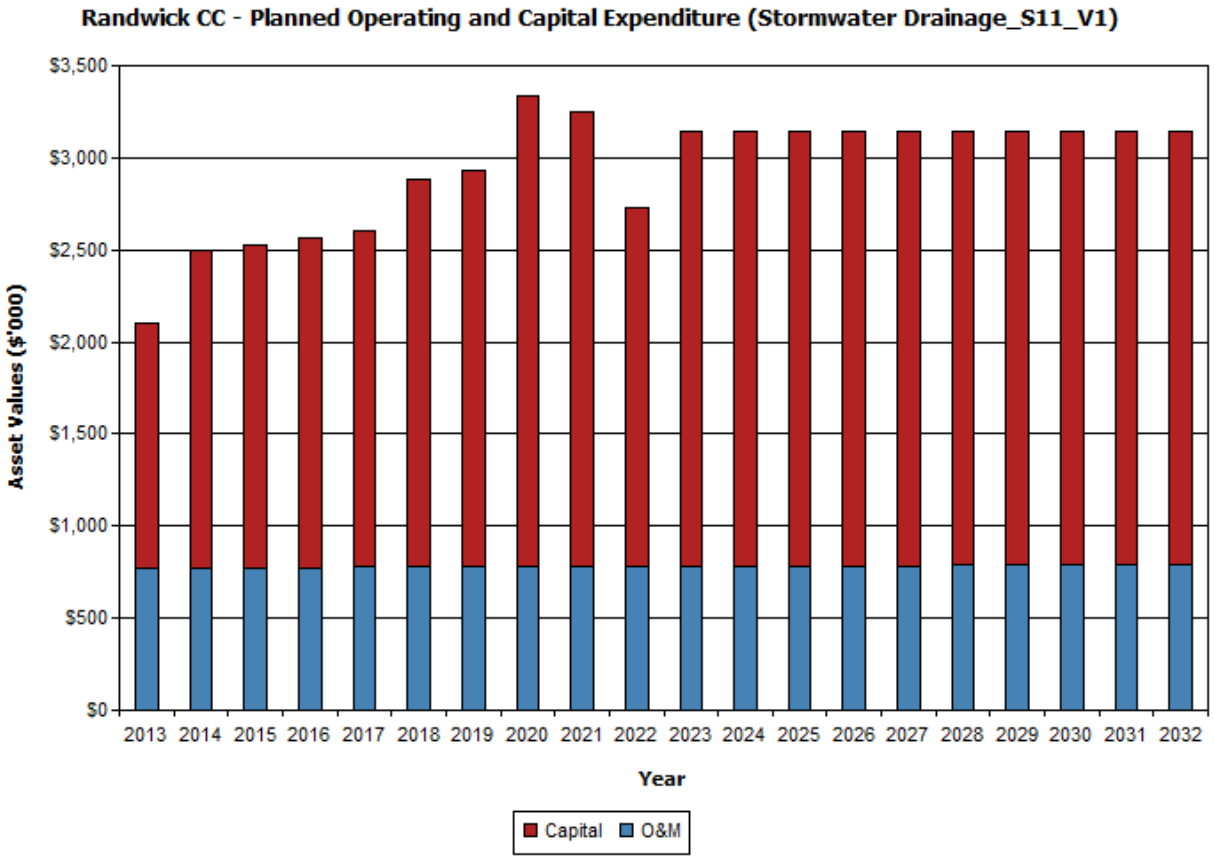
6. FINANCIAL SUMMARY

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

6.1 Financial Statements and Projections

The financial projections are shown in Fig 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets).

Fig 7. Planned Operating and Capital Expenditure



Note that all costs are shown in current 2012 dollar values.

6.1.1 Sustainability of service delivery

There are two key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs and medium term costs over the 10 year financial planning period.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include maintenance and asset consumption (depreciation expense). The annual average life cycle cost for the services covered in this asset management plan is $1,915,914.

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure at the start of the plan is $1,572,630.

A gap between life cycle costs and life cycle expenditure gives an indication as to whether present consumers are paying their share of the assets they are consuming each year. The purpose of this stormwater drainage asset management plan is to identify levels of service that the community needs and can afford and develop the necessary long term financial plans to provide the service in a sustainable manner.

The life cycle gap for services covered by this asset management plan is $571,719 per annum in surplus. The life cycle sustainability index is 1.30.This will be critical to allow funding of future capital upgrade.

Medium term – 10 year financial planning period

This asset management plan identifies the estimated maintenance and capital expenditures required to provide an agreed level of service to the community over a 20 year period for input into a 10 year financial plan and funding plan to provide the service in a sustainable manner.

This may be compared to existing or planned expenditures in the 20 year period to identify any gap. In a core asset management plan, a gap is generally due to increasing asset renewals.

Fig 8 shows the projected asset renewals in the 20 year planning period from the asset register. The projected asset renewals are compared to planned renewal expenditure in the capital works program and capital renewal expenditure in year 1 of the planning period as shown in Fig 8. Table 6.1.1 shows the annual and cumulative funding gap between projected and planned renewals.

Fig 8. Projected and Planned Renewals and Current Renewal Expenditure

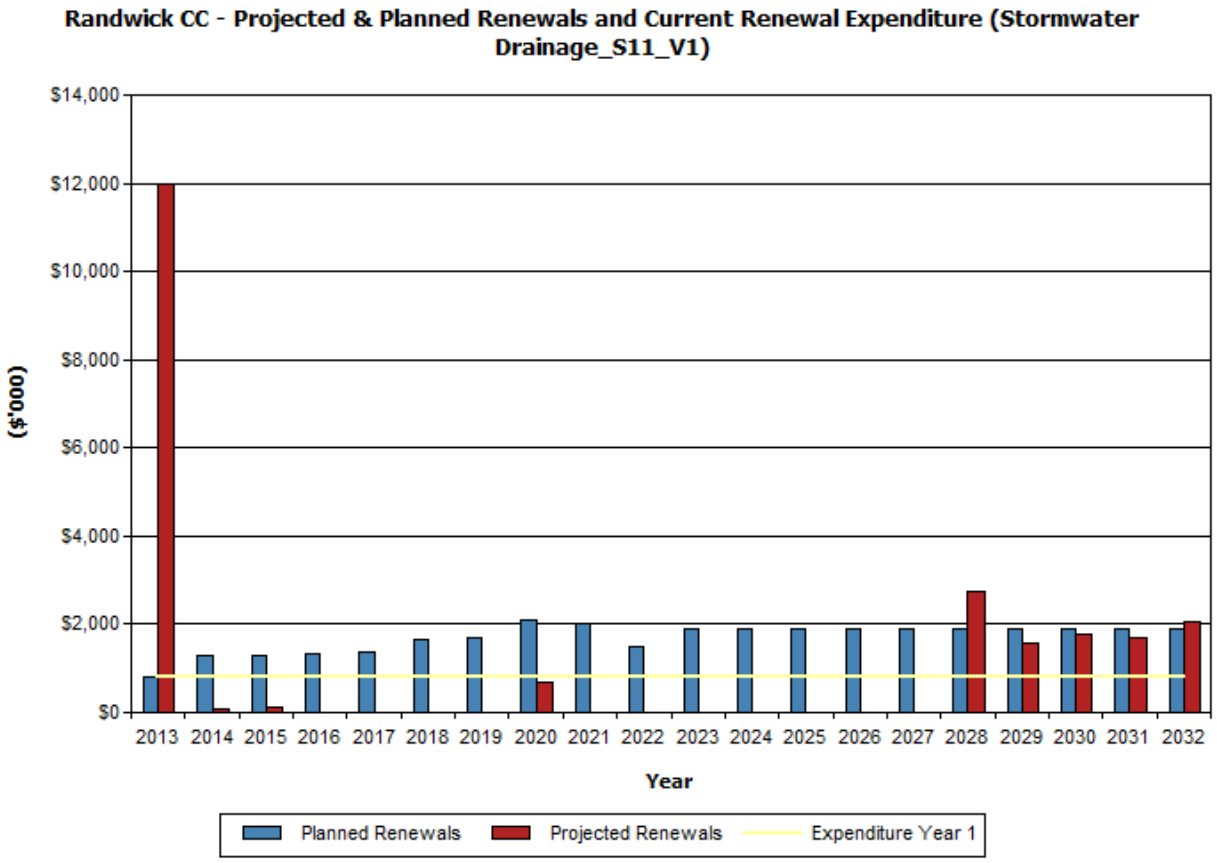


Table 6.1.1 Projected and Planned Renewals and Expenditure Gap

Table 6.1.1 shows the gap between projected and planned renewals.

Year End Jun-30	Total Operations Expenditure ($'000)	Total Maintenance Expenditure ($'000)	Projected Capital Renewal Expenditure ($'000)	Planned Capital Upgrade/New Expenditure ($'000)	Planned Disposals ($'000)	Planned Capital Renewal Expenditure ($'000)	Shortfall/Surplus in Renewal Expenditure (Projected-Planned) ($'000)	Cumulative Renewal Funding Shortfall ($'000)
2013	$0.00	$772.63	$11,964.53	$533.53	$0.00	$800.00	**$11,164.53**	$11,164.53
2014	$0.00	$773.56	$76.23	$451.18	$0.00	$1,272.32	-$1,196.09	$9,968.43
2015	$0.00	$774.50	$103.32	$451.18	$0.00	$1,304.36	-$1,201.04	$8,767.39
2016	$0.00	$775.43	$0.00	$451.18	$0.00	$1,337.55	-$1,337.55	$7,429.84
2017	$0.00	$776.37	$0.00	$451.18	$0.00	$1,371.94	-$1,371.94	$6,057.90
2018	$0.00	$777.31	$15.93	$451.18	$0.00	$1,657.55	-$1,641.63	$4,416.27
2019	$0.00	$778.24	$0.00	$451.18	$0.00	$1,703.70	-$1,703.70	$2,712.57
2020	$0.00	$779.18	$678.29	$451.18	$0.00	$2,101.52	-$1,423.23	$1,289.34
2021	$0.00	$780.12	$0.00	$451.18	$0.00	$2,021.07	-$2,021.07	-$731.73
2022	$0.00	$781.05	$0.00	$451.18	$0.00	$1,495.94	-$1,495.94	-$2,227.67
2023	$0.00	$781.99	$0.00	$451.18	$0.00	$1,905.63	-$1,905.63	-$4,133.30
2024	$0.00	$782.92	$0.00	$451.18	$0.00	$1,905.63	-$1,905.63	-$6,038.92
2025	$0.00	$783.86	$1.73	$451.18	$0.00	$1,905.63	-$1,903.90	-$7,942.82
2026	$0.00	$784.80	$0.00	$451.18	$0.00	$1,905.63	-$1,905.63	-$9,848.44
2027	$0.00	$785.73	$0.00	$451.18	$0.00	$1,905.63	-$1,905.63	-$11,754.07
2028	$0.00	$786.67	$2,736.36	$451.18	$0.00	$1,905.63	**$830.74**	-$10,923.33
2029	$0.00	$787.61	$1,559.62	$451.18	$0.00	$1,905.63	-$346.01	-$11,269.34
2030	$0.00	$788.54	$1,793.31	$451.18	$0.00	$1,905.63	-$112.32	-$11,381.66
2031	$0.00	$789.48	$1,688.21	$451.18	$0.00	$1,905.63	-$217.41	-$11,599.08
2032	$0.00	$790.42	$2,070.34	$451.18	$0.00	$1,905.63	**$164.72**	-$11,434.36

Please note in column 8, “Shortfall/Surplus,” a negative value indicates a surplus and a positive value indicates a shortfall.

Providing services in a sustainable manner will require matching of projected asset renewals to meet agreed service levels with planned capital works programs and available revenue.

A gap between projected asset renewals, planned asset renewals and funding indicates that further work is required to manage required service levels and funding to eliminate any funding gap.

Council will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and review the background data for this asset management plan. Council will also consider a range of service level scenarios that predict the likely service consequences of the current funding level, the target funding level and options to extend asset life.

Council's long term financial plan covers the first 10 years of the 20 year planning period. The total maintenance and capital renewal expenditure required over the 10 years is $20,606,690. This is an average expenditure of $2,060,669. Estimated maintenance and capital renewal expenditure in year 1 is $1,572,630. The 10 year sustainability index is 1.11.

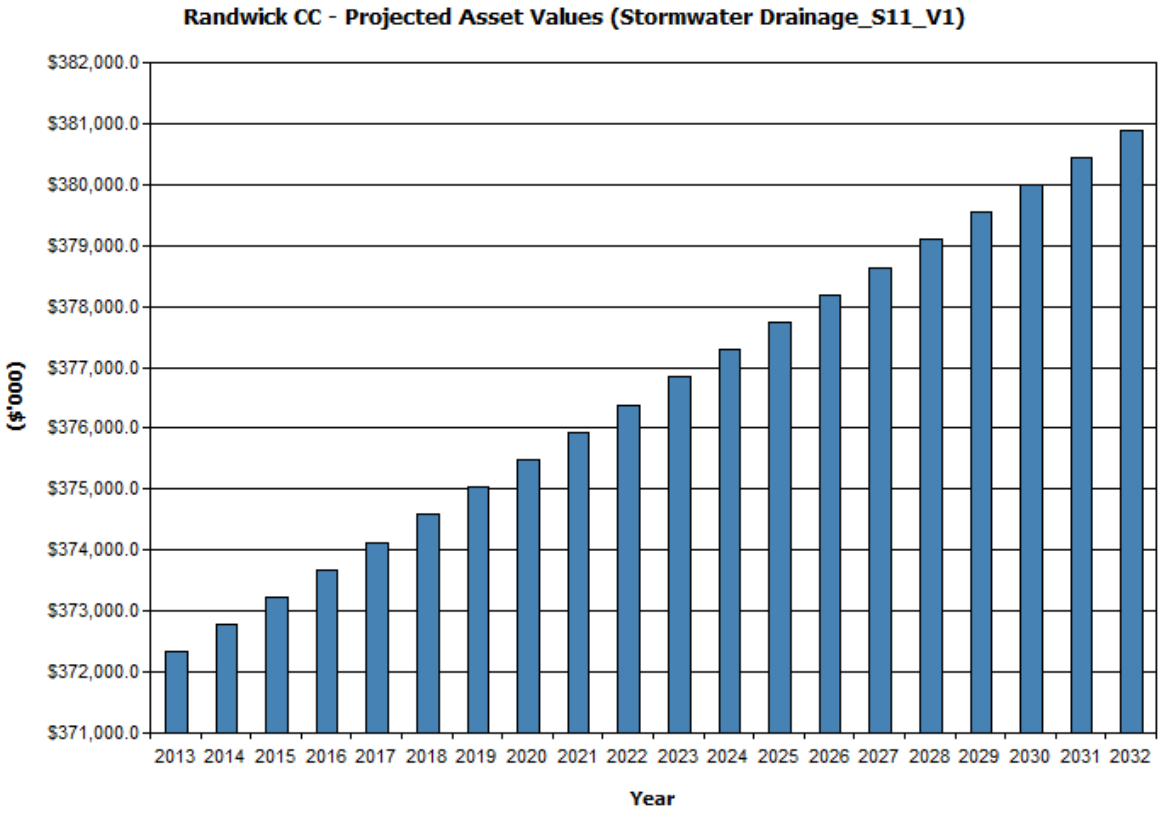
6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets and is inclusive of Council's Stormwater Service Levy which was implemented to fund capital renewal and upgrade for stormwater infrastructure. The funding strategy is detailed in the Council's 20 year long term financial plan.

6.3 Valuation Forecasts

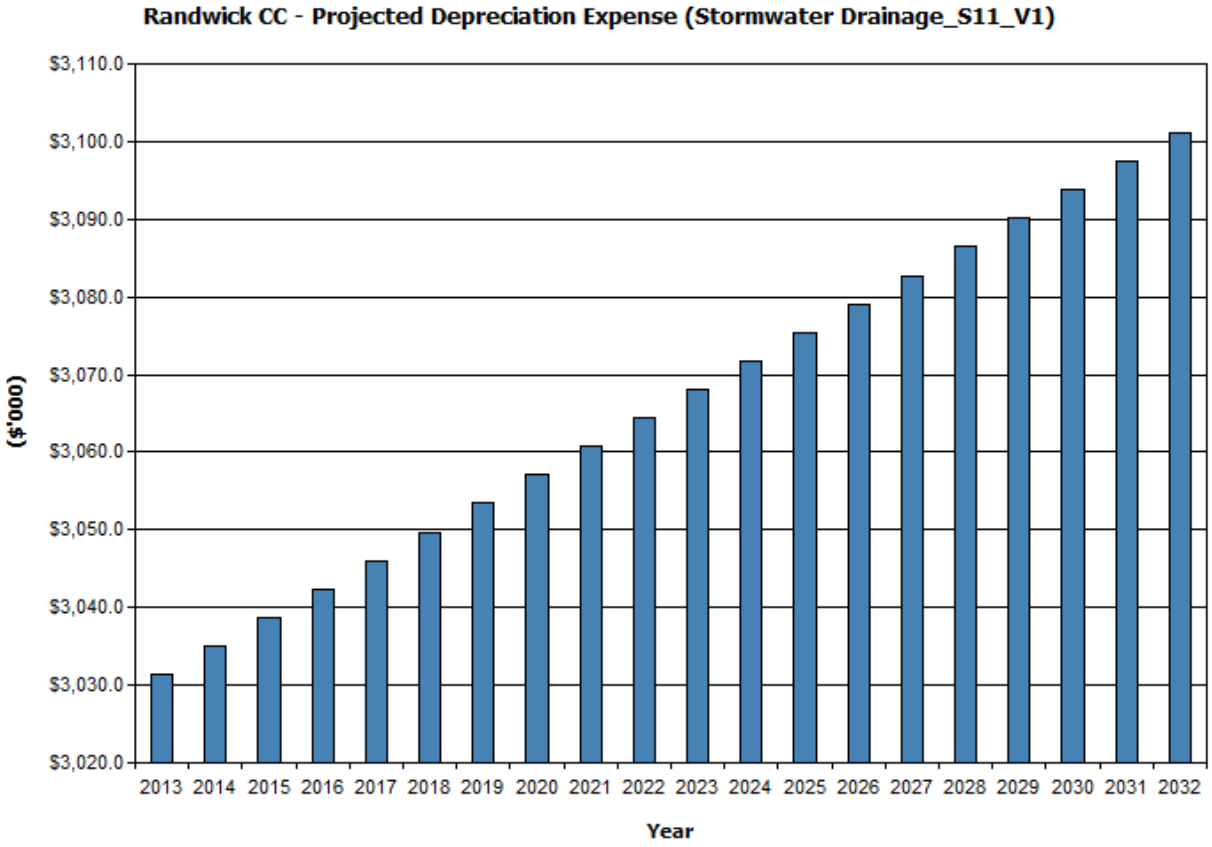
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Fig 9 shows the projected replacement cost asset values over the planning period in current 2012 dollar values.

Fig 9. Projected Asset Values



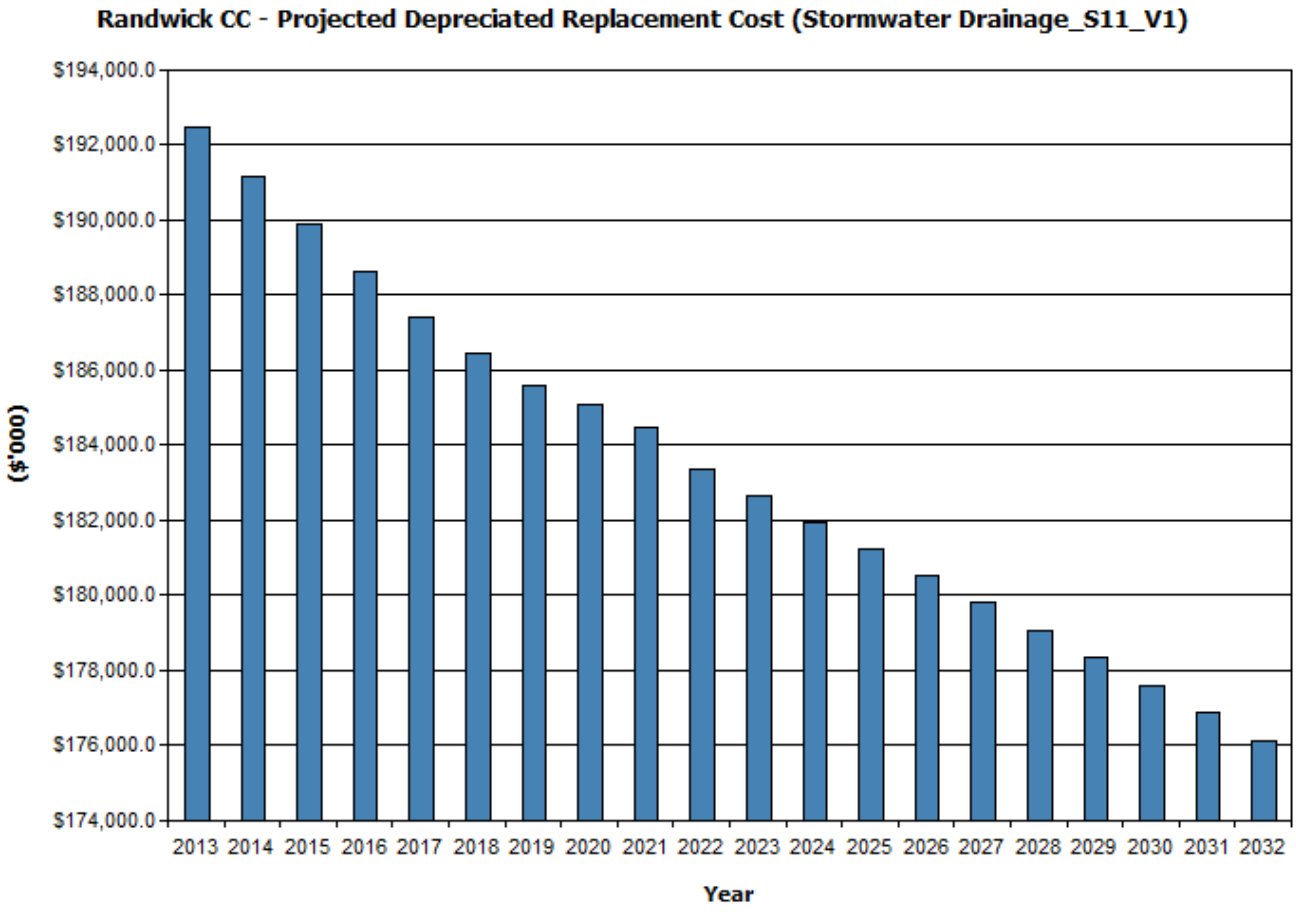
Depreciation expense values are forecast in line with asset values as shown in Fig 10.

Fig 10. Projected Depreciation Expense



The depreciated replacement cost (current replacement cost less accumulated depreciation) will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Fig 11.

Fig 11. Projected Depreciated Replacement Cost



6.4 Key Assumptions made in Financial Forecasts

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

Key assumptions made in this asset management plan are:

- The current asset register is up to date and complete.
- The estimates used for current rates of renewal and maintenance will remain constant at current 2012 values for the next 20 years.
- The renewal cost was based on an indexed replacement cost. It was approximated that assets would contain a 20% increase in renewals as various assets within the stormwater drainage network are under capacity and have to be increased in size to meet required levels of service.

Accuracy of future financial forecasts may be improved in future revisions of this asset management plan by the following actions.

- Complete an asset revaluation in accordance with Australian Infrastructure Financial Management Guidelines with a review of asset inventory, condition, useful life, remaining life, unit rates and residual values.

- Run modelling scenarios for different service level outcomes.
- Review expenditure options for maintenance and renewal combinations to reduce overall life cycle cost without increasing risk.
- Continued condition assessment and update of asset registers.

7. ASSET MANAGEMENT PRACTICES

7.1 Accounting/Financial Systems

Primary issues in the accounting of infrastructure assets relate to valuation and the change in service potential associated with depreciation and renewals.

These issues have been discussed previously, but financial systems must have the capacity to provide the required statutory and regulatory reporting requirements.

The Local Government Act 1993 requires Council to prepare an annual report as to its achievements with respect to the objectives and performance targets set out in its management plan for that year.

This report provides Council's audited financial statements including the condition of public works under the control of the council as at the end of that year, together with:

A. An estimate (at current values) of the amount of money required to bring the works up to a satisfactory standard, and

B. An estimate (at current values) of the annual expense of maintaining the works at that standard, and

C. The council's program of maintenance for that year in respect of the works.

Australian Accounting Standard AASB116 is applicable to financial reporting by local governments, and provides guidelines for accounting methods and procedures.

In 2010 Council implemented a new financial system, Finance One by Technology One. This system contains a Works and Assets Module in which works orders or tasks can be raised and costing's tracked against a particular asset. Scheduled maintenance work orders are raised through the module which can be directly related to any asset for instance, Stormwater Drainage.

7.2 Asset Management Systems

Early this year Council received access to our Strategic Asset Management Software Package, SAM. This system includes an asset register, asset definitions, modelling capabilities and planned work reports.

"Recently, this has been recognized by the introduction of legislative requirements and state based Asset Management Programs, to support infrastructure managers, such as Local Government Authorities, to forecast and plan for their future asset management funding needs.

Strategic Asset Management (SAM) allows organizations to address both these issues by systematically and optimally manage physical assets and their associated performance, risks and expenditure over the assets lifecycle to achieve specified organizational and community service levels."[2]

Trial data has been prepared for downloading into SAM and Council asset staff are currently awaiting confirmation on software support arrangements to allow data trialling.

Other systems include;

- Revaluation spreadsheets,
- GIS (ESRI ArcGIS) tables

[2] http://assetlifecycle.com.au/wp-content/uploads/Brochure-SAM-v2.7.pdf

- Eview

7.3 Information Flow Requirements and Processes

The key information flows *into* this asset management plan are:

- The asset register data on size, age, value, remaining life of the network;
- The unit rates for categories of work/material;
- The adopted service levels;
- Projections of various factors affecting future demand for services;
- Correlations between maintenance and renewal, including decay models;
- Data on new assets acquired by council.

The key information flows *from* this asset management plan are:

- The assumed Works Program and trends;
- The resulting budget, valuation and depreciation projections;
- The useful life analysis.

These will impact the Long Term Financial Plan, Strategic Business Plan, annual budget and departmental business plans and budgets.

7.4 Standards and Guidelines

- Australian Infrastructure Financial Management Guidelines 2009, IPWEA Version 1
- International Infrastructure Management Manual 2011, IPWEA
- AASB116 Australian Accounting Standard - Infrastructure, plant, property, and equipment
- DLG - Code of Accounting and Reporting Practice
- DLG - Integrated Planning Guidelines
- AUS-SPEC - a joint venture which has published a series of documentation sets which assist Councils

8. PLAN IMPROVEMENT AND MONITORING

8.1 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required cashflows identified in this asset management plan are incorporated into council's long term financial plan and Strategic Management Plan;
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan;

8.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 8.2.

Table 8.2 Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1.	Conduct building revaluation 2012-2013	Engineering Services	Asset Engineer	2012/13
2.	Insert building data into SAM	Engineering Services	Asset Engineer	By 2014/15
3.	Review and improvement of maintenance practices	Engineering Services	Asset Engineer	Ongoing
4.	Implement Asset Capitalisation and Accounting Policy in line with AIFMG to keep asset register up to date and current with financial capitalisation	Finance and Administration	Finance and Administration	Ongoing

8.3 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget preparation and amended to recognise any changes in service levels and/or resources available to provide those services as a result of the budget decision process.

The Plan has a life of 4 years with 20 year rolling forecasts and is due for revision and updating within the financial year of each council election.

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APPENDICES

Appendix A 10 Year Renewal Program

Appendix B Projected Population Details

Appendix C Footpath Sustainability Ratios

Appendix D Service Cost Long Term Financial Plan

Appendix A 10 Year Renewal Program

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2013	MDON02C59205900	Box Culvert	Brick	Doncaster Ave	KENSINGTON	625962.73
2013	MDON02C59805970	Box Culvert	Brick	Doncaster Ave	KENSINGTON	105034.61
					Totals	$730,997.34
2014	MDON02C59005890	Box Culvert	Brick	Doncaster Ave	KENSINGTON	261562.2
2014	MDON02C60805980	Box Culvert	Brick	Doncaster Ave	KENSINGTON	47988.48
2014	MCPC06C14501440	Box Culvert	Brick	Randwick St	RANDWICK	13526.73
2014	MDON02C63006250	Box Culvert	Concrete	Alison Rd	CENTENNIAL PARK	$36,255.68
2014	MDON02C63006100	Box Culvert	Concrete	Alison Rd	CENTENNIAL PARK	119058.87
2014	MDON02C63006200	Box Culvert	Concrete	Alison Rd	CENTENNIAL PARK	35776
2014	MDON02C61006090	Box Culvert	Concrete	Alison Rd	RANDWICK	830946.93
					Totals	$1,345,114.89
2015	MDON02C58705850	Box Culvert	Rendered Brick	Doncaster Ave	KENSINGTON	80066.72
2015	MDON02C58905870	Box Culvert	Rendered Brick	Doncaster Ave	KENSINGTON	35746.96
2015	ECOB16C76207610	Box Culvert	Sandstone	Alison Rd	RANDWICK	188706.54
2015	ECOB16C93709360	Box Culvert	Sandstone	Alison Rd	RANDWICK	40271.9
2015	ECOB16C93909370	Box Culvert	Sandstone	Alison Rd	RANDWICK	94554.9
2015	ECOB16C95409390	Box Culvert	Sandstone	Alison Rd	RANDWICK	32622.31
2015	ECOB16C95609540	Box Culvert	Sandstone	Alison Rd	RANDWICK	10756.23
2015	EGOR10C08700860	Box Culvert	Sandstone	Beach St	COOGEE	7522.19
2015	EGOR10C08800870	Box Culvert	Sandstone	Beach St	COOGEE	7514.96
2015	MPOW15C78607850	Box Culvert	Sandstone	High St	RANDWICK	22053.49
2015	ECLO09C39903980	Box Culvert	Sandstone	Varna St	WAVERLEY	49330.32
2015	MCPE08C00200010	Box Culvert	Stone	AVOCA ST	QUEENS PARK	91243.79
2015	MCPE08C10301020	Box Culvert	Stone	CLOVELLY RD	RANDWICK	88873.4
2015	MCPE08C09900980	Box Culvert	Stone	CLOVELLY RD	RANDWICK	74827.02
2015	MCPE08C10000990	Box Culvert	Stone	CLOVELLY RD	RANDWICK	99629.75
					Totals	$923,720.48

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2016	MCPE08C00400020	Box Culvert	Stone	DARLEY RD	RANDWICK	113966.87
2016	MCPE08C01500040	Box Culvert	Stone	DARLEY RD	RANDWICK	6847.68
2016	MELK12C02200210	Box Culvert	Stone	Maitland Ave	KINGSFORD	32512.31
2016	MELK12C02200210	Box Culvert	Stone	Maitland Ave	KINGSFORD	32512.31
2016	MELK12C02100200	Box Culvert	Stone	Tunstall Ave	KINGSFORD	32387.06
2016	MELK12C02200210	Box Culvert	Stone	WANSEY ROAD	RANDWICK	32512.31
2016	MELK12C02200210	Box Culvert	Stone	WANSEY ROAD	RANDWICK	32512.31
2016	MCPE08C09800970	Box Culvert	Stone & Brick	CLOVELLY RD	RANDWICK	114208.83
2016	MDON02C55105500	Conduits	Brick	Doncaster Ave	KENSINGTON	87226.54
2016	MDON02C59105900	Conduits	RCP	Doncaster Ave	KENSINGTON	6759.26
2016	MELK12C02100200	Conduits	RCP	Tunstall Ave	KINGSFORD	32246.26
2016	MDON02C85808560	Conduits	SGWP	Abbotford Lane	KENSINGTON	39801.23
2016	ECOB16C98809870	Conduits	SGWP	Ada St	RANDWICK	22637.78
2016	ECOB16C99009890	Conduits	SGWP	Ada St	RANDWICK	3828.44
2016	MDON02C73307320	Conduits	SGWP	Addison St	KENSINGTON	5493.92
2016	ECLO09C46304620	Conduits	SGWP	Albion St	RANDWICK	14855.03
2016	ECLO09C46404630	Conduits	SGWP	Albion St	RANDWICK	2530.66
2016	ESC17C11201110	Conduits	SGWP	Alexander St	COOGEE	7101.72
2016	ECOB16C29602950	Conduits	SGWP	Alison Rd	COOGEE	7154.84
2016	ECOB16C93809370	Conduits	SGWP	Alison Rd	RANDWICK	4088
2016	MHEF24C43304320	Conduits	SGWP	Alma Rd	MAROUBRA	4325.92
2016	ECLO09C23102300	Conduits	SGWP	Andrew St	CLOVELLY	1676.29
2016	MDON02C69006890	Conduits	SGWP	Anzac Parade	KENSINGTON	23028.72
2016	MDON02C50905080	Conduits	SGWP	Anzac Parade	KENSINGTON	26414.81
2016	MDON02C73207310	Conduits	SGWP	Anzac Parade	KENSINGTON	37208.67
2016	EMRB25C83108300	Conduits	SGWP	Anzac Parade	MAROUBRA	8554.51
2016	MPOW15C22702260	Conduits	SGWP	Anzac Pde	KINGSFORD	7647.19
2016	MPOW15C30903080	Conduits	SGWP	Anzac Pde	KINGSFORD	4920.74
2016	ELOB32C23702360	Conduits	SGWP	Anzac Pde	MAROUBRA	14841.37
2016	ELOB32C26702660	Conduits	SGWP	Anzac Pde	MATRAVILLE	5087.74
2016	EGOR10C15801560	Conduits	SGWP	Arden St	CLOVELLY	5591.26
2016	ECLO09C31503140	Conduits	SGWP	Arden St	CLOVELLY	15744.83

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2016	EGOR10C15501540	Conduits	SGWP	Arden St	COOGEE	1135.55
2016	EGOR10C10501040	Conduits	SGWP	Arden St	COOGEE	2649.63
2016	ESC17C08400820	Conduits	SGWP	Arden St	COOGEE	11150.07
2016	ECOB16C13401330	Conduits	SGWP	Arden St	COOGEE	27288.95
2016	MPOW15C70107000	Conduits	SGWP	Arthur St	RANDWICK	4040.98
2016	MPOW15C71007080	Conduits	SGWP	Arthur St	RANDWICK	52484.06
2016	MELK12C01600150	Conduits	SGWP	ARTHUR STREET	RANDWICK	13901.13
					Totals	$898,875.78
2017	MELK12C01400130	Conduits	SGWP	ARTHUR STREET	RANDWICK	30281.47
2017	MDON02C82308220	Conduits	SGWP	Ascot St	KENSINGTON	13637.47
2017	MDON02C82208210	Conduits	SGWP	Ascot St	KENSINGTON	11885.48
2017	ESC17C12601240	Conduits	SGWP	Asher St	COOGEE	4033.92
2017	ESC17C12501240	Conduits	SGWP	Asher St	COOGEE	5721.03
2017	ESC17C12401220	Conduits	SGWP	Asher St	COOGEE	23512.63
2017	MMAT31C1210	Conduits	SGWP	Australia Ave	MATRAVILLE	2736.15
2017	MCPE08C02800270	Conduits	SGWP	AVOCA ST	RANDWICK	2116.07
2017	MPOW15C58905880	Conduits	SGWP	Avoca St	RANDWICK	2108.89
2017	MPOW15C63706360	Conduits	SGWP	Avoca St	RANDWICK	7552.91
2017	ECOB16C98709860	Conduits	SGWP	Avoca St	RANDWICK	18271.43
2017	ECOB16C98609850	Conduits	SGWP	Avoca St	RANDWICK	49054.24
2017	ECOB16C98909870	Conduits	SGWP	Avoca St	RANDWICK	29452.54
2017	MELK12C01000090	Conduits	SGWP	B OTANY STREET	RANDWICK	11161.57
2017	MCPC06C09500940	Conduits	SGWP	Barden Lane	RANDWICK	2736.15
2017	MCPC06C09700950	Conduits	SGWP	Barden Lane	RANDWICK	3093.03
2017	MPOW15C65006490	Conduits	SGWP	Barker St	RANDWICK	2898.37
2017	MPOW15C44504440	Conduits	SGWP	Barker St	RANDWICK	4625.22
2017	EGOR10C14301420	Conduits	SGWP	Barry St	CLOVELLY	6380.74
2017	EGOR10C16401630	Conduits	SGWP	Battery St	CLOVELLY	7888.13
2017	EGOR10C16301620	Conduits	SGWP	Battery St	CLOVELLY	17184.73
2017	ESML34C12501240	Conduits	SGWP	Bay Pde	MALABAR	6186.07
2017	ESML34C04600440	Conduits	SGWP	Bay Pde	MALABAR	12090.95

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2017	ESML34C04400430	Conduits	SGWP	Bay Pde	MALABAR	9547.84
2017	EGOR10C08100750	Conduits	SGWP	Beach St	COOGEE	15489.95
2017	ESC17C02200160	Conduits	SGWP	Beach St	COOGEE	16684.76
2017	ESC17C02300160	Conduits	SGWP	Beach St	COOGEE	16961.86
2017	ESC17C00900060	Conduits	SGWP	Beach St	COOGEE	1424.08
2017	ETRS18C05200510	Conduits	SGWP	Beach St	COOGEE	5772.06
2017	ETRS18C05100500	Conduits	SGWP	Beach St	COOGEE	6578.93
2017	ESC17C15600270	Conduits	SGWP	Beach St	COOGEE	112451.21
2017	ECOB16C00800120	Conduits	SGWP	Beach st	COOGEE	5086.23
2017	ECOB16C05100490	Conduits	SGWP	Beach st	COOGEE	19077.32
2017	ECOB16C02400230	Conduits	SGWP	Beach st	COOGEE	25462.64
2017	ECOB16C00800060	Conduits	SGWP	Beach st	COOGEE	8132.74
2017	ECOB16C00600050	Conduits	SGWP	Beach st	COOGEE	26150.21
2017	ECOB16C03300320	Conduits	SGWP	Beach st	COOGEE	19482.16
2017	ECOB16C03100300	Conduits	SGWP	Beach st	COOGEE	5018.07
2017	ECOB16C03000250	Conduits	SGWP	Beach st	COOGEE	25814.95
2017	MPOW15C61806160	Conduits	SGWP	Belmore Rd	RANDWICK	12015.25
2017	ESC17C09700960	Conduits	SGWP	Berwick St	COOGEE	3488.38
2017	MPOW15C80908080	Conduits	SGWP	Botany Lane	KINGSFORD	2975.07
2017	MPOW15C80708060	Conduits	SGWP	Botany Lane	KINGSFORD	9836.59
2017	MPOW15C80808060	Conduits	SGWP	Botany Lane	KINGSFORD	3488.38
2017	MPOW15C79607950	Conduits	SGWP	Botany St	KINGSFORD	16049.18
2017	MPOW15C80308020	Conduits	SGWP	Botany St	KINGSFORD	4358.37
2017	MPOW15C21402130	Conduits	SGWP	Botany St	KINGSFORD	16698.07
2017	MELK12C10801070	Conduits	SGWP	BOTANY STREET	RANDWICK	5180.29
2017	ECLO09C14901480	Conduits	SGWP	Boundary St	CLOVELLY	5635.88
2017	MELK12C01200110	Conduits	SGWP	BRADLEY STREET	RANDWICK	7808.29
2017	ECLO09C34603450	Conduits	SGWP	Brandon St	CLOVELLY	5197.28
2017	ECOB16C00700060	Conduits	SGWP	Bream St	COOGEE	7437.68
2017	ECOB16C56205610	Conduits	SGWP	Bream St	COOGEE	25695.99
2017	ESC17C14101400	Conduits	SGWP	Brook St	COOGEE	17963.4
2017	ECOB16C71307120	Conduits	SGWP	Brook St	COOGEE	2702.1

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2017	ECLO09C09800970	Conduits	SGWP	Bruce Ave	CLOVELLY	3417.48
2017	BYBY36C04000390	Conduits	SGWP	Bunnerong Rd	CHIFLEY	36855.69
2017	BYBY36C00600055	Conduits	SGWP	Bunnerong Rd	MATRAVILLE	11786.94
2017	BYBY36C00600055	Conduits	SGWP	Bunnerong Rd	MATRAVILLE	11759.65
2017	ECLO09C29902980	Conduits	SGWP	Burnie St	CLOVELLY	18476.53
2017	ECLO09C27202710	Conduits	SGWP	Burnie St	CLOVELLY	6819.14
2017	ECLO09C27902780	Conduits	SGWP	Burnie St	CLOVELLY	15932.66
2017	ECLO09C27702760	Conduits	SGWP	Burnie St	CLOVELLY	10373.55
2017	ECLO09C26202610	Conduits	SGWP	Burnie St	CLOVELLY	11766.51
2017	MCPW05C03500340	Conduits	SGWP	Burton St	RANDWICK	9376.44
2017	ECOB16C51005090	Conduits	SGWP	Byron St	COOGEE	3828.44
2017	ECOB16C50905080	Conduits	SGWP	Byron St	COOGEE	19607.25
					Totals	$900,274.68
2018	ECOB16C41504120	Conduits	SGWP	Carey Lane	RANDWICK	20688.73
2018	ECOB16C41304120	Conduits	SGWP	Carey Lane	RANDWICK	4431.18
2018	ECOB16C41204110	Conduits	SGWP	Carey Lane	RANDWICK	18752.88
2018	ECOB16C47604750	Conduits	SGWP	Carr St	COOGEE	3352.19
2018	ESC17C05100500	Conduits	SGWP	Carr St	COOGEE	26120.31
2018	ESC17C06700660	Conduits	SGWP	Carr St	COOGEE	27621.02
2018	ECOB16C56105600	Conduits	SGWP	Carrington Rd	COOGEE	40568.04
2018	ECOB16C56005590	Conduits	SGWP	Carrington Rd	COOGEE	25329.16
2018	ECOB16C56305610	Conduits	SGWP	Carrington Rd	COOGEE	13572.59
2018	ECOB16C35003490	Conduits	SGWP	Carrington Rd	COOGEE	6487.48
2018	ECOB16C34903480	Conduits	SGWP	Carrington Rd	COOGEE	8249.03
2018	ECOB16C36003590	Conduits	SGWP	Carrington Rd	RANDWICK	23716.88
2018	ECOB16C36203600	Conduits	SGWP	Carrington Rd	RANDWICK	4855.85
2018	ECOB16C63006290	Conduits	SGWP	Carrington Rd	RANDWICK	49599.39
2018	ECOB16C62906280	Conduits	SGWP	Carrington Rd	RANDWICK	42988.87
2018	MCPE08C19301920	Conduits	SGWP	CARRINGTON RD	RANDWICK	11636.74
2018	ECOB16C58105800	Conduits	SGWP	Carrington Rd	RANDWICK	3612.15
2018	ECOB16C35103490	Conduits	SGWP	Carrington Rd	RANDWICK	19730.21

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2018	MCPE08C04800470	Conduits	SGWP	CARTER ST	RANDWICK	3991.2
2018	MCPE08C06100470	Conduits	SGWP	CARTER ST	RANDWICK	6180.61
2018	MCPE08C04200410	Conduits	SGWP	CASTLE LANE	RANDWICK	6607.85
2018	MCPE08C04900480	Conduits	SGWP	CASTLE LANE	RANDWICK	4001.68
2018	MHEF24C84508430	Conduits	SGWP	Charman Ave	MAROUBRA	5573.02
2018	MCPW05C07800740	Conduits	SGWP	Church St	RANDWICK	8081.96
2018	MCPW05C08600840	Conduits	SGWP	Church St	RANDWICK	8219.25
2018	MELK12C04900480	Conduits	SGWP	CHURCH STREET	RANDWICK	6110.37
2018	MELK12C05900570	Conduits	SGWP	CHURCH STREET	RANDWICK	5876.81
2018	ETRS18C16001590	Conduits	SGWP	Clifford St	COOGEE	7191.85
2018	ETRS18C15901580	Conduits	SGWP	Clifford St	COOGEE	627.26
2018	ECLO09C44604450	Conduits	SGWP	Clifton Rd	CLOVELLY	4380
2018	EGOR10C14201410	Conduits	SGWP	Clovelly Rd	CLOVELLY	16249.12
2018	EGOR10C14101400	Conduits	SGWP	Clovelly Rd	CLOVELLY	9700.79
2018	EGOR10C14701420	Conduits	SGWP	Clovelly Rd	CLOVELLY	7984.59
2018	EGOR10C15701560	Conduits	SGWP	Clovelly Rd	CLOVELLY	3243.65
2018	EGOR10C15601550	Conduits	SGWP	Clovelly Rd	CLOVELLY	21056.43
2018	ECLO09C26302620	Conduits	SGWP	Clovelly Rd	CLOVELLY	30973.61
2018	ECLO09C24002390	Conduits	SGWP	Clovelly Rd	CLOVELLY	7646.07
2018	ECLO09C24202410	Conduits	SGWP	Clovelly Rd	CLOVELLY	19798.89
2018	ECLO09C25802570	Conduits	SGWP	Clovelly Rd	CLOVELLY	3222.81
2018	ECLO09C26402630	Conduits	SGWP	Clovelly Rd	CLOVELLY	2909.18
2018	ECLO09C24502440	Conduits	SGWP	Clovelly Rd	CLOVELLY	7429.77
2018	ECLO09C04300410	Conduits	SGWP	Clovelly Rd	CLOVELLY	14854.41
2018	ECLO09C01200110	Conduits	SGWP	Clovelly Rd	CLOVELLY	14530.77
2018	ECLO09C01100100	Conduits	SGWP	Clovelly Rd	CLOVELLY	4042.79
2018	ECLO09C00900080	Conduits	SGWP	Clovelly Rd	CLOVELLY	1358.28
2018	ECLO09C04200410	Conduits	SGWP	Clovelly Rd	CLOVELLY	4902.58
2018	ECLO09C01300120	Conduits	SGWP	Clovelly Rd	CLOVELLY	5101.62
2018	MCPE08C14801470	Conduits	SGWP	CLOVELLY RD	RANDWICK	19066.51
2018	MCPE08C03400320	Conduits	SGWP	CLOVELLY RD	RANDWICK	14326.01
2018	ECOB16C36103600	Conduits	SGWP	Clovelly Rd	RANDWICK	5201.92

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2018	ECOB16C38603850	Conduits	SGWP	Clovelly Rd	RANDWICK	24809.17
2018	MCPE08C10101000	Conduits	SGWP	CLOVELLY RD	RANDWICK	4206.96
2018	ECOB16C82708250	Conduits	SGWP	Clovelly Rd	RANDWICK	17917.63
2018	MCPE08C04000380	Conduits	SGWP	CLOVELLY RD	RANDWICK	12748.81
2018	MCPE08C03200310	Conduits	SGWP	CLOVELLY RD	RANDWICK	54029.09
2018	ECOB16C16601650	Conduits	SGWP	Coogee Bay Rd	COOGEE	4909.92
2018	ECOB16C16401630	Conduits	SGWP	Coogee Bay Rd	COOGEE	6499.7
2018	ECOB16C87708760	Conduits	SGWP	Coogee St	RANDWICK	15605.77
2018	MELK12C06900680	Conduits	SGWP	COOK STREET	RANDWICK	17923.21
2018	EBUN22C24702460	Conduits	SGWP	Cooper St	MAROUBRA	5688.59
2018	MCPW05C08500840	Conduits	SGWP	Cowper St	RANDWICK	6240.14
2018	MCPW05C08400810	Conduits	SGWP	Cowper St	RANDWICK	15421.45
2018	MCPW05C08200810	Conduits	SGWP	Cowper St	RANDWICK	26850.61
2018	ELOB32C03100290	Conduits	SGWP	Dacre St	MALABAR	11733.45
2018	ESML34C18501840	Conduits	SGWP	Dacre St	MALABAR	48190.79
					Totals	$904,529.65
2019	MCPN07C01100100	Conduits	SGWP	Dangar Lane	RANDWICK	4066.37
2019	MCPN07C01000070	Conduits	SGWP	Dangar Lane	RANDWICK	15031.25
2019	MCPN07C00700060	Conduits	SGWP	Dangar Lane	RANDWICK	11487.65
2019	MCPN07C01200100	Conduits	SGWP	Dangar Lane	RANDWICK	20585.5
2019	MCPN07C01400120	Conduits	SGWP	Dangar Lane	RANDWICK	4909.92
2019	MCPC06C03300320	Conduits	SGWP	Dangar St	RANDWICK	9197.58
2019	MCPE08C00300020	Conduits	SGWP	DARLEY RD	QUEENS PARK	26993.76
2019	MCPW05C01500140	Conduits	SGWP	Darley Rd	RANDWICK	9506.22
2019	MELK12C04800470	Conduits	SGWP	Day Ave	KINGSFORD	33294.47
2019	MELK12C04800470	Conduits	SGWP	Day Ave	KINGSFORD	33294.47
2019	ELUR23C07100700	Conduits	SGWP	Denning St	SOUTH COOGEE	24160.29
2019	ECOB16C71807160	Conduits	SGWP	Division St	COOGEE	7762.42
2019	ECOB16C52505240	Conduits	SGWP	Dolphin St	COOGEE	6002.22
2019	ECOB16C52705250	Conduits	SGWP	Dolphin St	COOGEE	14891.99
2019	ECOB16C14601450	Conduits	SGWP	Dolphin St	COOGEE	33709.76

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2019	ECOB16C04900480	Conduits	SGWP	Dolphin St	COOGEE	23308.67
2019	ECOB16C55605550	Conduits	SGWP	Dolphin St	COOGEE	4088
2019	ECOB16C86008590	Conduits	SGWP	Dolphin St	RANDWICK	38623.55
2019	ECOB16C86208610	Conduits	SGWP	Dolphin St	RANDWICK	43864.87
2019	MDON02C58005790	Conduits	SGWP	Doncaster Ave	KENSINGTON	4271.85
2019	MDON02C59405930	Conduits	SGWP	Doncaster Ave	KENSINGTON	6759.26
2019	MDON02C59605950	Conduits	SGWP	Doncaster Ave	KENSINGTON	6889.03
2019	MDON02C58805870	Conduits	SGWP	Doncaster Ave	KENSINGTON	8067.85
2019	MCPE08C19401930	Conduits	SGWP	DOVE LANE	RANDWICK	50353.76
2019	ESC17C10401030	Conduits	SGWP	Dudley St	COOGEE	7626.24
2019	ESC17C10201010	Conduits	SGWP	Dudley St	COOGEE	1403.73
2019	ESC17C12701240	Conduits	SGWP	Dudley St	COOGEE	10467.6
2019	ESC17C12301220	Conduits	SGWP	Dudley St	COOGEE	2430.34
2019	ESC17C12201030	Conduits	SGWP	Dudley St	COOGEE	6743.08
2019	ECOB16C65106490	Conduits	SGWP	Dudley St	RANDWICK	17920.14
2019	ECOB16C65106490	Conduits	SGWP	Dudley St	RANDWICK	18244.58
2019	ECOB16C65606550	Conduits	SGWP	Dudley St	RANDWICK	40162.07
2019	ECOB16C65506540	Conduits	SGWP	Dudley St	RANDWICK	16450.85
2019	ECOB16C51205080	Conduits	SGWP	Dudley St	RANDWICK	40706.94
2019	EMRB25C04400430	Conduits	SGWP	Duncan St	MAROUBRA	9819.85
2019	ETRS18C03100300	Conduits	SGWP	Dundas St	COOGEE	6316.79
2019	ETRS18C04200410	Conduits	SGWP	Dundas St	COOGEE	4704.44
2019	ETRS18C02000190	Conduits	SGWP	Dundas St	COOGEE	6597.03
2019	ECOB16C94509420	Conduits	SGWP	Dutruc St	RANDWICK	20203.82
2019	ECOB16C94309420	Conduits	SGWP	Dutruc St	RANDWICK	54923.59
2019	ECOB16C94209410	Conduits	SGWP	Dutruc St	RANDWICK	52097.93
2019	ECOB16C94109400	Conduits	SGWP	Dutruc St	RANDWICK	4686.08
2019	ECOB16C94009390	Conduits	SGWP	Dutruc St	RANDWICK	9372.15
2019	MCPN07C02600240	Conduits	SGWP	Earl Lane	RANDWICK	42004.72
2019	ECLO09C13401330	Conduits	SGWP	Eastbourne Ave	CLOVELLY	10847.25
2019	MELK12C07200710	Conduits	SGWP	Eastern Ave	KINGSFORD	33928.38
2019	ESC17C14301420	Conduits	SGWP	Edgcumbe Ave	COOGEE	19747.84

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2019	EGOR10C15001490	Conduits	SGWP	Fern St	CLOVELLY	24928.14
					Totals	$903,454.29
2020	EGOR10C15201500	Conduits	SGWP	Fern St	CLOVELLY	9635.99
2020	MELK12C07600720	Conduits	SGWP	FRANCES STREET	RANDWICK	65347.56
2020	MELK12C07700760	Conduits	SGWP	FRANCES STREET	RANDWICK	4759.11
2020	MELK12C05600550	Conduits	SGWP	FRANCES STREET	RANDWICK	8129.07
2020	MELK12C05800570	Conduits	SGWP	FRANCES STREET	RANDWICK	4452.13
2020	MELK12C03900400	Conduits	SGWP	FRANCES STREETT	RANDWICK	19661.32
2020	EMRB25C39503930	Conduits	SGWP	French St	MAROUBRA	11964.71
2020	MCPE08C18101800	Conduits	SGWP	FRENCHMANS RD	RANDWICK	29504.03
2020	MCPE08C18901880	Conduits	SGWP	FRENCHMANS RD	RANDWICK	29041.51
2020	MELK12C02500240	Conduits	SGWP	Gardeners Rd	EASTLAKES	13291.4
2020	MELK12C01000090	Conduits	SGWP	Gardeners Rd	KINGSFORD	11161.57
2020	MELK12C00900080	Conduits	SGWP	Gardeners Rd	KINGSFORD	48937.39
2020	EGAR19C01300120	Conduits	SGWP	Garnet St	SOUTH COOGEE	6348.22
2020	EGAR19C01200110	Conduits	SGWP	Garnet St	SOUTH COOGEE	12989.75
2020	MHEF24C46404630	Conduits	SGWP	Garrett St	MAROUBRA	9712.96
2020	MHEF24C46604640	Conduits	SGWP	Garrett St	MAROUBRA	17746.23
2020	MCPE08C18801870	Conduits	SGWP	GILDERTHORPE AVE	RANDWICK	19961.47
2020	ECOB16C35203510	Conduits	SGWP	Glebe St	RANDWICK	11279.85
2020	MELK12C07600720	Conduits	SGWP	Goodrich Ave	KINGSFORD	65347.56
2020	MELK12C07700760	Conduits	SGWP	Goodrich Ave	KINGSFORD	4759.11
2020	MCPC06C14101380	Conduits	SGWP	Gordon St	RANDWICK	38050.13
2020	MCPC06C14001390	Conduits	SGWP	Gordon St	RANDWICK	9170.96
2020	MCPC06C01000090	Conduits	SGWP	Govett St	RANDWICK	25241.77
2020	ECOB16C67406720	Conduits	SGWP	Gray St	RANDWICK	6647.79
2020	ECOB16C67206710	Conduits	SGWP	Gray St	RANDWICK	15348.42
2020	MHEF24C38303820	Conduits	SGWP	Green St	MAROUBRA	4358.37
2020	MPOW15C63906380	Conduits	SGWP	Greenstead Lane	RANDWICK	17410.46
2020	EGOR10C15101500	Conduits	SGWP	Greville St	CLOVELLY	6390.12
2020	ECLO09C30903080	Conduits	SGWP	Greville St	CLOVELLY	13983.55

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2020	ECLO09C31103090	Conduits	SGWP	Greville St	CLOVELLY	10685.03
2020	EMRB25C65806530	Conduits	SGWP	Haig St	MAROUBRA	9822.5
2020	EMRB25C66006580	Conduits	SGWP	Haig St	MAROUBRA	12086.43
2020	MHEF24C23202310	Conduits	SGWP	Hannan St	MAROUBRA	9637.56
2020	MHEF24C23702360	Conduits	SGWP	Hannan St	MAROUBRA	1416.74
2020	MHEF24C23602350	Conduits	SGWP	Hannan St	MAROUBRA	6788.19
2020	MPOW15C07000690	Conduits	SGWP	Harbourne Rd	KINGSFORD	9116.88
2020	ESC17C10000990	Conduits	SGWP	Havelock Ave	COOGEE	892
2020	ESC17C08200810	Conduits	SGWP	Havelock Ave	COOGEE	10176.74
2020	MPOW15C65706560	Conduits	SGWP	Hay St	RANDWICK	13983.55
2020	MPOW15C65606550	Conduits	SGWP	Hay St	RANDWICK	23651.99
2020	MPOW15C67506740	Conduits	SGWP	High St	RANDWICK	14762.21
2020	MPOW15C61706160	Conduits	SGWP	High St	RANDWICK	8988.07
2020	MPOW15C78707860	Conduits	SGWP	High St	RANDWICK	2657.7
2020	MPOW15C78707860	Conduits	SGWP	High St	RANDWICK	2672.22
2020	MPOW15C78807870	Conduits	SGWP	High St	RANDWICK	3050.78
2020	MPOW15C78507840	Conduits	SGWP	High St	RANDWICK	7406.7
2020	MPOW15C78507840	Conduits	SGWP	High St	RANDWICK	7392.18
2020	MPOW15C51905180	Conduits	SGWP	Howard St	RANDWICK	13565.91
2020	MPOW15C48404830	Conduits	SGWP	Howard St	RANDWICK	19282.81
2020	MELK12C05600550	Conduits	SGWP	Inglethorpe Ave	KENSINGTON	8129.07
2020	MMAR20C07600750	Conduits	SGWP	Irvine St	KINGSFORD	3352.59
2020	MPOW15C19301920	Conduits	SGWP	Jacques St	KINGSFORD	5221.63
2020	MPOW15C18301820	Conduits	SGWP	Jacques St	KINGSFORD	5950.14
2020	MPOW15C17501740	Conduits	SGWP	Jacques St	KINGSFORD	4393.69
2020	EBUN22C46654660	Conduits	SGWP	Jellicoe St	KINGSFORD	19715.3
2020	EBUN22C46704660	Conduits	SGWP	Jellicoe St	KINGSFORD	31483.66
2020	ECOB16C97809770	Conduits	SGWP	Judge St	RANDWICK	32486.08
2020	ECOB16C97509740	Conduits	SGWP	Judge St	RANDWICK	27082.33
2020	ECOB16C98409760	Conduits	SGWP	Judge St	RANDWICK	3103.76
2020	ECOB16C10000999	Conduits	SGWP	Judge St	RANDWICK	32074.93

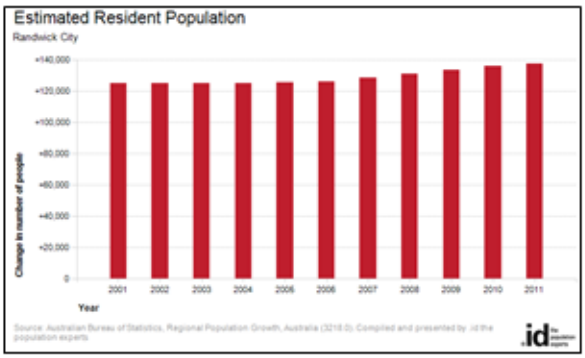
Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
					Totals	$901,661.88
2021	ECOB16C99909980	Conduits	SGWP	Judge St	RANDWICK	9365.62
2021	MPOW15C46204610	Conduits	SGWP	Kara Lane	RANDWICK	20039.84
2021	ECLO09C41304120	Conduits	SGWP	Keith St	CLOVELLY	11766.51
2021	ECLO09C40204010	Conduits	SGWP	Keith St	CLOVELLY	9262.32
2021	ECLO09C25302520	Conduits	SGWP	Keith St	CLOVELLY	14005.18
2021	ECLO09C25102490	Conduits	SGWP	Keith St	CLOVELLY	7652.99
2021	ECLO09C25002490	Conduits	SGWP	Keith St	CLOVELLY	7889.32
2021	ECLO09C25502530	Conduits	SGWP	Keith St	CLOVELLY	11647.55
2021	MPOW15C81308120	Conduits	SGWP	Kennedy St	KINGSFORD	24942.42
2021	MPOW15C80007990	Conduits	SGWP	Kennedy St	KINGSFORD	5845.39
2021	MPOW15C82008190	Conduits	SGWP	Kennedy St	KINGSFORD	22302.56
2021	MPOW15C81708160	Conduits	SGWP	Kennedy St	KINGSFORD	12873.23
2021	MPOW15C81008080	Conduits	SGWP	Kenneth Lane	KINGSFORD	3781.69
2021	MCPC06C09600950	Conduits	SGWP	King Lane	RANDWICK	4033.92
2021	MCPW05C07400730	Conduits	SGWP	King St	RANDWICK	32270
2021	MCPW05C06400630	Conduits	SGWP	King St	RANDWICK	88824.67
2021	MCPW05C06300620	Conduits	SGWP	King St	RANDWICK	102236.51
2021	ECLO09C31003090	Conduits	SGWP	Knox St	CLOVELLY	6955.8
2021	EGOR10C13401320	Conduits	SGWP	Knox St	CLOVELLY	7490.06
2021	ESC17C04500440	Conduits	SGWP	Kurrawa St	COOGEE	8868.14
2021	MELK12C04000410	Conduits	SGWP	KYNASTON AVENUE	RANDWICK	35310.36
2021	MELK12C04700460	Conduits	SGWP	KYNASTON AVENUE	RANDWICK	39757.71
2021	MPOW15C55405530	Conduits	SGWP	Lee St	RANDWICK	21216.26
2021	ECOB16C91109100	Conduits	SGWP	Llanfoyst St	RANDWICK	65451.23
2021	ECOB16C91209110	Conduits	SGWP	Llanfoyst St	RANDWICK	7992.14
2021	MPOW15C66506640	Conduits	SGWP	Magill St	RANDWICK	6756.76
2021	EGOR10C00800060	Conduits	SGWP	Major St	COOGEE	13279.25
2021	EGOR10C00700060	Conduits	SGWP	Major St	COOGEE	3904.15
2021	EGOR10C00600050	Conduits	SGWP	Major St	COOGEE	4832.14
2021	ELUR23C10000990	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	1829.26
2021	ELUR23C13701360	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	17236.33

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2021	ELUR23C14901450	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	18136.44
2021	ELUR23C13701360	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	17266.74
2021	ELUR23C13701360	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	17317.44
2021	ELUR23C12001190	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	2084.65
2021	ETRS18C11501140	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	10518.24
2021	ETRS18C11501140	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	11441.33
2021	ETRS18C11401090	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	2085.8
2021	ETRS18C11401090	Conduits	SGWP	Malabar Rd	SOUTH COOGEE	2312.61
2021	ETRS18C09100900	Conduits	SGWP	Marian St	SOUTH COOGEE	627.26
2021	EMPL26C03400270	Conduits	SGWP	Marine Parade	MAROUBRA	5818.37
2021	EMPL26C03500340	Conduits	SGWP	Marine Parade	MAROUBRA	13204.88
2021	EBON27C02500240	Conduits	SGWP	Marine Parade	MAROUBRA	14729.77
2021	MHEF24C19101900	Conduits	SGWP	Maroubra Rd	MAROUBRA	20092.21
2021	MHEF24C41104100	Conduits	SGWP	Maroubra Rd	MAROUBRA	15692.29
2021	MHEF24C41604110	Conduits	SGWP	Maroubra Rd	MAROUBRA	26539.54
2021	MHEF24C40204010	Conduits	SGWP	Maroubra Rd	MAROUBRA	34423.54
2021	MHEF24C39803970	Conduits	SGWP	Maroubra Rd	MAROUBRA	5791.74
2021	EMRB25C39703960	Conduits	SGWP	Maroubra Rd	MAROUBRA	4652.61
2021	MHEF24C74507440	Conduits	SGWP	Maroubra Rd	MAROUBRA	3330.96
2021	EBON27C03000290	Conduits	SGWP	Maroubra Road	MAROUBRA	6122.33
2021	MMAR20C02900280	Conduits	SGWP	Marville Ave	KINGSFORD	8824.43
2021	MMAR20C02800270	Conduits	SGWP	Marville Ave	KINGSFORD	4284.41
2021	EMRB25C15501540	Conduits	SGWP	Maxwell Ave	MAROUBRA	4966.02
2021	EMRB25C02800270	Conduits	SGWP	Mckeon St	MAROUBRA	3590.52
2021	MPOW15C38203810	Conduits	SGWP	McNair Ave	KINGSFORD	3724.52
2021	MPOW15C38003790	Conduits	SGWP	McNair Ave	KINGSFORD	5538.09
2021	MPOW15C13401330	Conduits	SGWP	Meeks St	KINGSFORD	1058.04
2021	MPOW15C13501340	Conduits	SGWP	Meeks St	KINGSFORD	2273.21
					Totals	$1,797,729.18
2022	MPOW15C79907980	Conduits	SGWP	Middle St	KINGSFORD	9805.17
2022	MPOW15C80107990	Conduits	SGWP	Middle St	KINGSFORD	9784.22

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2022	ECOB16C98109800	Conduits	SGWP	Milford St	RANDWICK	2775.13
2022	ECOB16C98009780	Conduits	SGWP	Milford St	RANDWICK	17928.81
2022	ECOB16C97909780	Conduits	SGWP	Milford St	RANDWICK	11743.15
2022	MMAT31C05200510	Conduits	SGWP	Military Rd	MATRAVILLE	1204.69
2022	EGOR10C01600150	Conduits	SGWP	Moore St	COOGEE	15082.96
2022	EGOR10C01600150	Conduits	SGWP	Moore St	COOGEE	15103.24
2022	ETRS18C14101400	Conduits	SGWP	Mount St	COOGEE	11139.25
2022	ETRS18C17001660	Conduits	SGWP	Mount St	COOGEE	9495.4
2022	ECOB16C44004390	Conduits	SGWP	Mount St	COOGEE	4080.01
2022	ECOB16C29902980	Conduits	SGWP	Mount St	COOGEE	1449.5
2022	ECOB16C29702950	Conduits	SGWP	Mount St	COOGEE	12231.55
2022	ECOB16C29502940	Conduits	SGWP	Mount St	COOGEE	22689.47
2022	MPOW15C51605140	Conduits	SGWP	Nelson St	RANDWICK	3676.94
2022	MPOW15C51305120	Conduits	SGWP	Nelson St	RANDWICK	2755.08
2022	ETRS18C00400030	Conduits	SGWP	Neptune St	COOGEE	27099.83
2022	ETRS18C05600510	Conduits	SGWP	Neptune St	COOGEE	8219.25
2022	ETRS18C03200300	Conduits	SGWP	Neptune St	COOGEE	8230.07
2022	ETRS18C03000290	Conduits	SGWP	Neptune St	COOGEE	7083.7
2022	EGOR10C16601650	Conduits	SGWP	Oak St	CLOVELLY	9050.92
2022	EGOR10C16801670	Conduits	SGWP	Oak St	CLOVELLY	12392.64
2022	ETRS18C16701660	Conduits	SGWP	Oberon St	COOGEE	9281.39
2022	ETRS18C16601650	Conduits	SGWP	Oberon St	COOGEE	8457.18
2022	ETRS18C01700160	Conduits	SGWP	Oberon St	COOGEE	8747.13
2022	EBUN22C53905370	Conduits	SGWP	Oberon St	RANDWICK	60941.45
2022	EBUN22C53805370	Conduits	SGWP	Oberon St	RANDWICK	18856.09
2022	ECLO09C14601440	Conduits	SGWP	Ocean St	CLOVELLY	2650.33
2022	ECLO09C14401420	Conduits	SGWP	Ocean St	CLOVELLY	7029.13
2022	ECLO09C14201400	Conduits	SGWP	Ocean St	CLOVELLY	10836.44
2022	ECLO09C13901370	Conduits	SGWP	Ocean St	CLOVELLY	95058.53
2022	ECLO09C14001390	Conduits	SGWP	Ocean St	CLOVELLY	3763.55
2022	ECLO09C13701350	Conduits	SGWP	Ocean St	CLOVELLY	2254.61
2022	ECLO09C13501300	Conduits	SGWP	Ocean St	CLOVELLY	77319.63

Planned Renewal Year	Asset ID	Sub Category	Asset Name	From	To	Renewal Cost
2022	MCPE08C26002550	Conduits	SGWP	PARK AV	RANDWICK	7897.66
2022	MCPE08C24502430	Conduits	SGWP	PARK AV	RANDWICK	4103.4
2022	MPOW15C34403430	Conduits	SGWP	Paton St	KINGSFORD	2796.99
2022	MHEF24C84408430	Conduits	SGWP	Percival St	MAROUBRA	5677.78
2022	MPOW15C54805230	Conduits	SGWP	Perouse Rd	RANDWICK	28323.99
2022	MPOW15C52805270	Conduits	SGWP	Perouse Rd	RANDWICK	14297.18
2022	MPOW15C52805250	Conduits	SGWP	Perouse Rd	RANDWICK	55242.05
2022	MPOW15C52805270	Conduits	SGWP	Perouse Rd	RANDWICK	14297.18
2022	MPOW15C52805270	Conduits	SGWP	Perouse Rd	RANDWICK	15367.85
2022	MPOW15C52805270	Conduits	SGWP	Perouse Rd	RANDWICK	15281.33
2022	MCPE08C21202110	Conduits	SGWP	PINE ST	RANDWICK	5515.55
2022	MCPW05C03400330	Conduits	SGWP	Prince St	RANDWICK	20050.66
2022	MCPW05C03600340	Conduits	SGWP	Prince St	RANDWICK	12837.18
2022	EGOR10C05800570	Conduits	SGWP	Quail St	COOGEE	4964
2022	ECOB16C67706760	Conduits	SGWP	Queen St	RANDWICK	10730.66
2022	ECOB16C78207810	Conduits	SGWP	Rae St	RANDWICK	3741.92
2022	EBUN22C77207740	Conduits	SGWP	Rainbow St	SOUTH COOGEE	1730.37
2022	EBUN22C77007720	Conduits	SGWP	Rainbow St	SOUTH COOGEE	2617.18
2022	ETRS18C13701350	Conduits	SGWP	Rainbow St	SOUTH COOGEE	4250.22
2022	ETRS18C13501340	Conduits	SGWP	Rainbow St	SOUTH COOGEE	6683.55
2022	ETRS18C13401330	Conduits	SGWP	Rainbow St	SOUTH COOGEE	17621.25
2022	MHEF24C54905480	Conduits	SGWP	Robey St	MAROUBRA	10098.48
2022	MHEF24C55005490	Conduits	SGWP	Robey St	MAROUBRA	12507.87
2022	MCPE08C16801670	Conduits	SGWP	ROSCREA AVE	RANDWICK	25349.91
2022	ECOB16C83008290	Conduits	SGWP	Searle Ave	RANDWICK	9040.45
2022	ELUR23C19701950	Conduits	SGWP	Seaside Pde	SOUTH COOGEE	10793.18
2022	ELUR23C19501920	Conduits	SGWP	Seaside Pde	SOUTH COOGEE	35042.8
2022	ECLO09C39103880	Conduits	SGWP	Seaview St	CLOVELLY	3190.37
2022	ECLO09C10401030	Conduits	SGWP	Shackel Ave	CLOVELLY	7981.33
2022	ECLO09C10201010	Conduits	SGWP	Shackel Ave	CLOVELLY	5751.11
					Totals	$861,706.56

Appendix B Projected Population Details



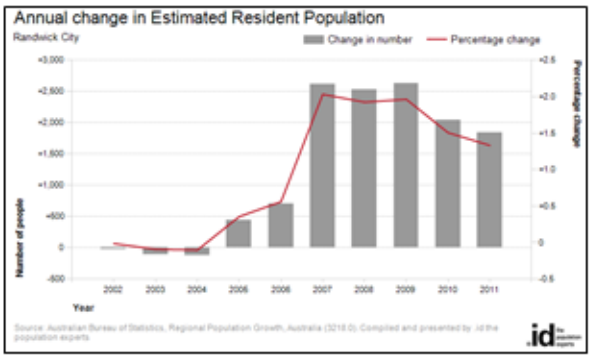
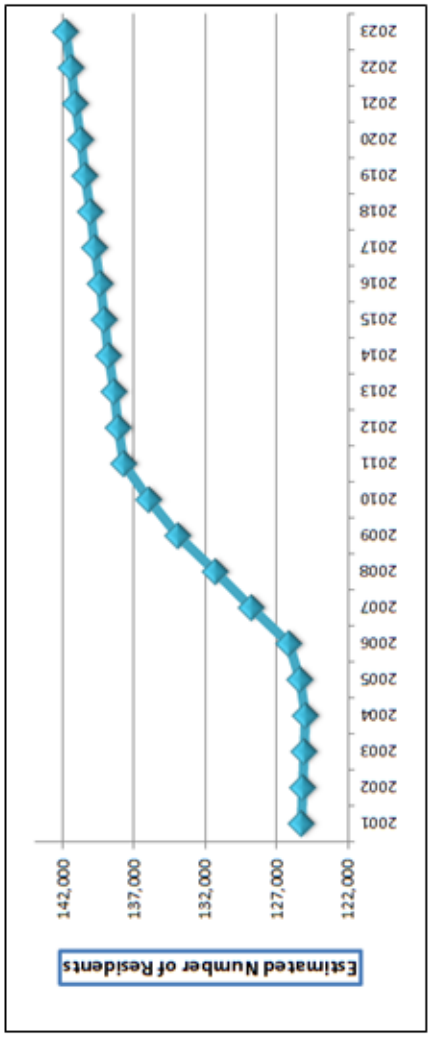


Table 173.1: The past and projected population of Randwick LGA, 1996-2036

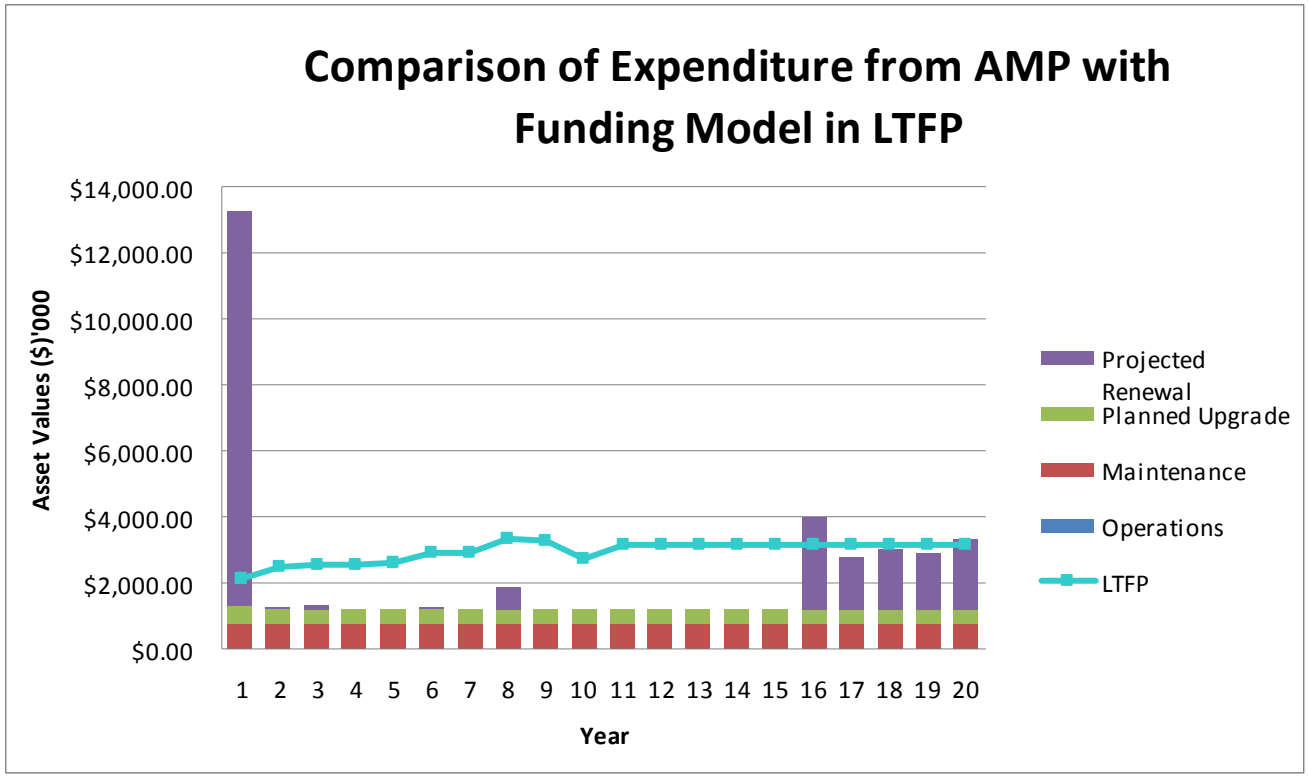
Source: past data - Australian Bureau of Statistics;
Projections – Department of Planning
New South Wales Statistical Local Area Population Projections, 2006-2036

Year (ending June 30)	Number	Change in number	Change in %	
2001	125,223			ERP FROM ABS
2002	125,204	-19	-0.02	
2003	125,088	-116	-0.09	
2004	124,959	-129	-0.10	
2005	125,404	+445	+0.36	
2006	126,108	+704	+0.56	
2007	128,723	+2,615	+2.07	
2008	131,249	+2,526	+1.96	
2009	133,877	+2,628	+2.00	
2010	135,923	+2,046	+1.53	
2011	137,757	+1,834	+1.35	
2012	138,088	+331	+0.24	ERP FORECAST
2013	138,419	+331	+0.24	
2014	138,751	+332	+0.24	
2015	139,085	+333	+0.24	
2016	139,418	+334	+0.24	
2017	139,753	+335	+0.24	
2018	140,089	+335	+0.24	
2019	140,425	+336	+0.24	
2020	140,762	+337	+0.24	
2021	141,100	+338	+0.24	
2022	141,439	+339	+0.24	
2023	141,778	+340	+0.24	



Appendix C Drainage Sustainability Ratios

Scenario 1	10 year ratio	
Projected 10 Yr	**Total ($) '000**	**Annual ($)'000**
Maintenance	$7,768.39	$776.84
Renewal	$12,838.30	$1,283.83
	$20,606.69	**$2,060.67**
Planned 10 Yr		
Maintenance	10 Year	$7,768.39
Renewal	10 Year	$15,065.95
		$22,834.34
Sustainability Ratio		
Planned	$22,834.34	
Projected	$20,606.69	
Ratio		1.11

Scenario 2	20 Year Ratio	
Projected 20 Yr	**Total ($) '000**	**Annual ($)'000**
Maintenance	$15,630.41	$781.52
Renewal	$22,687.87	$1,134.39
	$38,318.28	**$1,915.91**
Planned 20 Yr		
Maintenance	20 Year	$15,630.41
Renewal	20 Year	$34,122.25
		$49,752.66
Sustainability Ratio		
Planned	$49,752.66	
Projected	$38,318.28	
Ratio		1.30

Appendix D Service Cost Long Term Financial Plan