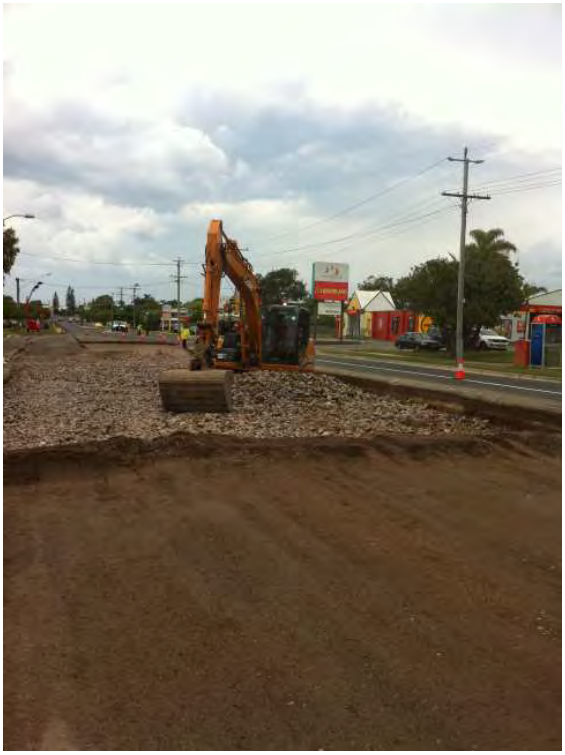
Sunshine Coast Council



Transportation

ASSET MANAGEMENT PLAN

Version 2

September 2012

Document Control					
Document ID: 59_07_070909_nams.plus_amp template v11					
Rev No	Date	Revision Details	Author	Reviewer	Approver
1	August 2010	Development of asset management plan	Jade Christensen	Craig Young	
2	August 2011	Revised Data	Jade Christensen	Craig Young	
2	September 2012	Revised and updated data	Jade Christensen	Craig Young	Chris Campbell

TABLE OF CONTENTS

ABBREVIATIONS i
GLOSSARY ii
1. EXECUTIVE SUMMARY 6
What Council Provides 6
What does it Cost? 6
2. INTRODUCTION 8
2.1 Background 8
2.2 Goals and Objectives of Asset Management 10
2.4 Core and Advanced Asset Management 13
3. LEVELS OF SERVICE 14
3.1 Customer Research and Expectations 14
3.2 Legislative Requirements 14
3.3 Current Levels of Service 14
3.4 Desired Levels of Service 15
4. FUTURE DEMAND 16
4.1 Demand Forecast 16
4.2 Changes in Technology 17
4.3 Demand Management Plan 17
4.4 New Assets from Growth 18
5. LIFECYCLE MANAGEMENT PLAN 19
5.1 Background Data 19
5.1.1 Physical parameters 19
5.1.2 Asset capacity and performance 24
5.1.3 Asset condition 25
5.1.4 Asset valuations 26
5.2 Risk Management Plan 26
5.3 Routine Maintenance Plan 27
5.3.1 Maintenance plan 27
5.3.2 Maintenance Work Standards and Specifications. 28
5.3.3 Summary of future maintenance expenditures 29
5.3.4 Deferred maintenance 30
5.4 Renewal/Replacement Plan 31
5.4.1 Renewal plan 31
5.4.2 Renewal standards 32
5.4.3 Summary of future renewal expenditure 32
5.5 Creation/Acquisition/Upgrade Plan 34
5.5.1 Selection Criteria 34
5.5.2 Standards and specifications 34
5.5.3 Summary of future upgrade/new assets expenditure 34
5.6 Disposal Plan 35
6. FINANCIAL SUMMARY 36
6.1 Financial Statements and Projections 36
6.1.1 Sustainability of service delivery 36
6.2 Funding Strategy 38
6.3 Valuation Forecasts 38
6.4 Key Assumptions made in Financial Forecasts 40
7. ASSET MANAGEMENT PRACTICES 42
7.1 Accounting/Financial Systems 42
7.2 Asset Management Systems 42
7.3 Information Flow Requirements and Processes 42
7.4 Standards and Guidelines 42
8. PLAN IMPROVEMENT AND MONITORING 43
8.1 Performance Measures 43
8.2 Improvement Plan 43
8.3 Monitoring and Review Procedures 43
REFERENCES 44
APPENDICES 45
Appendix A Infrastructure Renewal Priority Rating System 45
Appendix B New Asset Creation / Augmentation Priority Rating System 46

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
PMS	Pavement Management System
RV	Residual value
vph	Vehicles per hour
AAPT	Australian Asphalt Pavement Association
LRRS	Local Roads of Regional Significance

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 Expenditure 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.

PCI
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.

Sustainability
Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

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

The current Transportation network has a replacement value of $2.24b and a written down value of $1.833b as at 30 June 2012.

Council provides a transportation network in partnership with state and federal governments to enable the delivery of the required level of service to existing and future customers in the most cost effective way. This plan is intended to demonstrate how Council will achieve this outcome by applying the principles of responsible asst management.

The following asset groups are held and managed by Civil Works Services

Asset Group	Asset Type	Quantity	Current Replacement Cost
Roads	Sealed	2722 Km	$1,596,442,988
	Gravel	503 Km	
	Other	23 Km	
Roadside Infrastructure	Retaining Walls Signage Median Strips Guard Rails	Quantities to be further validated	$90,325,684
Bridges	Concrete	181	$237,091,218
	Steel	11	
	Timber	285	
Pathways	Concrete	1,084 km	$102,611,381
Car parks	Sealed / Unsealed	466,788 m²	$36,072,579
Kerb and Channel	Concrete	3190 km	$176,433,492
TOTAL			**$2,238,987,480**

What does it Cost?

There are two key indicators of cost to provide the Transportation network.

- 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.

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. Other asset classes will be added to this figure as data becomes available. The renewal and maintenance expenditure to renew only the physical road network as outlined in Chapter 5 is an average of $21.1 Million over the next 10 years based on condition modelling from the PMS.

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 Transportation 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 physical road network gap can be roughly calculated from the calculations in Chapter 5. The current renewal expenditure is approximately $20 Million per annum and calculations based on useful lives and modelling from the PMS indicate that it should be $21.1 Million. The life cycle sustainability index is 0.94.

Further validation of the Sustainability Index will be undertaken through improved data knowledge, systems and processes and reported back to Council in updated versions of this plan.

Medium

Large inroads have been made in the consolidation of the road pavement and seal assets data and condition modelling. However other transport related assets still require consolidation and cleansing.

It is expected that the Sunshine Coast Region will continue to grow at the current rates of approximately 3% per year, placing substantial demands on existing road infrastructure.

Next Steps

Major risks at this time lay with data integrity. Whilst the data is slowly becoming more reliable there are still asset classes with limited data. The major asset classes are being cleansed first in an effort to control the highest risk areas. This however leaves council exposed to the risks associated with the classes yet to be cleansed.

Roles and responsibilities post amalgamation need to be defined along with funding sources for each of the asset class groups. Clear and definitive roles will start to provide some direction on projected renewals for each asset class.

It is recommended that before council can obtain more advanced and useful information from this plan that the following actions need to be completed;

- Undertake an audit/ cleanse of available data;
- Undertake a collection program of missing data;
- Undertake condition inspections on remaining asset classes;
- Undertake geotechnical testing of council roads to determine remaining life of pavement;
- Develop the maintenance management system to provide data of maintenance activities by asset;
- Consolidate the asset register to an asset management system and long term financial plan;
- Develop a process to ensure the integrity of the asset register;
- Ensure greater integration between Priority Infrastructure Plans and Renewal Program.
- Ensure greater integration with the corporate spatial system (GIS).

2. INTRODUCTION

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate the funding required to provide the adopted levels of service.

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

- Transport Infrastructure Act 1994;
- Local Government Act 2009 (Part 3 Division 1 Roads);
- Cost Sharing Based on Responsibilities within State-controlled roads;
- Council's current Planning Scheme;
- Counter disaster and evacuation plans;
- TMR network routing contingencies;
- SCC bikeway routes and strategy; and
- Transportation State of the Asset Report.
- SCC 10 Year Capital Works Program
- SCC Financial Sustainability Plan 2010 -2020

This asset management plan covers the following infrastructure assets:

- All Council owned roads incorporating the sub-grade improvements, sub base, base and surface;
- All roadside infrastructure on State controlled roads as defined in the cost sharing arrangement;
- All Council owned vehicle and foot bridges;
- All Council owned roadside infrastructure incorporating such assets as bus shelters, signage, guardrails and retaining walls;
- All Council owned pathways;
- All Council owned car parks; and
- All Council owned kerb and channel.

Asset Group	Asset Type	Quantity	Current Replacement Cost
Roads	Sealed	2722 Km	$1,596,442,988
	Gravel	503 Km	
	Other	23 Km	
Roadside Infrastructure	Retaining Walls Signage Median Strips Guard Rails	Quantities to be further validated	$90,325,684
Bridges	Concrete	181	$237,091,218
	Steel	11	
	Timber	285	
Pathways	Concrete	1,084 km	$102,611,381
Car parks	Sealed / Unsealed	466,788 m²	$36,072,579
Kerb and Channel	Concrete	3190 km	$176,433,492
TOTAL			**$2,238,987,480**

Table 2.1. Assets covered by this Plan

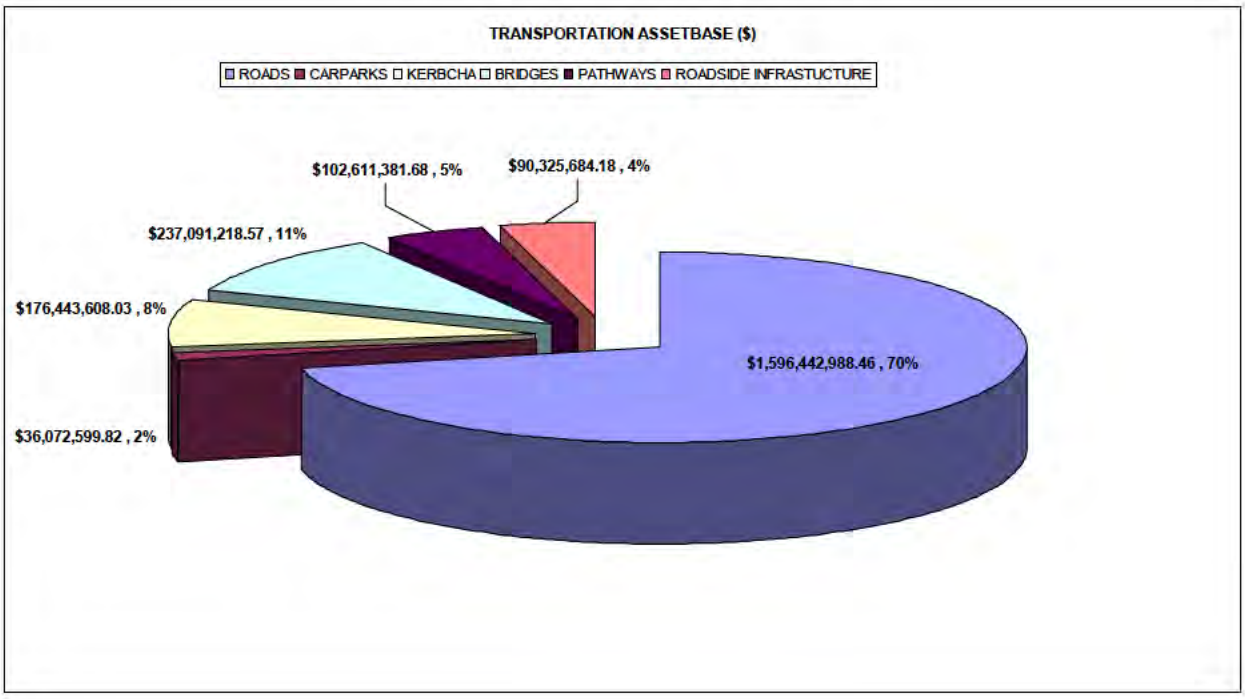


Fig 1. Asset Covered by this plan

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

Service Managers	Assist in determining the levels of service for the assets which serve other branches of Council e.g. carpark that services a library.
Transportation Planning staff	Assist in determining the long term transportation network.
Operation and Maintenance staff	Assist in determining the affordability and appropriateness of the desired levels of service.
Development Acquisitions Dept	Inspection and coordination of donated assets.
Transport and Engineering Services	Inspection and coordination of new contributed assets.

2.2 Goals and Objectives of Asset Management

The Council exists to provide services to its community. Some of these services are provided by infrastructure assets. Council has acquired infrastructure assets by 'purchase', by contract, construction by council staff 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, and
- 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:

To be Australia's most sustainable region – vibrant, green, and diverse.

[1] IIMM 2011 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 (theme)	Objective (emerging priorities)	How Goal and Objectives are addressed in IAMP
Robust Economy	Infrastructure for economic growth.	This IAMP will focus on the whole of life costs associated with the current and proposed transport infrastructure services.
Ecological Sustainability	Our natural environment preserved for the future.	This IAMP will explore opportunities for increased resource reuse associated with transport infrastructure construction and maintenance activities.
Innovation & Creativity	Council's working culture is dynamic, flexible and entrepreneurial.	As a result of this IAMP, transportation service provision will be challenged to ensure the current methodologies reflect the Council vision and rather than an adoption of "business as usual".
Health & Wellbeing	Safe and healthy communities.	By defining the levels of service for the various transportation services, Council will outline its commitment to providing opportunities and access to active lifestyle facilities.
Social Cohesion	Equity and opportunities for all.	By defining the levels of service for the various transportation services, Council will outline its commitment to providing access for all users.
Accessibility and connectedness	A transport system that allows ease of movement.	This IAMP will focus on the transport system and the assets that form this network. The strategies and outcomes of this IAMP will set the future direction and key deliverables for the transportation network.
Managing growth	Council's services and assets meet the needs to our growing community.	This IAMP will outline the desired levels of service of the transportation network. This will shape the delivery of the future transportation services.
Great governance	Effective business management.	This IAMP will outline how the transition will be made from the basic asset management model to the advance model.

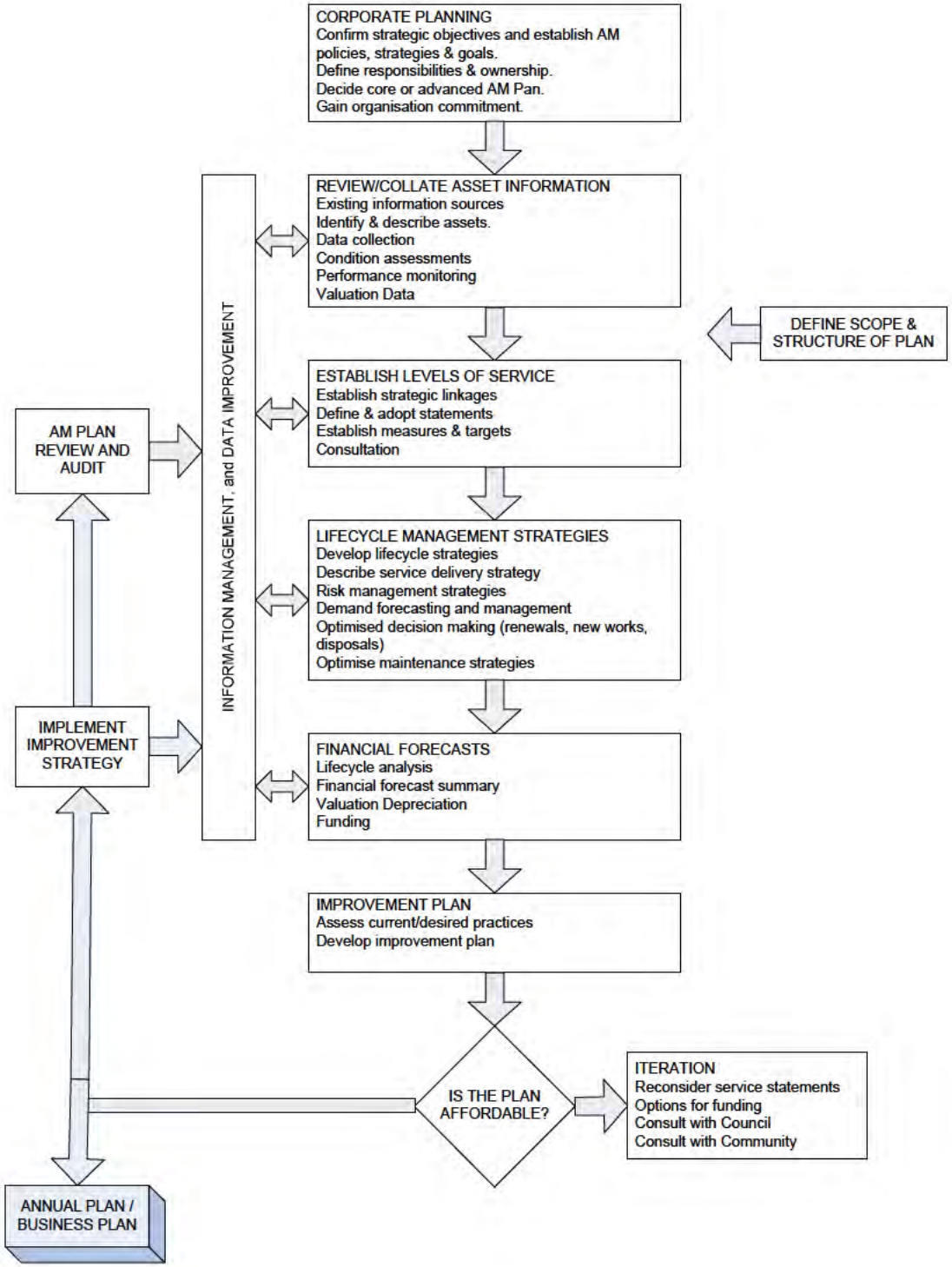
2.3 Plan Framework

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; and
- Asset management improvement plan.

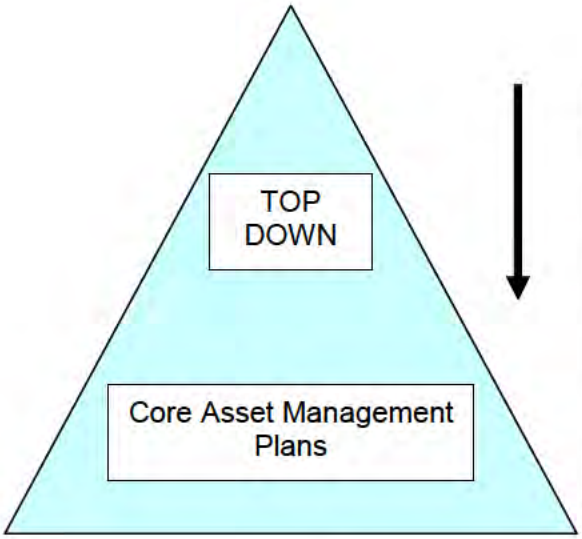
A road map for preparing an asset management plan is shown below.

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



2.4 Core and Advanced Asset Management

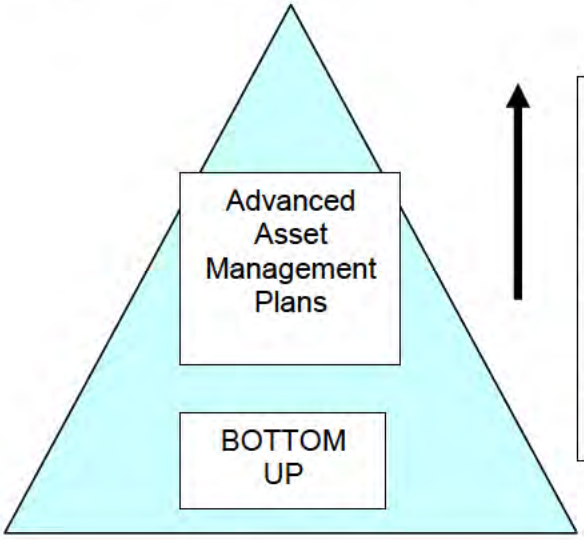
This asset management plan is prepared as a 'core' asset management plan in accordance with the International Infrastructure Management Manual (IIMM 2011). It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.



Systems / knowledge approach

- Based on what we know
- Current financial & physical data
- Uses current levels of service (not desired)
- Inconsistent data sets a major constraint
- Provides a base to move forward
- Provides a detailed improvement plan

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.



Asset / Component Data

- Finding out what we don't know
- Analysis to individual assets & services
- Support optimisation of activities & programs to meet desired levels of service
- Implemented improvement plan

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Council has not carried out any research on customer expectations. Customer expectations at this stage are gauged from the CRM system. This will be investigated for future updates of the asset management plan. It is anticipated that this will be developed in accordance with the NAMS publication "Developing Levels of Service & Performance Measures Guidelines".

Table 3.1. Community Satisfaction Survey Levels (to be populated in advanced plans)

Performance Measure	Satisfaction Level				
	Very Satisfied	Fairly Satisfied	Satisfied	Somewhat satisfied	Not satisfied
5.2.5. Community satisfaction with asset management	Community satisfaction has not been undertaken – this will undertaken with future revisions of this plan.				

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.
Transport Operations (Road Use Management) Act	Sets out the conditions of law associated with travel on the road network including offences and fines.
Transport Infrastructure Act 1994	Sets out to provide a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure.
Disability Discrimination Act	The Federal *Disability Discrimination Act 1992* (D.D.A.) provides protection for everyone in Australia against discrimination based on disability.
Native Vegetation Act	The Act sets down the rules and regulations that guide *what* clearing can be done, and *how* it must be done to meet the requirements of the law.

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

More targeted and measurable community focused levels of service are currently being developed. Currently council uses its CRM system to track customer complaints; conclusions are drawn from this as to how council is performing in the communities eyes. As an example it was noted that after amalgamation the number of complaints about unsealed roads in the former Maroochy Shire was much higher than other areas, as a result of this feedback the levels of service and service delivery methods were altered to be regionally consistent.

Current Service Levels – Sealed Road

Council are yet to adopt proposed levels of service for the full lifecycle of the road. Maintenance levels of service are defined for all road network asset classes. These levels define inspection frequencies, response times and intervention levels for Maintenance activities. Maintenance level of service document is included as Appendix A to this plan.

3.4 Desired Levels of Service

At present, indications of desired levels of service are obtained from various sources including 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	317,000 (2012)		508,000 (2031)		Projected population increases will increase pressure on existing assets and increase demand for provision of new assets in high growth areas.
Demographics	Highest growth patterns occurring in Central area of region		High growth expectation within Southern area of region		Requirement for new services to facilitate the growth area and to ensure facilities within neighbouring developments will cater for overflow.
	16% over 65 years old 1.5% over 85 years old 24% under 18 years old		21.7% over 65 years old 3.2% over 85 years old 21% under 18 years old		Requirement for increased access and equity focus during design of buildings and facilities. Provision of suitable facilities to meet the needs of the ageing population.
	Migration patterns have seen net gains of young families and retirees from interstate and a net loss of young people to other parts of Queensland		Current patterns predicted to continue		Review of current and future buildings and facilities to ensure the community's changing requirements are met. Established buildings and facilities may require refurbishment to align current use with desired use/s.
Number persons/household	23%	1 person	23%	1 person	Greater demand for individual activity based recreation opportunities Less demand for group activity demand Less demand for active sports field type parks
	40%	2 person	40%	2 person	
	15%	3 person	15%	3 person	
	15%	4 person	15%	4 person	
	6%	5 person	6%	5 person	

The steady growth in the population of the Sunshine Coast Region over the next 20 years will result in increased vehicle movements on the existing road network which will lead to shorter asset lives. Pavement conditions have begun to rapidly decline as a result of increased residential traffic and the increase in heavy vehicles to keep up the supply of commodities to cater for the additional growth. Along with the greater demand on existing infrastructure there will be a steady increase to donated assets. Operational maintenance costs will need to increase to cater for the additional assets being brought on by network growth.

Recent wet weather and deficient road pavements are accelerating the failure of road pavements. There will be substantial operational and capital costs involved in the next few years to attempt to intercept and repair the failing surfaces. Major developments such as Caloundra South will put further stress on the already failing network.

Caloundra South will accommodate a population of approximately 50,000 people in approximately 23,750 dwellings scheduled to be released between 2018 and 2046 by the Urban Land Development Authority (UDLA)

4.2 Changes in Technology

Technology changes are forecast to affect the delivery of services covered by this plan in the following areas. Historically changes in technology have had the effect of reducing whole-of-life costs. Changes in technology will be embraced where possible to reduce future whole-of-life costs.

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

Technology Change	Effect on Service Delivery
Demand to increase the capacity of trucks to decrease vehicle movements.	Higher demand on road pavements leading to much shorter expected asset lives.
Push to sustainable outcomes by use of recycled materials.	Increased expenditure and lack of detailed long term testing may result in decreased quality and pavement performance.
Mobile Applications	Less need for Depots and improvement to productivity.
Move towards sustainable transport methods	Increase in cycleway's, increase in levels of service for sweeping.

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.

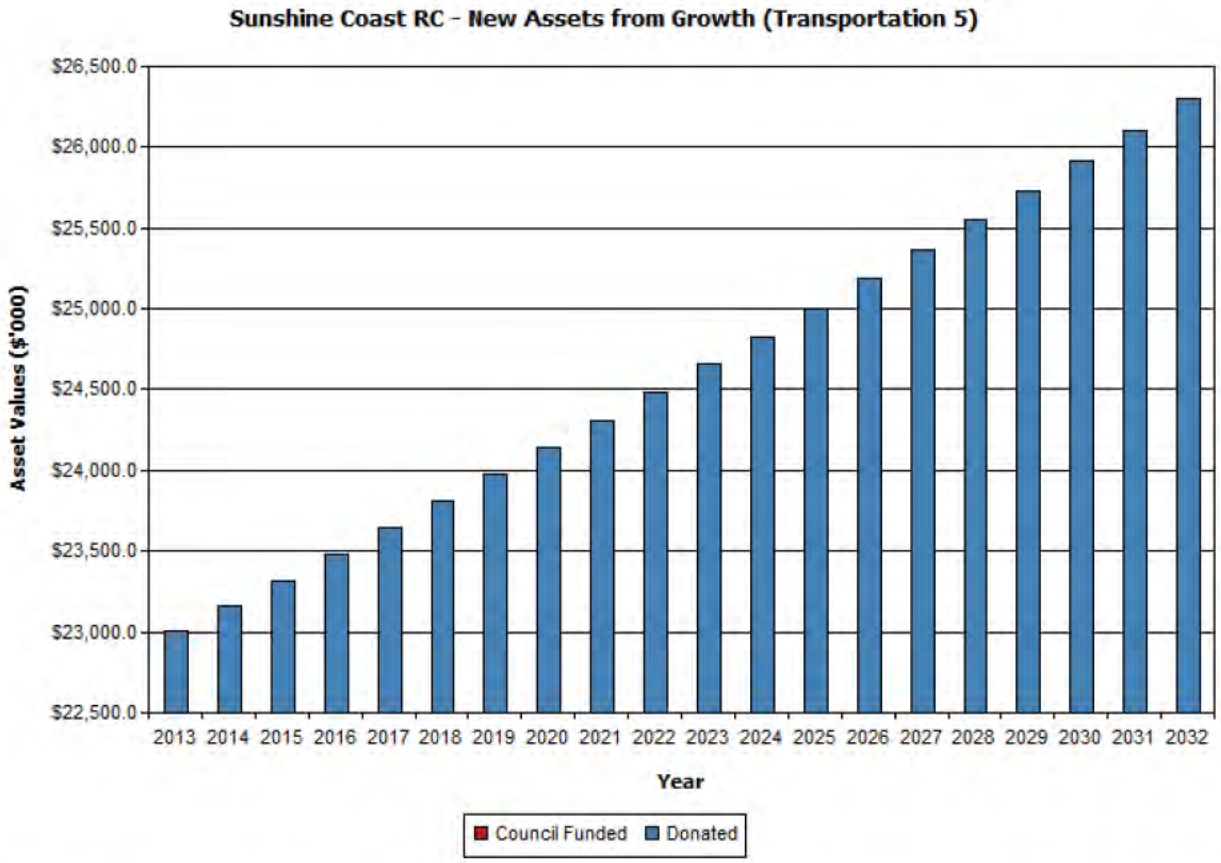
Table 4.3. Demand Management Plan Summary

Service Activity	Demand Management Plan
Reseal Program	Early intervention and resurfacing of roads is likely to reduce the future amount of rehabilitation needed. The effects of this are lower overall maintenance costs and improved traffic flow. Implementation of rejuvenation treatments to reduce the lifecycle costs of road surfaces.
Levels of Service	Implement descriptive levels of service and methods of assessments to ensure assets receive the correct treatment.

4.4 New Assets from Growth

The new assets required to meet growth will be acquired from land developments such as the growth of Caloundra South etc. It is currently estimated that Council acquires on average $23m p/a on new assets through development, with an anticipation that this will increase over the life of this plan. There is uncertainty regarding the type and standard of assets which may be provided through such developments such as Caloundra South. The Caloundra south development is scheduled to increase the population of the region buy approximately 50,000 by 2046 adding up to $250m to councils road network alone. This has the potential to greatly increase whole-of-life costs into the future depending on the type and number of assets which Council will acquire. The new asset values are summarised in Fig 1

Fig 1. New Assets from Growth



Acquiring new assets will commit council to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operating and maintenance costs.

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 minimising life cycle costs.

5.1 Background Data

Lifecycle asset management takes account of the whole-of-life implications for acquiring, operating, maintaining and disposing of park assets. The objectives of lifecycle planning are to:

- Establish the total cost of an asset over its useful life
- Establish a sound basis on which asset management decisions are made
- Plan for the impact of refurbishment, maintenance, and renewal; and
- Increase the service delivery capacity for the asset

The standard asset's lifecycle is depicted in the following diagram:

5.1.1 Physical parameters

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

Asset Group	Asset Type	Quantity	Current Replacement Cost
Roads	Sealed	2722 Km	$1,596,442,988
	Gravel	503 Km	
	Other	23 Km	
Roadside Infrastructure	Retaining Walls Signage Median Strips Guard Rails	Quantities to be further validated	$90,325,684
Bridges	Concrete	181	$237,091,218
	Steel	11	

Asset Group	Asset Type	Quantity	Current Replacement Cost
	Timber	285	
Pathways	Concrete	1,084 km	$102,611,381
Car parks	Sealed / Unsealed	466,788 m²	$36,072,579
Kerb and Channel	Concrete	3190 km	$176,433,492
TOTAL			**$2,238,987,480**

Table 5.1. Assets covered by this Plan

Urban Roads – Physical Parameters

Urban roads asphalt surface life is expected to be 20 years, however, generally replaced more regularly than this based on condition assessment. Based on a life of 20 years council has 11.6 million square meters of Asphalt Surface with a reseal cost of $17.82 m/2. This gives a reseal rate of $10.3 million dollars per year. Urban Pavements have a useful life of 75 years; council's urban roads need rehabilitation every 75 years at a cost of $70.90/ m2. This gives a rehab rate of $10.9 Million per year. There is approximately 3100 Km of kerb and channel associated with urban roads, with a useful life of 60 years and a replacement value of $57.24/m. This gives an annual renewal cost of $2.96 million per year. Therefore the basic structure of an urban street has a total annual renewal cost of $24.1 million dollars per year.

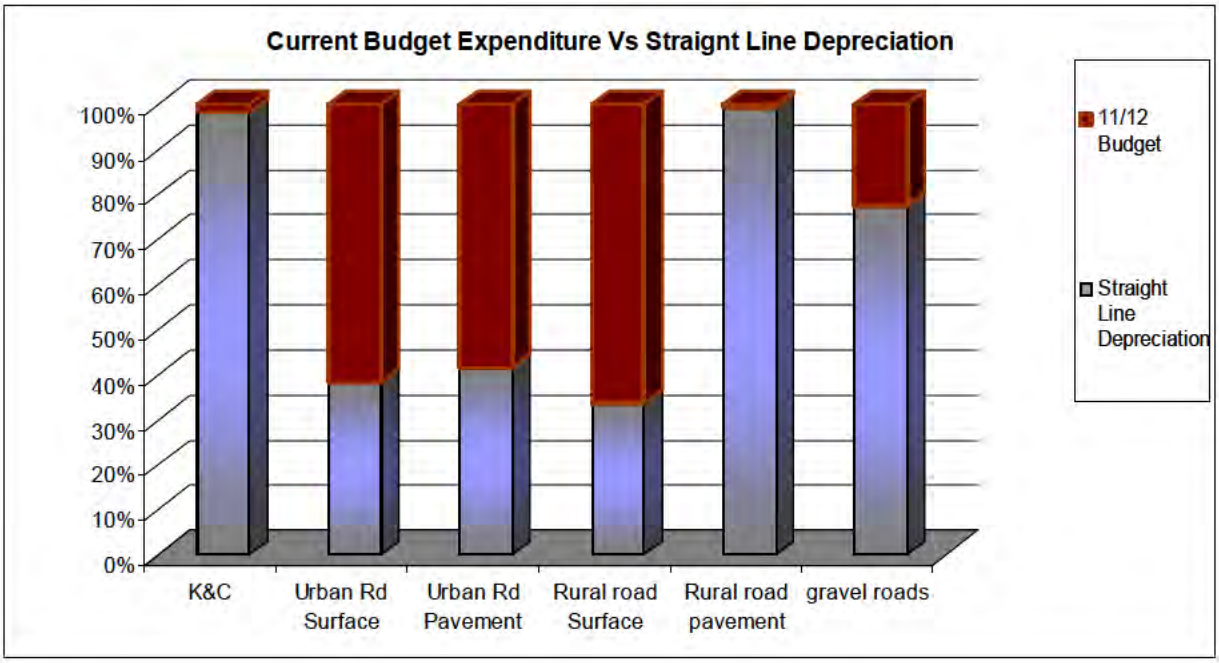
Rural Roads – Physical Parameters

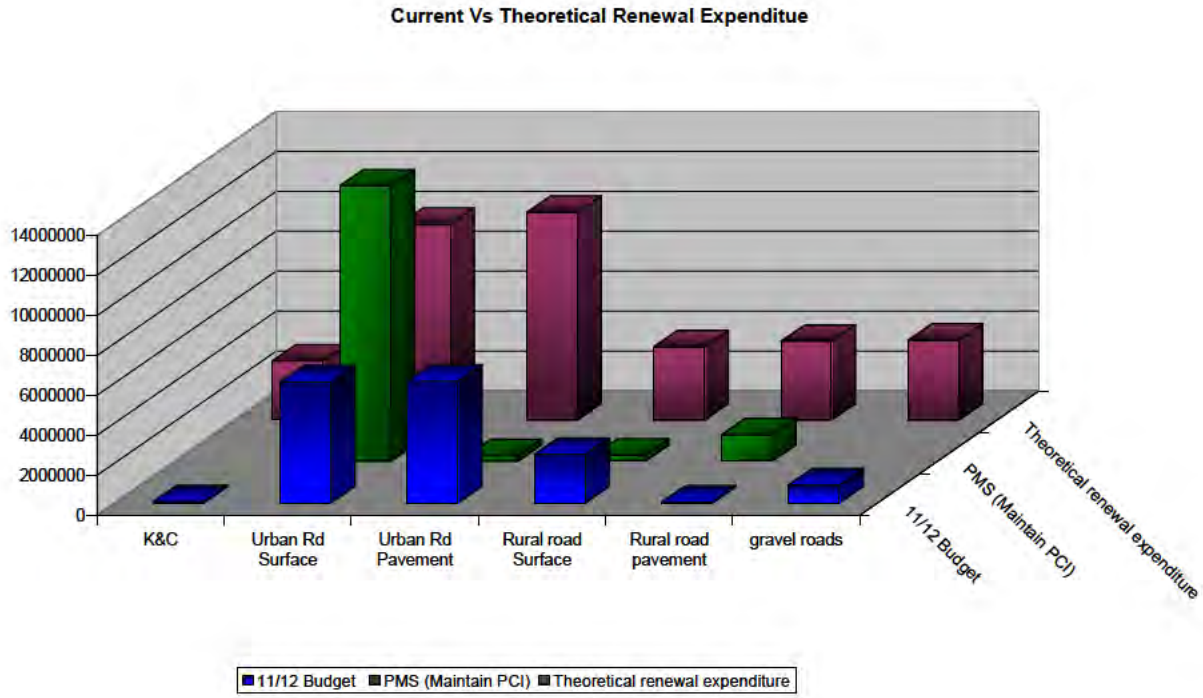
In addition Council owns approximately 9.2 Million square metres of rural roads which require resurfacing every 15 years at $7.48 / m2. This gives an annual reseal cost of $4.6 Million per year. Rural roads will need to be rehabilitated every 75 years at $40.24/m2 $4.9 Million per year. The 75 year pavement life is a corporately accepted value. The result annual target expenditure for rural roads should then be $9.5 Million per year and the reseal and rehab program, if it is to include kerb and channel, should be allocating $33.6 M per year to remain sustainable.

The asset lives used in these calculations are based on the corporately accepted values. These values are tending to be a lot longer than actual field performance which will only increase the expenditure. Based on the rates above the Rehab/ Reseal budget needs to be in the order of $27 Million dollars annually. The current budget is $20 million, the deferred works due to the funding gap continue to deteriorate to a point where they can no longer be resealed and will need to be rehabilitated at nearly four times the cost.

Gravel Roads – Physical Parameters

Gravel roads need to be re-sheeted approximately every 10 years council currently owns approximately $4.1 million m2 of gravel roads with a rehabilitation cost of $9.74/m2 which equates to an annual rehabilitation cost of $3.99 million dollars per year. The current gravel roads reheating budget is $0.9 Million dollars per year.


Current Budget Expenditure Vs Straignt Line Depreciation
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
K&C
Urban Rd Surface
Urban Rd Pavement
Rural road Surface
Rural road pavement
gravel roads
11/12 Budget
Straight Line Depreciation


Current Vs Theoretical Renewal Expenditue
14000000
12000000
10000000
8000000
6000000
4000000
2000000
0
K&C
Urban Rd Surface
Urban Rd Pavement
Rural road Surface
Rural road pavement
gravel roads
11/12 Budget
PMS (Maintain PCI)
Theoretical renewal expenditure
11/12 Budget
PMS (Maintain PCI)
Theoretical renewal expenditure

Bridges – Physical Parameters

Average cost of a timber bridge $263 717 and asset life of 50 years. Council owns 93 timber road bridges which equates to an annual renewal cost of $490 500

Average cost of a concrete bridge $926 680 and asset life of 80years. Council owns 181 concrete bridges which equates to an annual renewal cost of $1.865M.

Average cost of a steel bridge $447 806 and asset life of 50 years. Council owns 5 steel bridges which equates to an annual renewal cost of $ 45 000

Total bridge renewals $2.4 Million per year and the average spend over the next 10 years are $4 Million. This reflects the fact that many of Councils timber bridges have reached the end of their useful lives. Over the next 10 years council is budgeting to spend $40M on bridge renewal and at the end of this will have replaced most of its timber bridges.

Pathways – Physical Parameters

Council currently owns approximately 1084 KM of concrete pathway at a replacement cost of $76.85 /sqm assuming that pathways are 1.5m wide on average and have an asset life of 60 years. The annual renewal cost for concrete pathways equates to $2.075 Million dollars per year. Currently there only a nominal dedicated renewal budget for pathways. The current standard with regard to width of pathways is changing. The renewed focus on Disability access and shared path and bicycle ways is resulting in current designs of 1.8m-2.m wide paths. The added replacement cost of these pathways is likely to exasperate the funding gap over the coming years.

The asset registers for transport infrastructure are currently held in various locations each containing significant holes in the information contained. Asset Registers are currently held by the GIS Unit, the Finance Unit and Civil Works Services. None of these models appear to have the capability of a fully functioning asset register. The intention is to consolidate these registers into a central location within the corporate asset management system once it is fully functioning.

The age profile of council's assets, based on Council's Financial Asset Register is shown below:

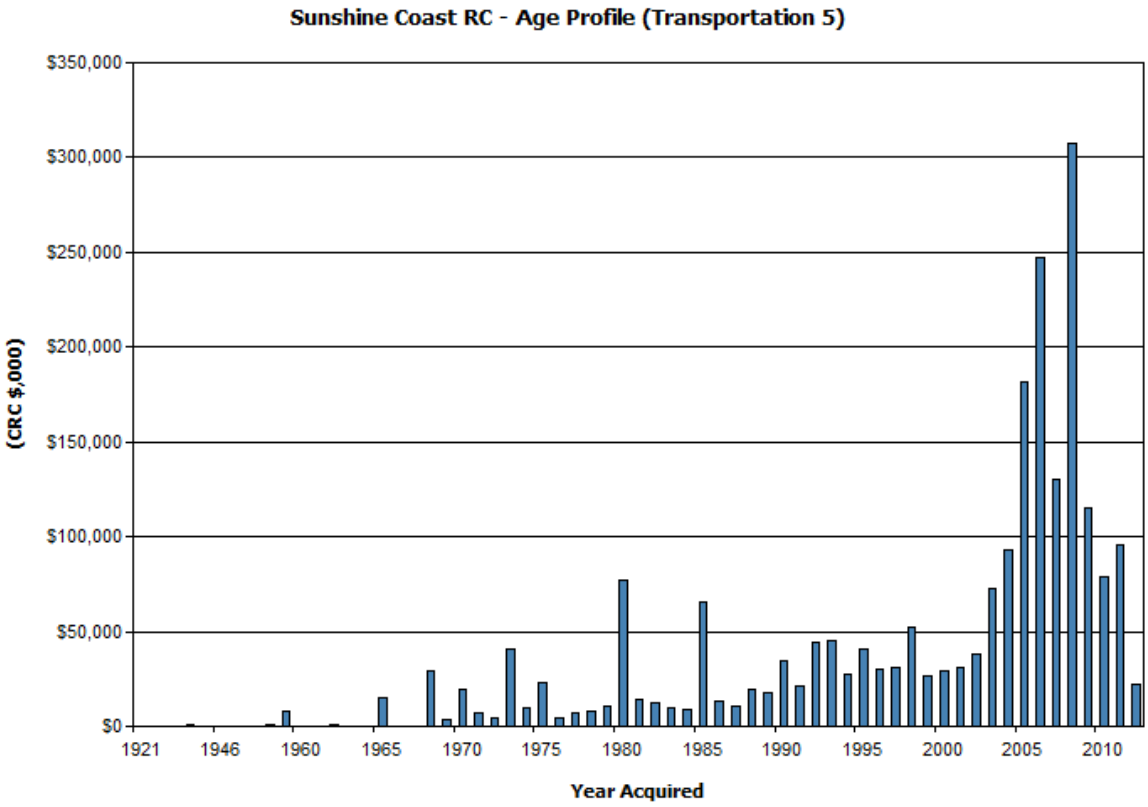


Fig 2. Asset Age Profile (FAIMS)

The data represented in the graph above has been extracted from the corporate asset system (FAIMS). It is clear that this data does not reflect the actual acquisitions and is more likely to reflect when the data became available. Acquisition dates of assets and financial asset write on processes need to be reviewed as part of the improvement plan, especially for 2005, 2006 and 2008.

The graph below is an extract from the Pavement Management System which gives a more realistic profile. It however, only contains information on the sealed road network, surfaces and pavements.

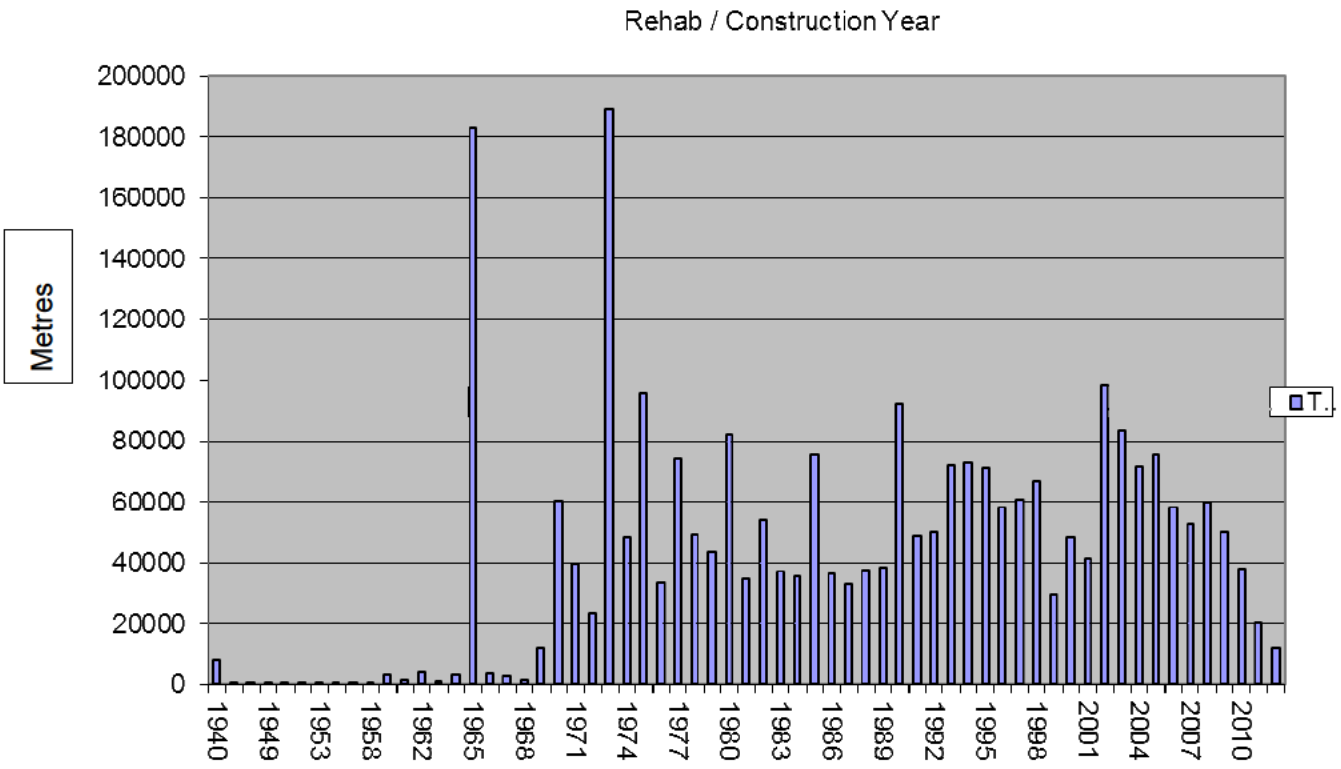


Fig 2A: Asset Age Profile Sealed Roads (PMS)

5.1.2 Asset capacity and performance

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

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

Table 5.1.2. Known Service Performance Deficiencies

Location	Service Deficiency
Reseal Program	This program is under funded causing resurfacing to be deferred. Poor surfacing results in water penetration into the pavement and higher rehabilitation costs. The introduction of rejuvenation program and reallocating funds from rehabilitation to reseals has minimised the risk of more of the network deteriorating prematurely, however, the backlog of rehabilitation works will take longer to address and in the short-medium term increase maintenance costs.
Insufficient surface thickness	Asphalt has previously been laid at varying depths in some cases too thin resulting in very short asset lives.
As Constructed	Lack of a centralised asset register and formalised As Constructed processes for internal works mean that as constructed information is likely to be lost. There is also a break in the chain of information from the ADAC process and asset write on to subsidiary systems.
Weak Pavements	A large part of the SCC road network is built on weak subgrade and shallow pavements. Increasing traffic is resulting in premature failures.
K&C and Path Renewals	Under-funded in capital expenditure and is often funded within the reseal works with operational funds.

5.1.3 Asset condition

The condition profile extracted from the council's pavement management system of Council's Sealed Road assets is shown below.

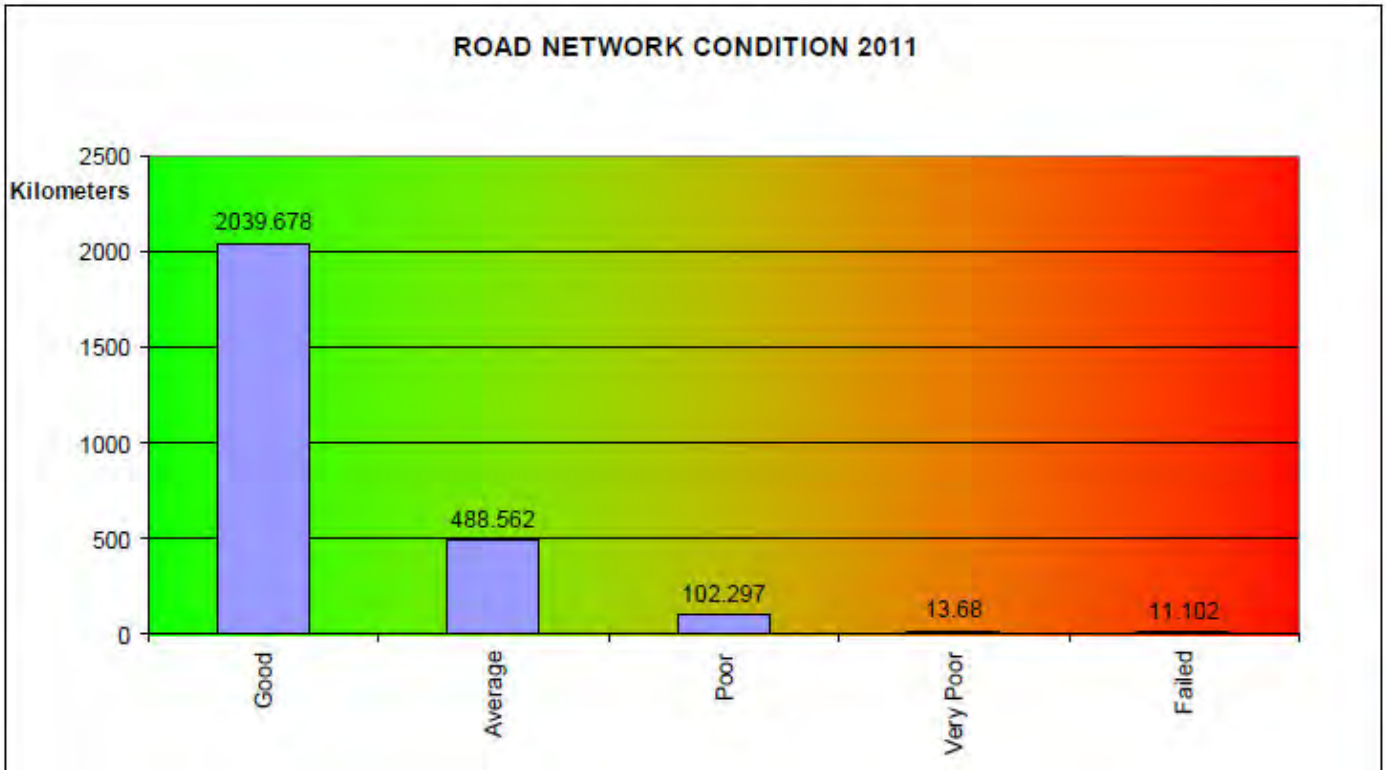


Fig 3. Asset Condition Profile

Condition is measured using a 1 – 5 rating system.[2]

Rating	Description of Condition
1	Good condition: Only planned maintenance required.
2	Average: Minor maintenance required plus planned maintenance.
3	Poor: Significant maintenance required.
4	Very Poor: Significant renewal/upgrade required.
5	Poor/ Failed: Unserviceable.

[2] IIMM 2011, Appendix B, p B:1-3 ('cyclic' modified to 'planned')

5.1.4 Asset valuations

The value of assets as at 30 June 2012 covered by this asset management plan is summarised below. Assets were last revalued on 30 June 2012. Assets are valued at Greenfield rates.

Current Replacement Cost	$2,238,987,480.74
Depreciable Amount	$ 1,499,869,271
Depreciated Replacement Cost	$ 1,776,276,086
Annual Depreciation Expense	$ 30,248,563.54

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

Asset Consumption	30.85%
Asset renewal	1.6%
Annual Upgrade/Expansion	

The figures used in the calculation above are calculated from the available data in the FAIMS and RAV systems. The data in the both systems is used with some scepticism of its integrity.

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 likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

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

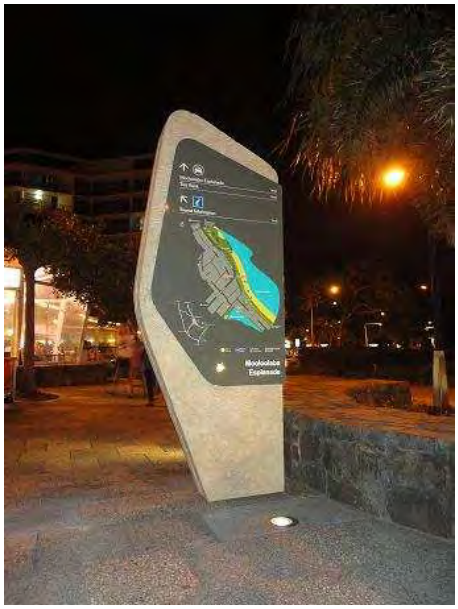


Table 5.2. Critical Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan
Sealed Roads	Deferred reseal will result in roads deteriorating to a point where a reseal will no longer be sufficient and a more expensive rehabilitation will be required.	VH	Shift the focus of the reseal/ rehab program to concentrate on reseals and reduce the amount of rehabilitation done. Look at more economical treatments gain shorter term benefits at low cost extending the life of reseals. Note: This will have an impact on the operational budget as roads are kept in better condition reducing the operational burden. Review the need for 'fit for purpose' pavement designs and assess the whole of life costs associated with these lesser designs.
Public Safety	Roads are allowed to deteriorate to a point where they become an issue to public safety, public liability claims, deaths and serious injury.	VH	Reduce the lifecycle funding gap on roads to improve the standard overall or reduce the aesthetic and functional levels of service to fund safety improvements.
Asset Data	Gaps in knowledge and records caused by amalgamation and decentralised records have lead to the loss of information critical to strategic planning for the rehabilitation of transport assets	H	Renewed focus on the asset data base and rebuilding of the knowledge and information that is missing.
Road pavements	Failure to renew kerb and channel will lead to water penetration from the channel into the road base saturating the edged leading to premature failure.	H	Develop a renewal and inspection plan for Kerb and channel.
Pathways	Failure to renew pathways will lead to trip increasing trip and fall situations and risk to public safety. Especially considering that the sunshine coast has a higher than average aged population.	H	Develop a renewal plan and improved asset data for Pathways.

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, programmed and cyclic maintenance work activities.

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

Programmed 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.

Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, termite treatment, 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	Total
20010/2011	$-	$-	$-	$27,216,411
20011/2012	$-	$-	$-	$30,615,451

Data is currently being developed for the maintenance cost by category. The introduction of the Maximo Maintenance Management System will assist in tracking these costs in the future. However planned maintenance work makes up a large percentage of the work done. Activities such as pothole repairs and patching will continue to be predominantly reactive.

Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience, judgement and the specifications contained in 5.3.2.

5.3.2 Maintenance Work Standards and Specifications.

- Current works Instructions
- Service Level Agreement (draft)
- Main Roads Technical Specifications
- AusSpec specifications:
- Institute of Public Works Engineers Australia Queensland Standard Engineering Drawings
- Austroads technical publications
- AAPA technical notes and publications
- Manual of Uniform Traffic Control Devices
- Mainroads Pavement Rehabilitation Manual

5.3.3 Summary of future maintenance expenditures

Future maintenance expenditure is forecast to increase as a result of the strategy of deferred capital renewal expenditure and as such is dependent on the capital works program. For example if reseal rehabilitation is left at current spending levels the sealed road maintenance budget would need to increase by $2.2M over 10 years to achieve the same level of service. Assets are likely to degrade past the optimum replacement age and operational and rehabilitation costs will increase. The result is a loss in level of service in some areas as critical levels of service are maintained public safety becomes an issue. As shown in Fig 4. Note that all costs are shown in current 2012 dollar values.

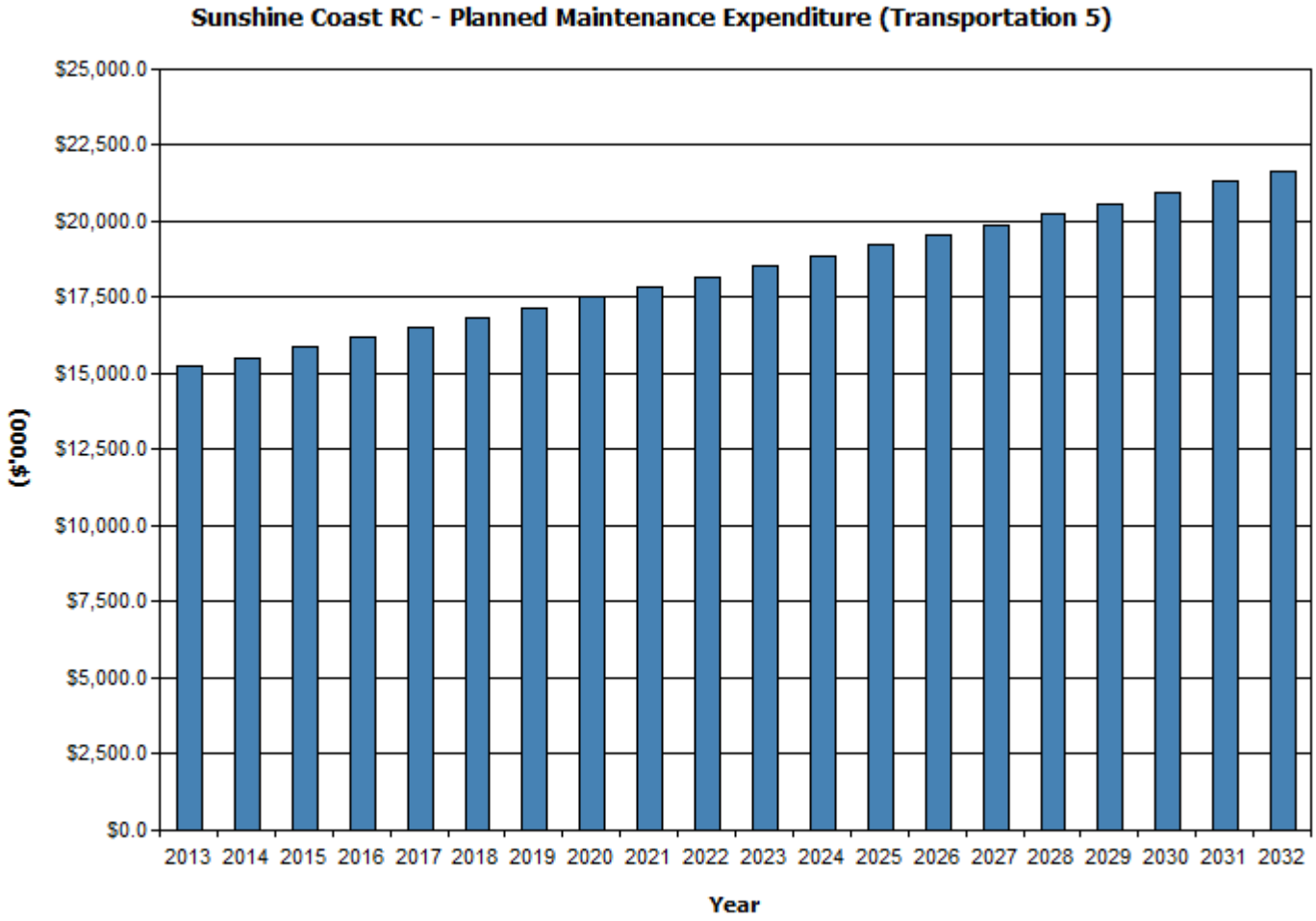


Fig 4. Planned Maintenance Expenditure

5.3.4 Deferred maintenance

Recent inspections and modelling are indicating that there is approximately $48-$54 million in unfunded renewals. This includes both roads that have gone past the point of reseal and those that are at that point currently. As the gap increase the operational costs to maintain the roads in a safe condition and cost to undertake the renewals will increase substantially. Data integrity issues with the FAIMS system are highlighted by the comparison of the following graphs.

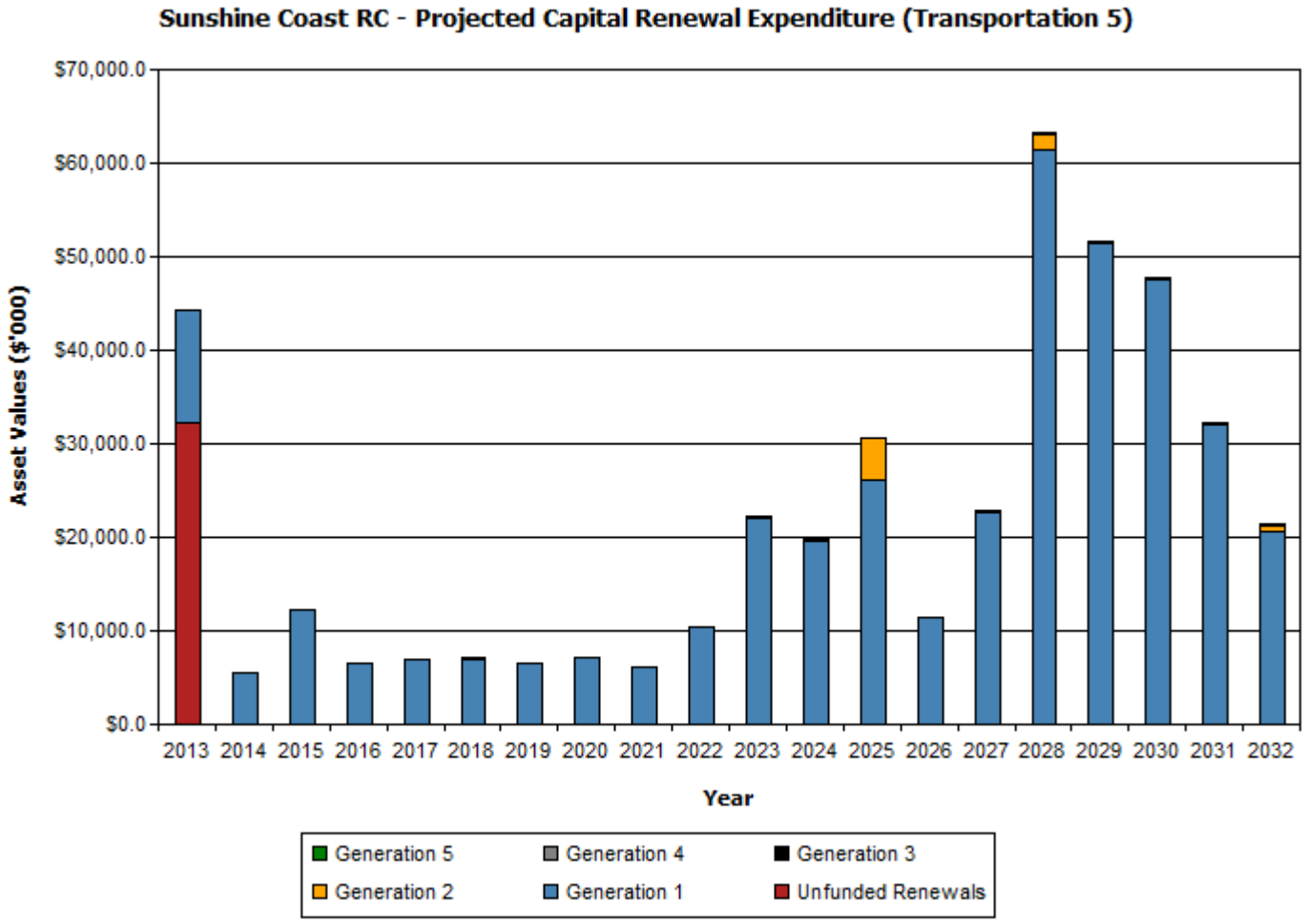


Fig 5. Projected Capital Renewal Expenditure (FAIMS)

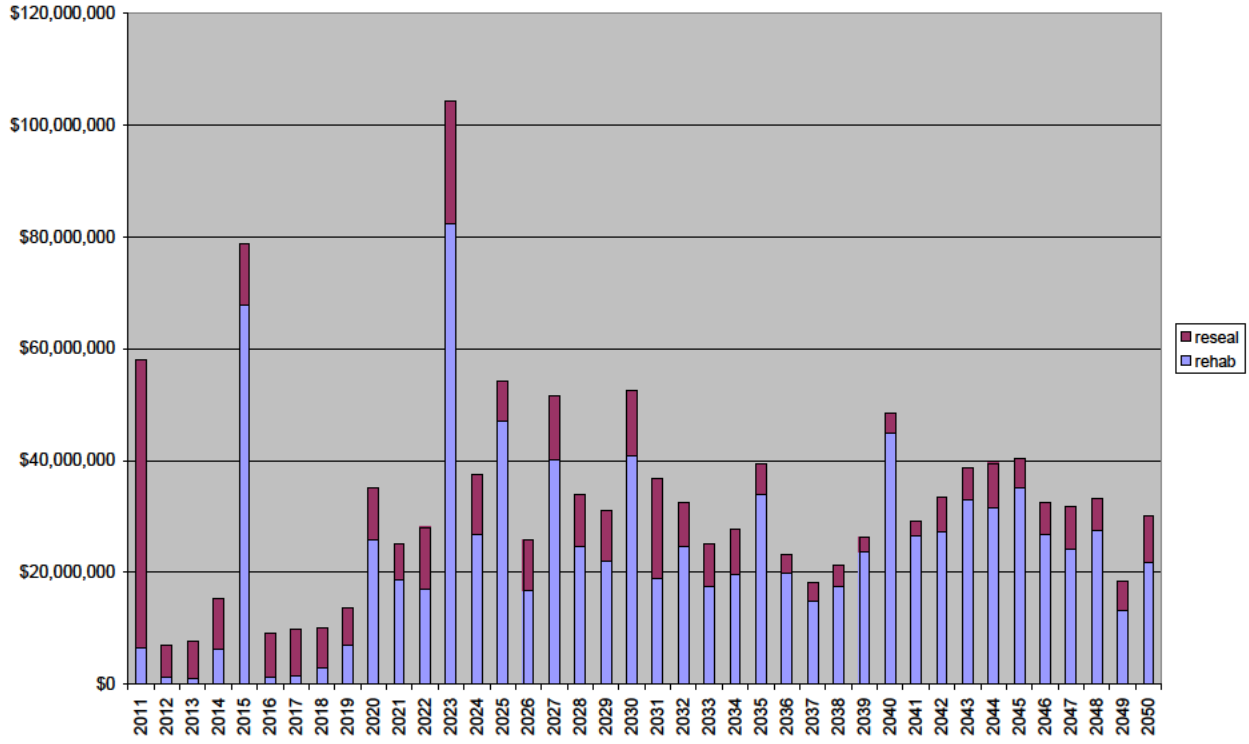


Fig 5A. Projected Road Renewals (age based) PMS Data

5.4 Renewal/Replacement Plan

Renewals are currently driven by the use of visual assessments and the computerised pavement management system. This method will continually be improved as corporate asset data and condition software become available.

5.4.1 Renewal plan

Council runs a computerised pavement management system that models road pavement deterioration for sealed roads. The system then generates an optimised works program based on the most economical intervention levels. Road renewals are generated in this way and confirmed by physical inspection. Council are currently considering the way forward with regard to road renewals. (State of The Asset Report) Appendix F. A bridge renewal plan has been adopted by council which details the replacement of all timber bridge stock over a 10 year period. Appendix G. All other assets are renewed on an adhoc basis as funding becomes available.

Council uses a priority rating system as outlined in Appendix D.

Data based on the useful lives indicates that there is a substantial risk coming down the line as pavements constructed in the 1970's comes up for renewal. Some of these pavements are failing prematurely due to thin pavements under heavy traffic loads, especially on the higher order roads.

Renewals 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. The opportunity to perform upgrades to assets is generally considered at the time of renewal. This includes shoulder widening, bikeways, kerb and channel, etc.

Examples of low cost renewal include the reuse of existing pavement material to eliminate the cost of the sub base and bitumen rejuvenation treatments on sealed local streets.

5.4.2 Renewal standards

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

- AUSTROADS - Guide to Pavement Technology;
- AUSTROADS – Spray seal design handbook.
- DTMR Pavement Rehabilitation Manual.

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

- Current works Instructions;
- Service Level Agreement
- Main Roads Technical Specifications
- AusSpec specifications
- Main Roads Pavement Rehabilitation Manual
- (IPWEAQ Standard Engineering Drawings)
- Manual of Uniform Traffic Control Devices
- AS2150-2004 Hot mix asphalt - A guide to good practice

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 B.

The graphs in figure 5 and 5A show the forecast for resealing and rehabilitation of sealed council roads. The information is derived from the SMEC PMS system. Figure 5 shows the adopted level of spending over the next 10 years. At this level of spending the road network can be expected to deteriorate and operational and maintenance costs increase. The second scenario shows the funding required to maintain the road network in the current condition. The projected average cost to maintain the network is $20.1M. These figures do not allow for growth or inflation and are based only upon road surface and pavement.

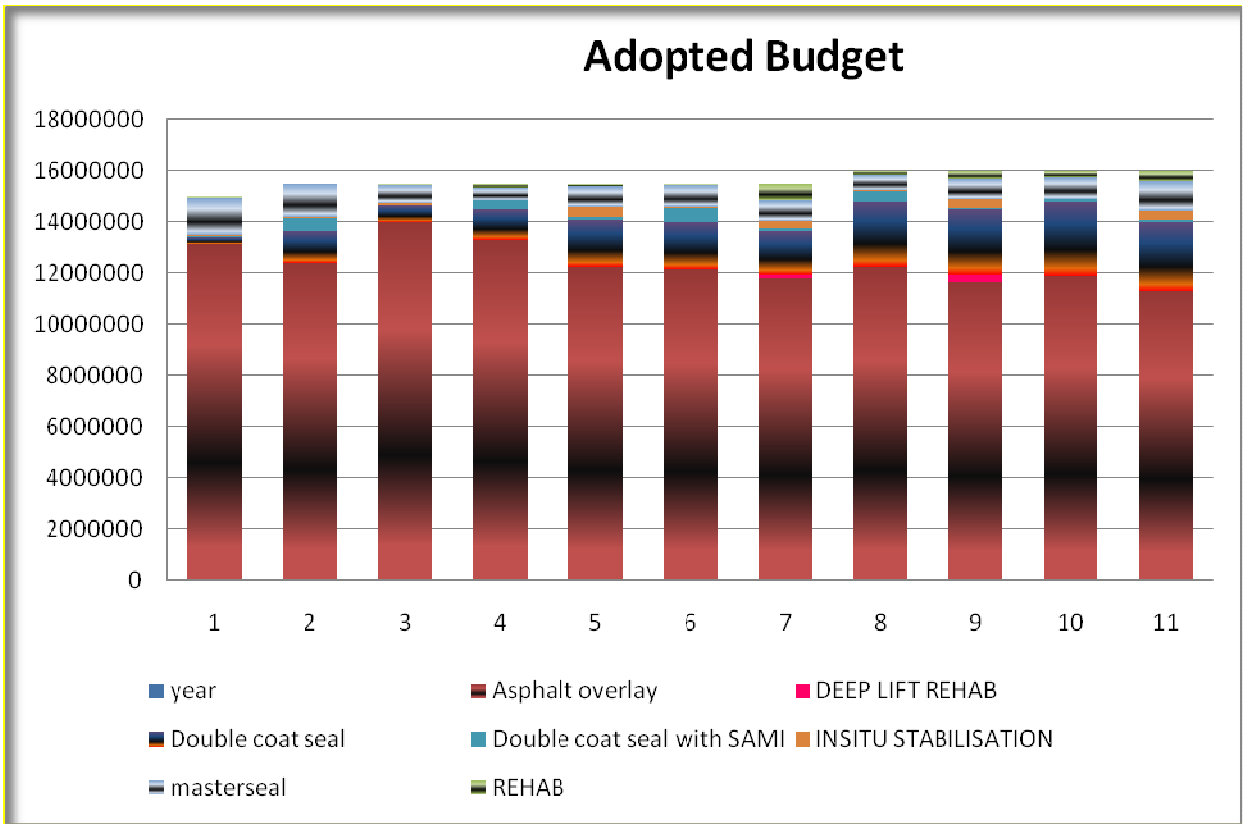


Fig 5. Adopted Capital Renewal Expenditure

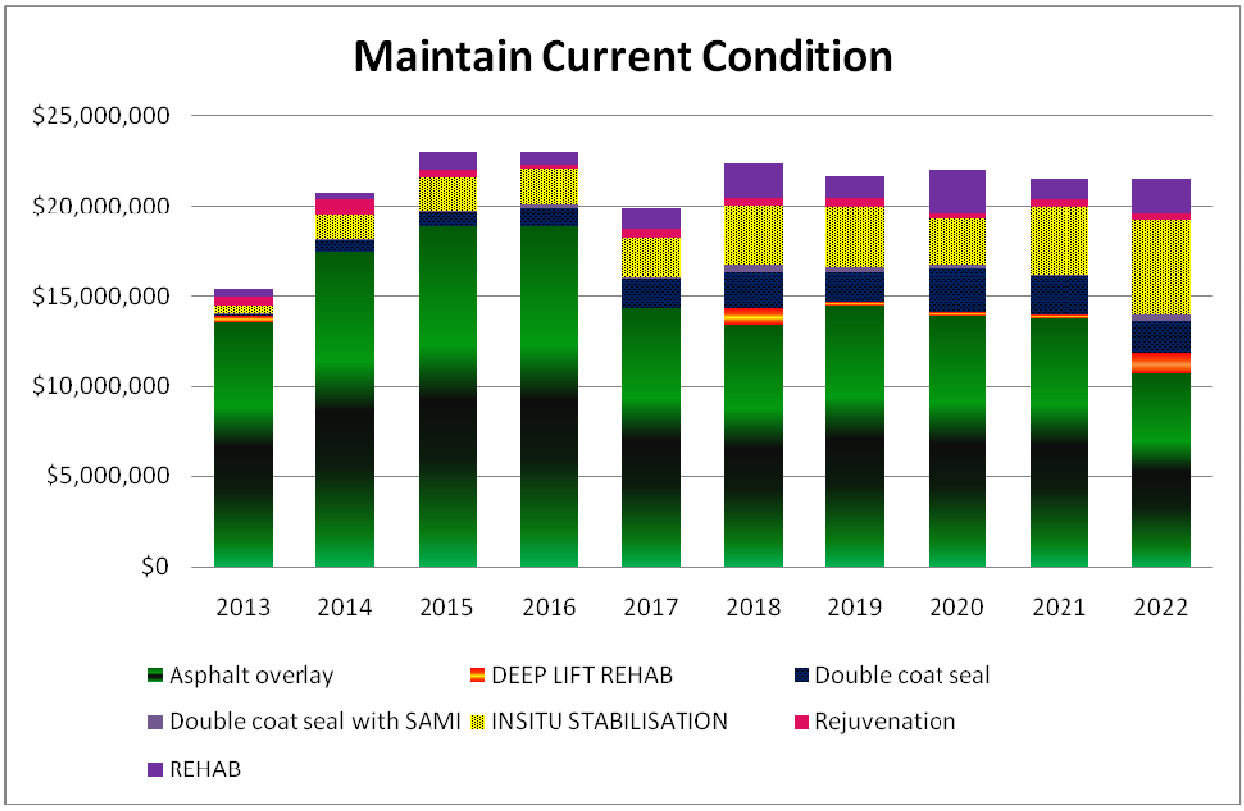


Fig 5A.Required Capital Renewal Expenditure to Maintain Current Condition (Condition Based (PMS data))

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, increase in level of service social or environmental needs. Assets may also be acquired at no initial cost to the Council from land development. These assets from growth are considered in Section 4.4.

New works are outlined in the SCC 10yr Capital Works Program (Appendix B), and are linked to the Priority Infrastructure Plans and other council strategies.

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 are detailed in Appendix E.

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.

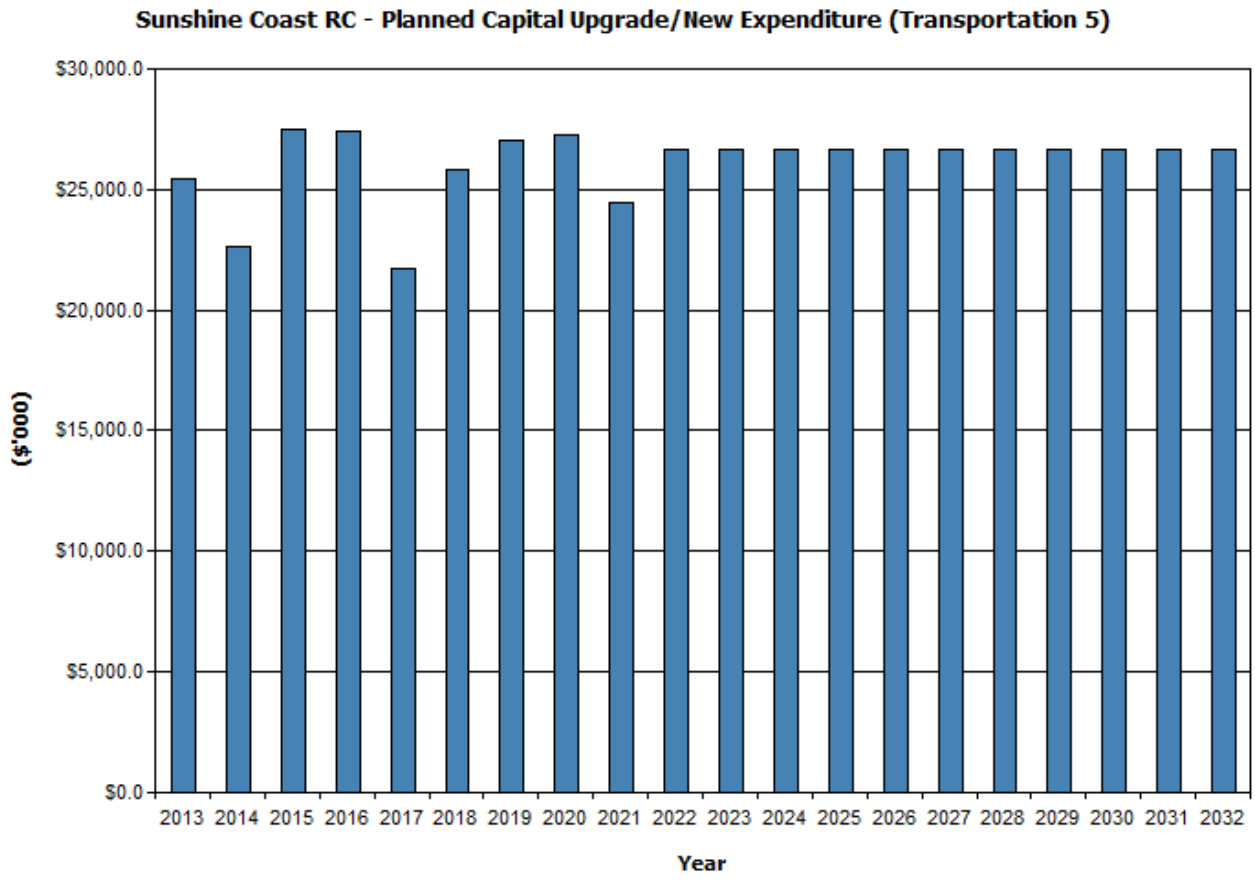


Fig 6. Planned Capital Upgrade/New Asset Expenditure

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.

At this stage there are no assets scheduled for disposal. Council maintains all transportation assets in service and conducts renewals and preventative maintenance treatments to keep them in service.

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 planned operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets).

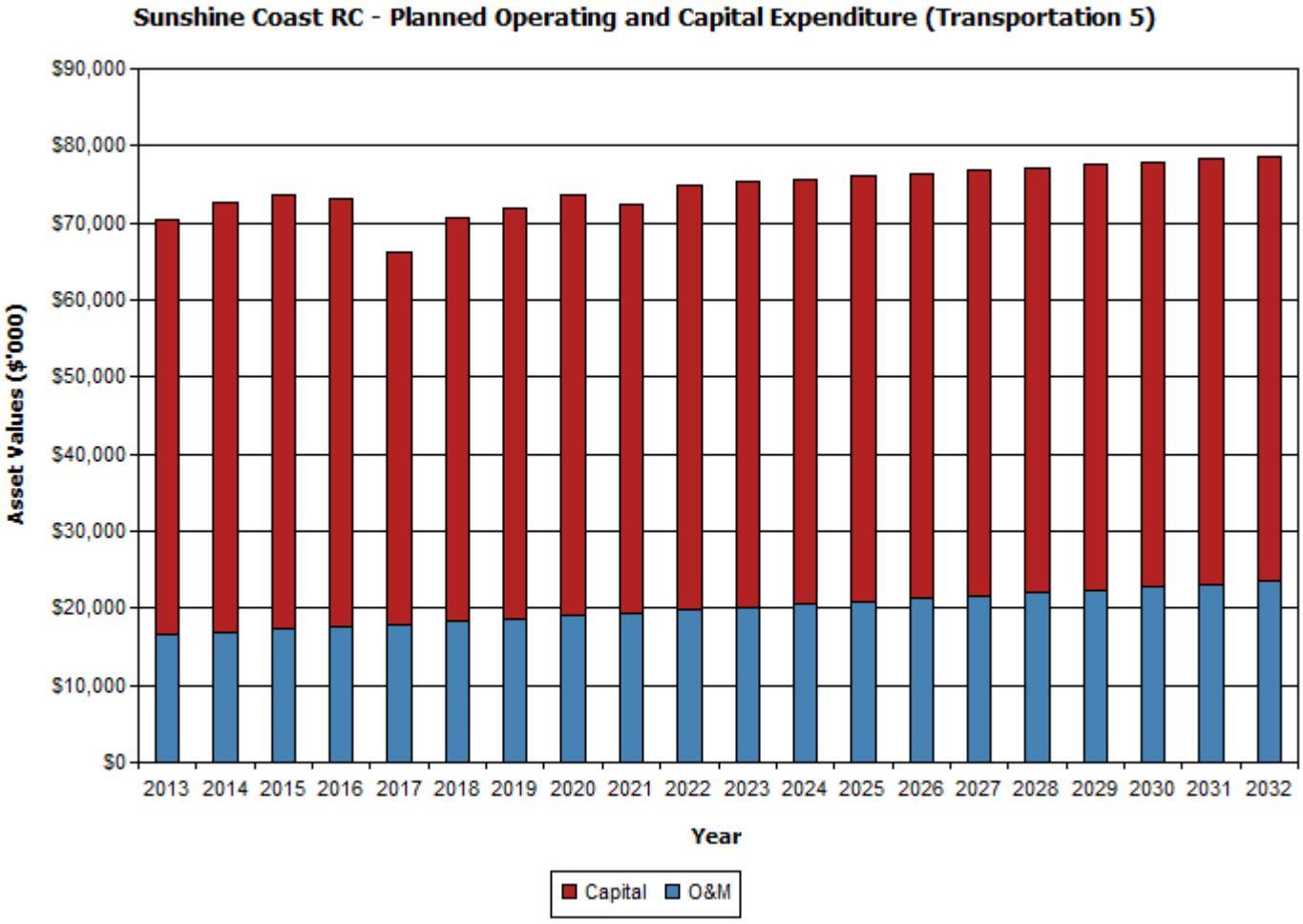


Fig 7. Planned Operating and Capital Expenditure

Note that all costs are shown in current 2012 dollar values, and are based on data available from council's financial asset register.

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).

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. Other asset classes will be added to this figure as data becomes available. The renewal and maintenance expenditure to renew only the physical road network as outlined in Chapter 5 is an average of $21.1 Million over the next 10 years based on condition modelling from the PMS.

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 Transportation 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 physical road network gap can be roughly calculated from the calculations in Chapter 5. The current renewal expenditure is approximately $20 Million per annum and calculations based on useful lives and modelling from the PMS indicate that it should be $21.1 Million. The life cycle sustainability index is 0.94.

Further validation of the Sustainability Index will be undertaken through improved data knowledge, systems and processes and reported back to Council in updated versions of this plan.

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.

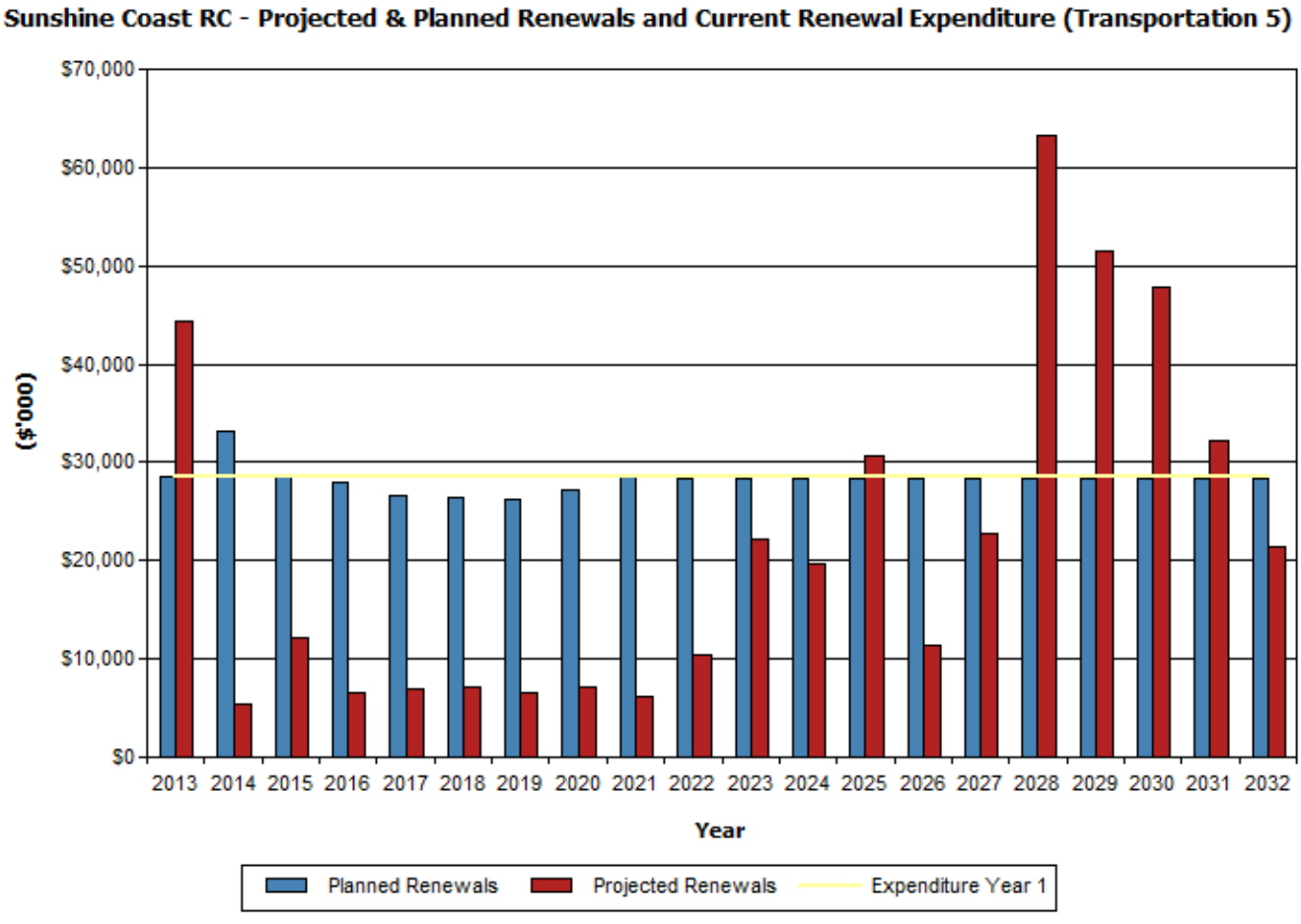


Fig 8. Projected and Planned Renewals and Current Renewal Expenditure

The data provided in this graph s produced form the FAIMS system. The projected Renewals are being influenced by incorrect installation dates which lead to this data being inaccurate. Therefore meaningful funding gaps cannot be calculated.

Year End June 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 in Renewal Expenditure (Projected - Planned) ($'000)	Cumulative Renewal Funding Shortfall ($'000)
2013	$1,328.14	$15,222.53	$44,264.81	$25,462.00	$0.00	$28,524.00	$15,740.81	$15,740.81
2014	$1,354.71	$15,527.07	$5,429.68	$22,601.00	$0.00	$33,079.00	-$27,649.32	-$11,908.51
2015	$1,384.20	$15,865.10	$12,200.58	$27,475.00	$0.00	$28,803.00	-$16,602.42	-$28,510.92
2016	$1,413.78	$16,204.05	$6,585.62	$27,452.00	$0.00	$27,970.00	-$21,384.38	-$49,895.30
2017	$1,440.09	$16,505.70	$6,891.57	$21,684.00	$0.00	$26,689.00	-$19,797.43	-$69,692.73
2018	$1,468.90	$16,835.83	$7,115.49	$25,801.00	$0.00	$26,435.00	-$19,319.51	-$89,012.24
2019	$1,498.50	$17,175.12	$6,465.05	$27,010.00	$0.00	$26,214.00	-$19,748.95	-$108,761.19
2020	$1,528.33	$17,516.98	$7,221.01	$27,230.00	$0.00	$27,240.00	-$20,018.99	-$128,780.18
2021	$1,556.62	$17,841.28	$6,181.49	$24,421.00	$0.00	$28,675.00	-$22,493.51	-$151,273.70
2022	$1,586.33	$18,181.83	$10,382.04	$26,692.00	$0.00	$28,421.00	-$18,038.96	-$169,312.65
2023	$1,616.15	$18,523.53	$22,145.41	$26,692.00	$0.00	$28,421.00	-$6,275.59	-$175,588.24
2024	$1,646.06	$18,866.40	$19,734.77	$26,692.00	$0.00	$28,421.00	-$8,686.23	-$184,274.48
2025	$1,676.08	$19,210.44	$30,573.31	$26,692.00	$0.00	$28,421.00	$2,152.31	-$182,122.17
2026	$1,706.20	$19,555.67	$11,453.44	$26,692.00	$0.00	$28,421.00	-$16,967.56	-$199,089.72
2027	$1,736.42	$19,902.09	$22,821.31	$26,692.00	$0.00	$28,421.00	-$5,599.70	-$204,689.42
2028	$1,766.76	$20,249.74	$63,332.97	$26,692.00	$0.00	$28,421.00	$34,911.97	-$169,777.45
2029	$1,797.19	$20,598.61	$51,556.61	$26,692.00	$0.00	$28,421.00	$23,135.61	-$146,641.84
2030	$1,827.74	$20,948.72	$47,839.30	$26,692.00	$0.00	$28,421.00	$19,418.30	-$127,223.54
2031	$1,858.40	$21,300.08	$32,144.02	$26,692.00	$0.00	$28,421.00	$3,723.02	-$123,500.52
2032	$1,889.16	$21,652.71	$21,331.20	$26,692.00	$0.00	$28,421.00	-$7,089.80	-$130,590.32

Table 6.1.1 Projected and Planned Renewals and Expenditure Gap

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets.

Achieving the financial strategy will require an accurate register of all assets to be able to project renewal forecasts.

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. The data contained below is an extrapolation of predicted population growth. The actual growth projections developed by regional strategy and planning will be included in future revisions of this plan.

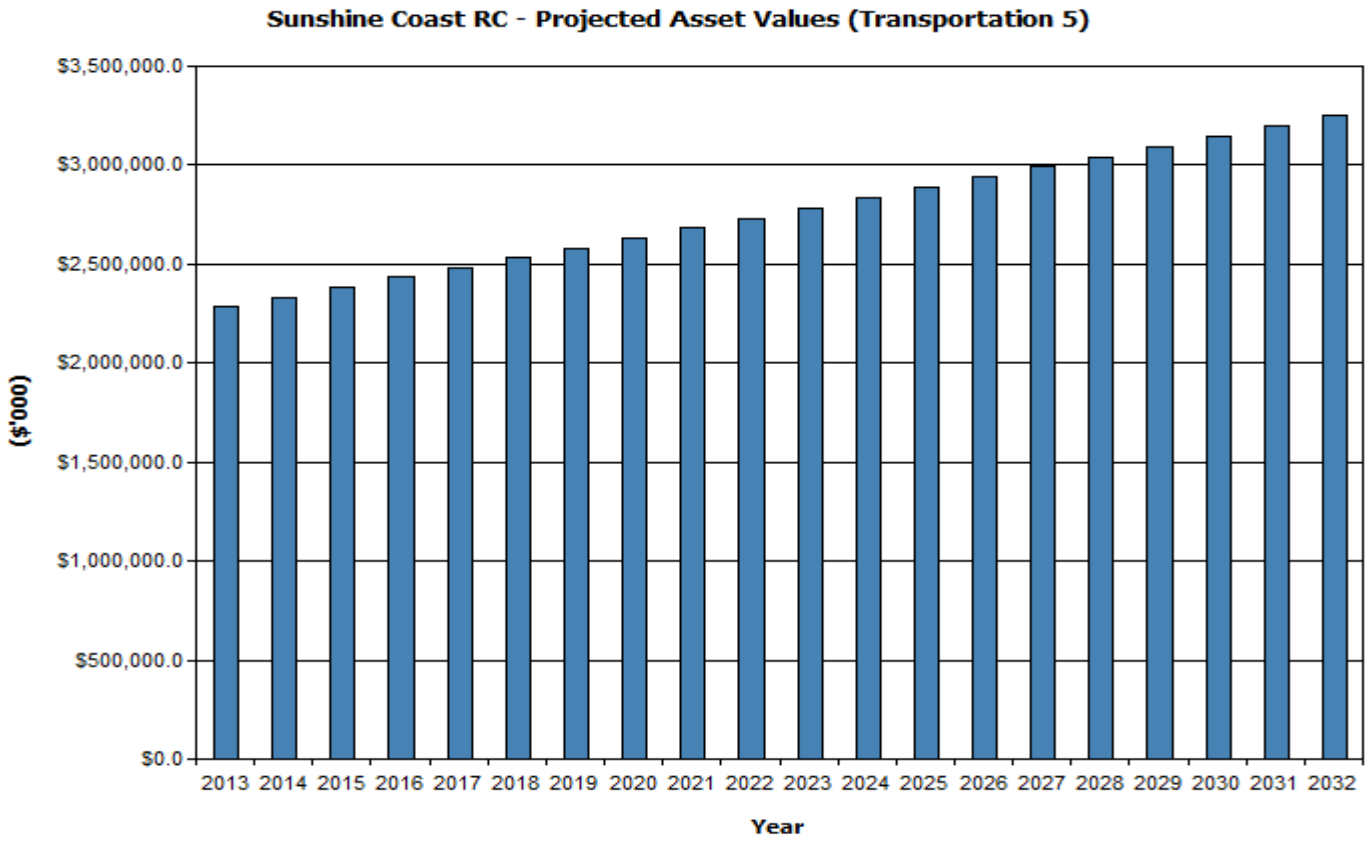


Fig 9. Projected Asset Values

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

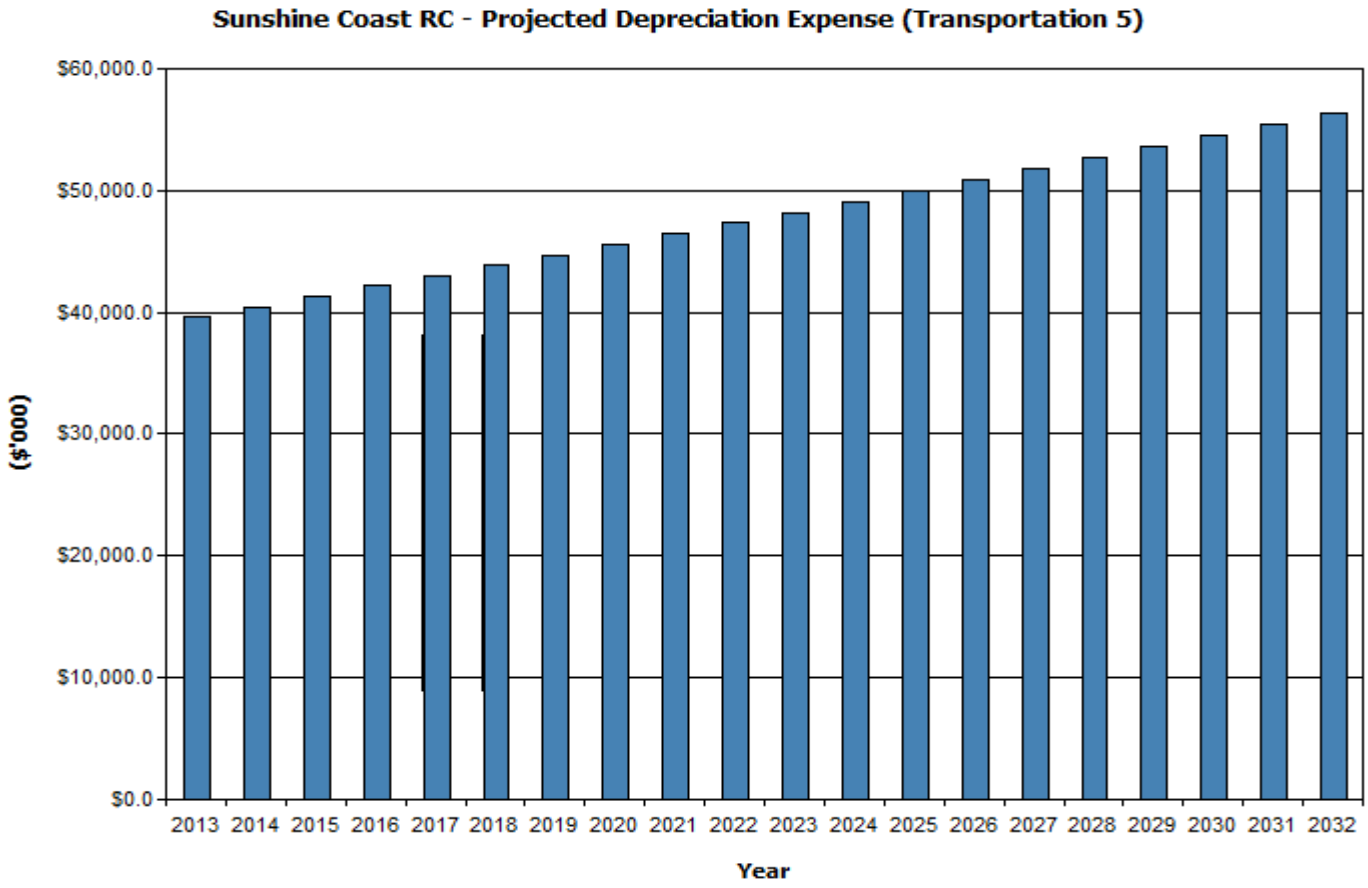


Fig 10. Projected Depreciation Expense

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. The data used to obtain this graph is largely extrapolated and will be improved as data becomes available. Forecast of the assets' depreciated replacement cost is shown in Fig 11.

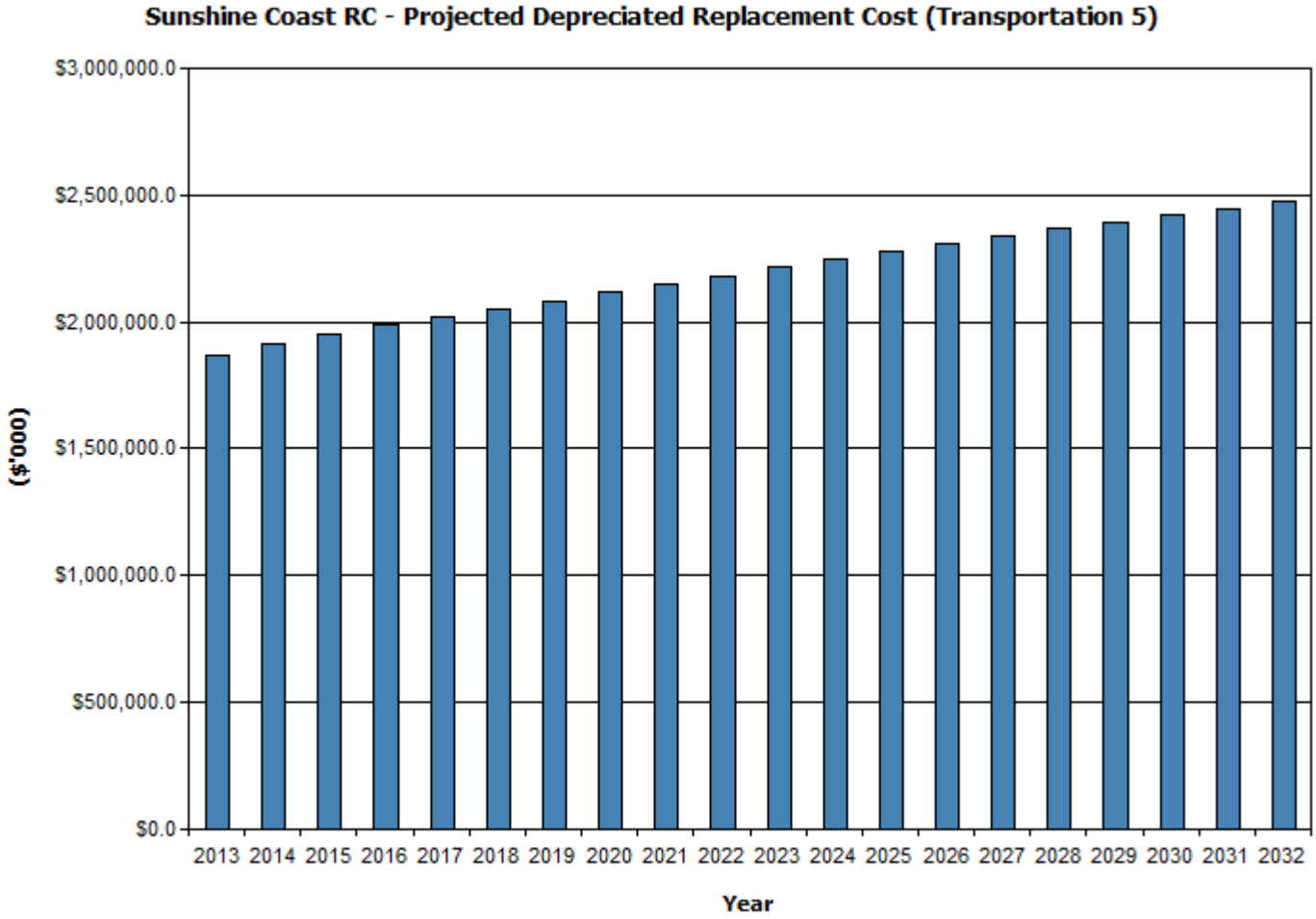


Fig 11. Projected Depreciated Replacement Cost

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:

- Data integrity is reasonable;
- Asset registers are accurate;
- Asset valuation rates reflect actual rates;
- Asset useful lives reflect current practice;
- Growth data is accurate.
- Council Boundaries remain unchanged.

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

- Development of a centralised asset register with accurate condition data;
- Review of valuation rates and their application;
- Continued development of the as constructed data base for donated assets;
- Accurate modelling of deterioration models;
- Accurate design and life expectancy data;
- Componentisation of assets; and
- Understanding when assets constructed

7. ASSET MANAGEMENT PRACTICES

7.1 Accounting/Financial Systems

Technology 1 Enterprise Suite

Chris 21 payroll software

7.2 Asset Management Systems

CWS is in the process of implementing the Maximo Maintenance Management System which will have some functionality as an Asset Management System. Council also run a SMEC Pavement Management System which also has some functionality; ARC GIS, Excel and Access data sheets.

At this stage it is known that there will be a link to the financial system and Maximo but the details are unclear.

Accountabilities and responsibilities for the data and integration between systems are yet to be defined.

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;
- Transport planning strategies and policies;
- Data on new assets acquired by council;
- Maintenance and renewal expenditure;
- Condition assessment data.

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

International Infrastructure Management Manual (IIMM 2011)

IPWEA NAMS Plus website and workshop.

Asset Management Policy

Financial Sustainability Plan 2010-2020

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 cash flow is 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.	Undertake an audit/ cleanse of available data;	CWS	Fully functioning asset management software	July 2015
2.	Undertake a collection program of Missing Data;	CWS	Fully functioning asset management software	Dec 2015
3.	Undertake condition inspections on remaining asset classes;	CWS	Fully functioning asset management software	Dec 2014
4.	Undertake a FWD testing of council roads;	CWS	Contract service Provider	On going
5.	Develop the Maximo system to provide data of maintenance activities by asset;	Maximo Development Team	Centralised register with integration to all corporate asset systems.	On going
6.	Ensure greater integration between Priority Infrastructure Plans and Renewal Program.	CWS, TES		On going
7.	Greater collaboration with Council's Strategic Planning area.	AMS,RSP		June 2013

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 and is due for revision and updating within 2 years of each Council election.

REFERENCES

Sunshine Coast Council, 'Capital works Budget.

DVC, 2006, 'Asset Investment Guidelines', 'Glossary', Department for Victorian Communities, Local Government Victoria, Melbourne, http://www.dvc.vic.gov.au/web20/dvclgv.nsf/allDocs/RWP1C79EC4A7225CD2FCA257170003259F6?OpenDocument

IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au

APPENDICES

Appendix A Infrastructure Renewal Priority Rating System

Renewal – Bridges Priority Ranking Criteria

Criteria	Weighting
community / social benefit	15%
corporate alignment	15%
risk assessment	25%
financial considerations	10%
environmental impacts	10%
economic benefits	10%
demand	15%

Renewal – Carparks Priority Ranking Criteria

Criteria	Weighting
community / social benefit	20%
corporate alignment	20%
risk assessment	15%
financial considerations	15%
environmental impacts	10%
economic benefits	10%
Demand	10%

Renewal – Gravel Road Priority Ranking Criteria

Criteria	Weighting
community / social benefit	10%
corporate alignment	10%
risk assessment	15%
financial considerations	30%
environmental impacts	5%
economic benefits	10%
Demand	20%

Appendix B New Asset Creation / Augmentation Priority Rating System

New - Bridges Priority Ranking Criteria

Criteria	Weighting
community / social benefit	15%
corporate alignment	15%
risk assessment	25%
financial considerations	10%
environmental impacts	10%
economic benefits	10%
demand	15%

Table 5.5.2 New - Carparks Priority Ranking Criteria

Criteria	Weighting
community / social benefit	20%
corporate alignment	20%
risk assessment	15%
financial considerations	15%
environmental impacts	10%
economic benefits	10%
Demand	10%

Table 5.5.3 New – Gravel Roads Priority Ranking Criteria

Criteria	Weighting
community / social benefit	10%
corporate alignment	10%
risk assessment	15%
financial considerations	30%
environmental impacts	5%
economic benefits	10%
demand	20%