



General Asset Management Plan



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This document has been adapted from the IPWEA NAMS Asset Management templates



The Institute of Public Works Engineering Australia.

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TABLE OF CONTENTS

TABLE OF CONTENTS.....	3
2. INTRODUCTION.....	4
2.1 Background.....	4
2.2 Goals and Objectives of Asset Management.....	5
2.3 Plan Framework.....	6
2.4 Core and Advanced Asset Management.....	8
2.4 Community Engagement.....	8
3. LEVELS OF SERVICE.....	9
3.1 Customer Research and Expectations.....	9
3.2 Legislative Requirements.....	9
3.3 Current Levels of Service.....	9
3.4 Desired Levels of Service.....	9
4. FUTURE DEMAND.....	10
4.1 Demand Forecast.....	10
4.2 Changes in Technology.....	10
4.3 Demand Management Plan.....	10
4.4 New Assets for Growth.....	10
5. LIFECYCLE MANAGEMENT PLAN.....	12
5.1 Background Data.....	12
5.2 Risk Management Plan.....	13
5.3 Routine Operations and Maintenance Plan.....	13
5.4 Renewal / Replacement Plan.....	15
5.5 Creation/Acquisition/Upgrade Plan.....	16
5.6 Disposal Plan.....	16
6. FINANCIAL SUMMARY.....	17
6.1 Financial Statements and Projections.....	17
6.2 Funding Strategy.....	18
6.3 Valuation Forecasts.....	18
6.4 Key Assumptions made in Financial Forecasts.....	18
7. ASSET MANAGEMENT PRACTICES.....	19
7.1 Accounting/Financial Systems.....	19
7.2 Asset Management Systems.....	19
7.3 Information Flow Requirements and Processes.....	20
7.4 Standards and Guidelines.....	20
8. PLAN IMPROVEMENT AND MONITORING.....	21
8.1 Performance Measures.....	21
8.2 Improvement Plan.....	21
8.3 Monitoring and Review Procedures.....	21
REFERENCES.....	22
General Reference Documents:.....	22
APPENDICES.....	23
Appendix A - Abbreviations.....	24
Appendix B - Glossary.....	25

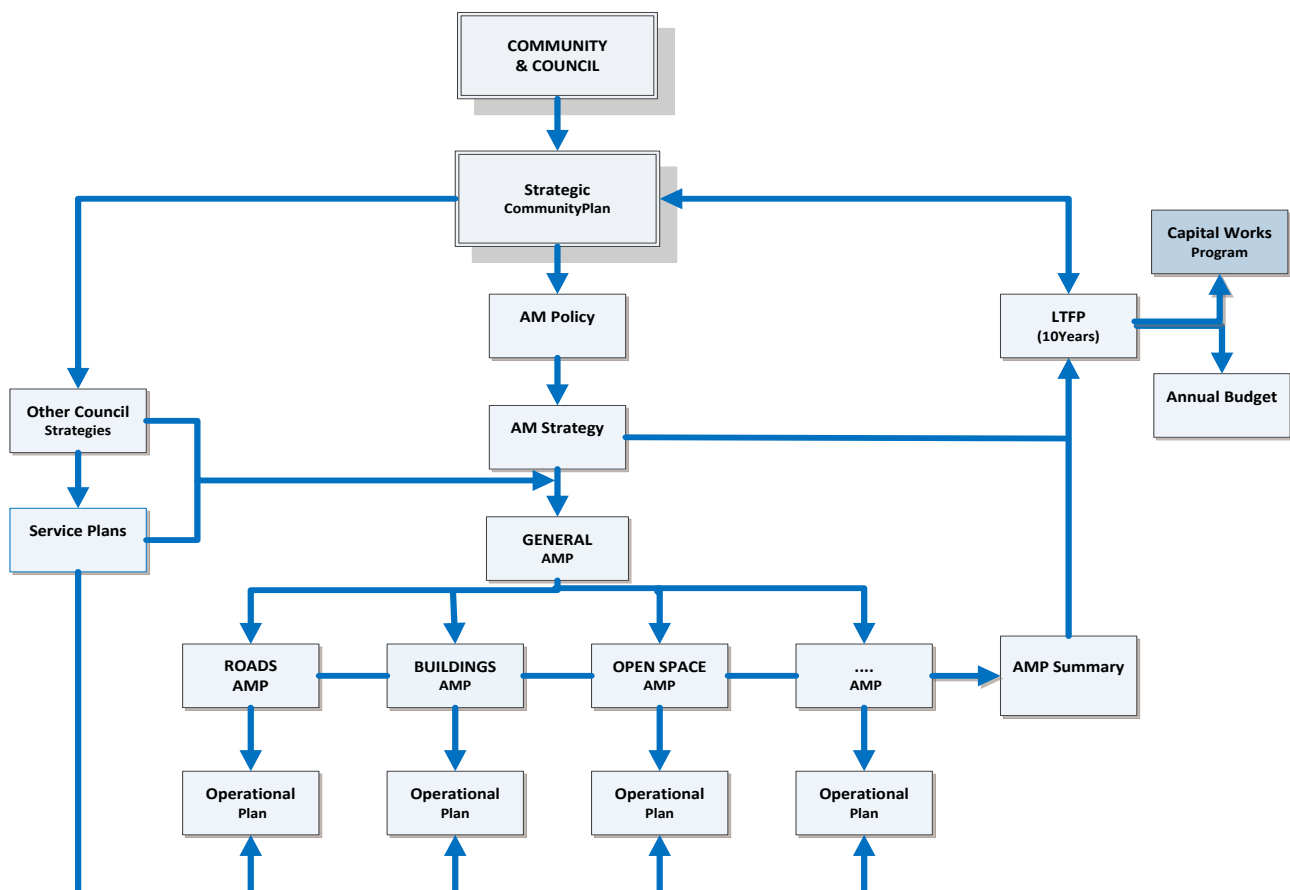
2. INTRODUCTION

2.1 Background

The General Asset Management Plan (AMP) contains information common to all Asset Management Plans produced for the Shire of Esperance.

This document should be read in conjunction with Council's Asset Management Policy, Asset Management Strategy, Asset Management Plans and associated current planning documents.

The following flow chart outlines current Asset Management Planning processes:



Council's current planning documents include:

- Shire of Esperance Strategic Community Plan
- Shire of Esperance Corporate Business Plan
- Shire of Esperance Long Term Financial Plan
- Shire of Esperance Infrastructure Asset Management Plan
- Shire of Esperance Asset Management Strategy 2012 to 2014
- Financial Management Policy
- Council Budget
- Records Management Policy
- Community Engagement Policy

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 include:

- 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.

The goal of the asset management plan is to:

- Document the services/service levels to be provided and the costs of providing the service,
- Communicate the consequences for service levels and risk, where desired funding is not available, and
- Provide information to assist decision makers in trading off service levels, costs and risks to provide services in a financially sustainable manner.

Asset management plans are prepared under the direction of Council's vision, mission, goals and objectives.

Council's vision is:

"Esperance is spectacular. We have a vibrant, welcoming community that encourages new people to our region and gives a sense of belonging to those who live here. We value our natural resources and accept the responsibility to manage them for future generations to enjoy. We aim to strengthen and diversify the regions economic base in a way that compliments our social and environmental values. We are strategically located as a diverse and dynamic region that is committed to a sustainable change and growth. Above all, we are a community that makes it happen."

Council's values are:

Professionalism – in the standards and ethics of our actions

Respect – through courtesy and honesty in our dealings with all people

Integrity – that builds community trust

Dedication – of a committed team that works together to provide leadership in the community

Excellence – in the service that we provide to the community

Council's mission is:

The corporate mission articulates the aim and purpose of the Shire. The Corporate Mission is intrinsically linked to the community vision: *"The Shire of Esperance, as custodians of community infrastructure, will endeavour to be efficient, sustainable and responsive to community needs. As a leading organisation we will operate in a responsible, transparent and ethical manner"*.

2.3 Plan Framework

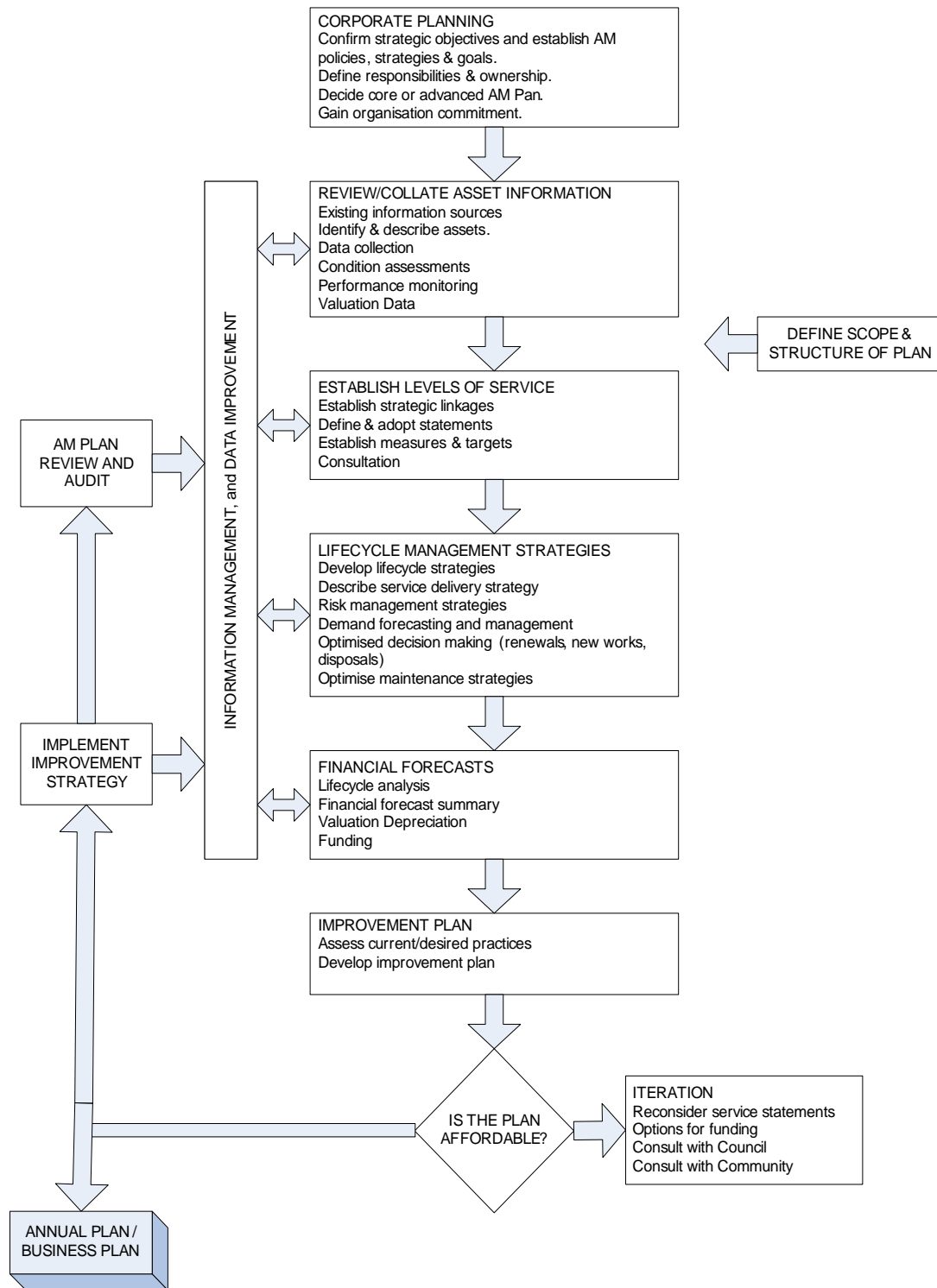
Key elements for Asset Management Plans include:

- 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 the organisation 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 the organisation'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: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11.



2.4 Core and Advanced Asset Management

Asset management plan may be prepared at different stages of and represent various levels of refinement or confidence. Initial plans may be considered a first cut or 'core' asset of data and are prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

2.4 Community Engagement

Future revisions of asset management plans will include outcomes where available from community engagement processes to ensure the collective vision on service levels and their costs are incorporated into long term financial planning plans.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Research will assist Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability to pay for the service.

3.2 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. These are detailed relevant to the asset class under review.

3.3 Current Levels of Service

Council has defined service levels in two terms:

Community Levels of Service which relates to the service outcomes that the community wants in terms of safety, quality, quantity, function, utilisation, cost effectiveness and legislative compliance.

Technical Levels of Service support the community service levels and relate to operations, maintenance, renewal and , upgrade of assets. Technical measures also relate to the allocation of resources required to achieve the desired community outcomes.

Reference should be made to specific AMP's for measures relating to that asset class.

3.4 Desired Levels of Service

Indications of desired levels of service may be obtained from various sources including residents' feedback to Councillors and staff, service requests, correspondence and community consultation.

4. FUTURE DEMAND

4.1 Demand Forecast

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

The present position and projections for demand drivers that may impact future service delivery and utilisation of assets were identified and are documented in Table 4.3.

4.2 Changes in Technology

Technology changes forecast to affect the delivery of services from assets are detailed in AMP's and may include details of the change and the effect on service delivery.

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.

Non-asset solutions focus on providing the required service without the need for the council to own the assets. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another council area or public toilets provided in commercial premises.

Opportunities for demand management are identified in AMP's and may include details of the service affected and any management plans identified.

4.4 New Assets for Growth

Many new assets required to meet growth will be acquired free of cost from land developments and constructed/acquired by Council.

Acquiring these 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 operations and maintenance costs.

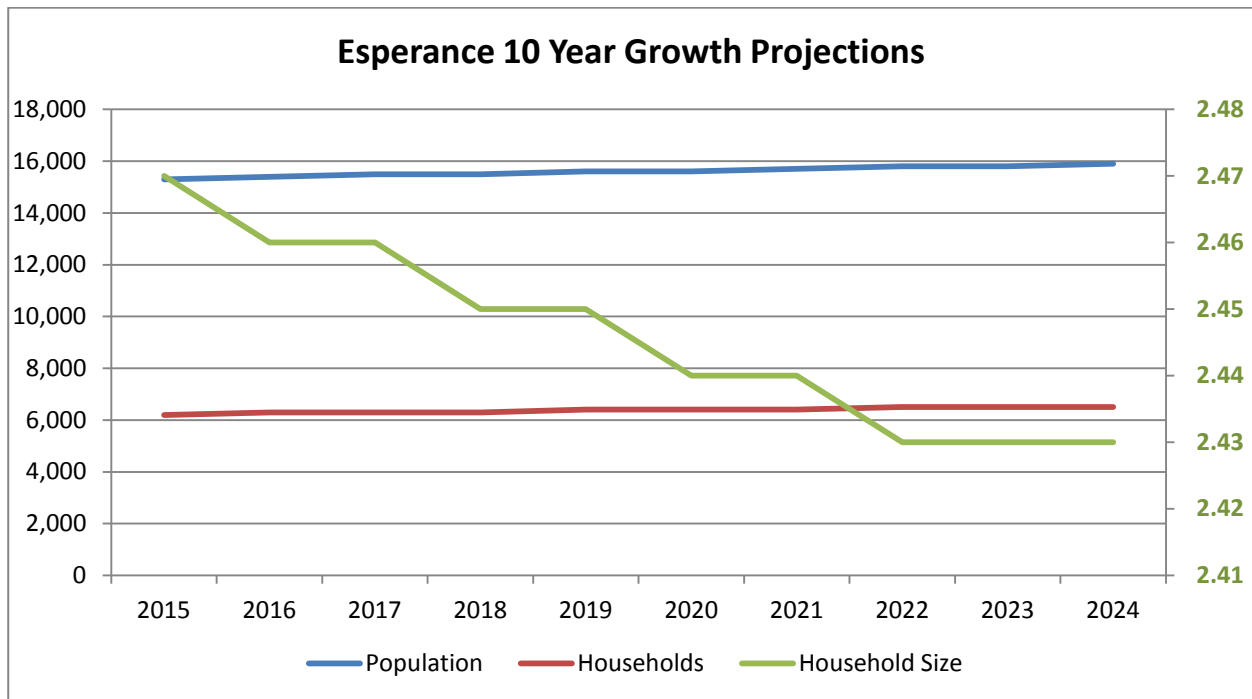
Population statistics and trends have been sourced from the Western Australian Planning Commission "WA Tomorrow" Household reports which may be found at <http://www.planning.wa.gov.au/publications/6194.asp>.

A summary of statistics for the current 10 year planning period are shown in the following table and charts:

Table: Esperance 10 Year Growth Projections

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	10 Yr Average	
Population	15,300	15,400	15,500	15,500	15,600	15,600	15,700	15,800	15,800	15,900	60	0.39%
Households	6,200	6,300	6,300	6,300	6,400	6,400	6,400	6,500	6,500	6,500	30	0.47%
Household Size	2.47	2.46	2.46	2.45	2.45	2.44	2.44	2.43	2.43	2.43	2.45	-0.16%

Figure: Esperance 10 Year Growth Projections



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 are detailed in each AMP and may include information including quantity, age, condition and useful life. The accuracy of projected renewal expenditure and lifecycle costs is dependant on the availability of accurate data, estimations will therefore result in low confidence in long term projections.

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 within each AMP.

5.1.3 Asset condition

Asset condition is assessed using the IIMM 1-5 scale as follows:

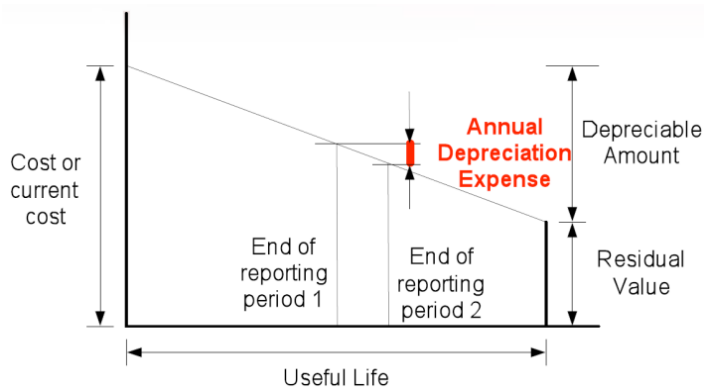
Table 5.1.3: IIMM Description of Condition

Condition Grading	Description of Condition
1	Very Good: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Fair: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

5.1.4 Asset valuations

Asset values are determined using information gathered from the asset register at a given date. Values include:

- Current Replacement Cost (Current replacement cost of all assets)
- Depreciable Amount (Current replacement cost less Residual value)
- Fair Value (Current Replacement Cost less Accumulated depreciation)
- Annual Depreciation Expense (Current replacement cost less Residual / Useful Life)



Council's sustainability reports required by state regulation include:

- **Asset Consumption Ratio** (Depreciation/Depreciable Amount) Target of between 50 and 75%. A ratio less than 50% indicates a rapid deterioration of assets, greater than 75% may indicate an over investment in the asset base.
- **Asset renewal** (Capital renewal exp/Depreciable amount) Target of between 90 and 110%. A ratio less than 90% may indicate under investment in renewal, greater than 110% may indicate over investment in renewal.
- **Annual Upgrade/New** (Capital upgrade exp/Depreciable amount) Target of between 95 and 105%. The ratio indicates the financial capacity to continue to provide existing levels of service in the future without additional operating expenses above that currently projected.

To provide services in a financially sustainable manner, Council will need to ensure that it is renewing assets at the rate they are being consumed over the medium-long term and funding the life cycle costs for all new assets and services in its long term financial plan.

5.1.5 Asset hierarchy

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

The hierarchy where it exists is detailed in each AMP and may include services and service level objectives.

5.2 Risk Management Plan

Risk Management is assessed in accordance the framework set out in Council Policy – EXE 019: Risk Management and the Risk Management Procedures Manual, the documents set out the Shire's approach to the identification, assessment, management, reporting and monitoring of risks.

An assessment of risks associated with service delivery from infrastructure assets identifies critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process incorporates the Shire of Esperance tables to assess credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develop a risk rating, evaluate the risk and develop a risk treatment plan for non-acceptable risks. Risk Management Plans are developed using standard templates in conjunction with the Shire's OHS Risk Management Officer and relevant staff for each AMP and located in the "Risk Management – Planning – Organisational Risk Management ORM" folder in TRIM.

Critical risks are those being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action. An Infrastructure Risk Management Plan will usually be required for each asset class and AMP and may identify assets at risk, risk ratings, treatment plans and associated costs.

5.3 Routine Operations and Maintenance Plan

Operations include regular activities for services provided by the Shire.

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 Operations and Maintenance plan

Operations activities affect service levels including quality and function through street sweeping and grass mowing frequency, cleaning frequency and opening hours of building and other facilities.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. Maintenance may be classified into reactive, planned and specific maintenance work activities.

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

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.

Specific 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 but may require a specific budget allocation.

Maintenance expenditure trends are identified and detailed for each asset class and AMP. Current expenditure should be used where it represents normal trends as historic expenditure will effect the Lifecycle expenditure projections. Reactive maintenance is carried out in accordance with response levels of service where they are detailed in the Appendices.

5.3.2 Operations and Maintenance Strategies

The organisation will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities may include:

- Scheduling operations activities ,
- A planned maintenance system to reduce costs and improve outcomes
- Maintain a current risk register and response capabilities
- Implement workforce training to meet required operations and maintenance needs,
- Review asset utilisation and appropriate management options
- Develop and maintain an asset hierarchy based on criticality

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is often forecast to trend in line with the value of the asset stock. 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.

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 the 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

Assets requiring renewal are identified from one of three methods provided in the 'Expenditure Template'.

- Method 1 uses Asset Register data to project the renewal costs for renewal years using acquisition year and useful life, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the 'Expenditure template'.

The ranking criteria used to determine priority of identified renewal proposal may be identified for each asset class or AMP and include criteria and weighting.

Renewal ideally is 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.

5.4.2 Renewal standards

Renewal work may be carried out in accordance with Standards and Specifications which are detailed here.

5.4.3 Summary of projected renewal expenditure

Projected future renewal expenditures are generally forecast to increase over time as the asset stock ages and costs are summarised here for each asset class.

The projected capital renewal program may be shown in the Appendices.

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 capital works programs 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 estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking is determined using stated criteria and weighting. A system of ranking Capital projects is not currently used.

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 projected upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in this section. The Capital works program may be shown in the AMP's Appendices.

New assets and services are to be funded from 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 identified in this section together with estimated annual savings from not having to fund operations and maintenance of the assets.

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 here for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets), net disposal expenditure and estimated budget funding.

6.1.1 Financial sustainability in service delivery

The following key indicators for financial sustainability are generally considered in the analysis of the services provided by the various asset categories. Projected and budgeted expenditures are considered over long term life cycle and the 10 Year and 5 Year planning periods.

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 operations and maintenance expenditure and asset consumption (depreciation expense).

Life cycle expenditure includes operations, maintenance and capital renewal expenditure in year 1. Life cycle expenditure will vary depending on the timing of asset renewals.

Life cycle costs are then compared to life cycle expenditure to give an indicator of sustainability in service provision. A shortfall between life cycle cost and life cycle expenditure is the life cycle gap.

The life cycle costs and life cycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term. If the life cycle expenditure is less than that life cycle cost, it is most likely that outlays will need to be increased or cuts in services made in the future.

Knowing the extent and timing of any required increase in outlays and the service consequences if funding is not available will assist organisations in providing services to their communities in a financially sustainable manner. This is the purpose of the asset management plans and long term financial plan.

Medium term – 10 year financial planning period

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

Short Term – 5 year financial planning period

The projected operations, maintenance and capital renewal expenditure and funding required over the first 5 years of the planning period is estimated here.

Financial Sustainability Indicators

The financial sustainability indicators over the 10 year planning period and for the long term life cycle are shown here.

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and funding to achieve a financial sustainability for the first years of the asset management plan and ideally over the 10 year life of the AMP.

The projected asset renewals are compared to budgeted renewal expenditure in the capital works program and capital renewal expenditure in year 1 of the planning period here.

Table 6.1.1 shows the shortfall between projected and budgeted renewals

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. The gap is managed by developing an asset management plan to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community.

6.1.2 Expenditure projections for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year long term financial plan.

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from future operating and capital budgets. The funding strategy is detailed in the organisation's 10 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. Figure 9 shows the projected replacement cost asset values over the planning period.

Depreciation expense values are forecast in line with asset values as shown in Figure 10. 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 Figure 11.

Unit Rates are developed using first principles method using a combination of current material, labour and plant rates from auditable sources and maintained in a central file located in the Trim document management system. These are applied to assets in the current Asset Management System to develop current valuations, fair value, annual depreciation and for predictive modelling processes.

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 the AMP. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

7. ASSET MANAGEMENT PRACTICES

7.1 Accounting/Financial Systems

7.1.1 Accounting and financial systems

The current financial package provided by Civica is Authority.

7.1.2 Accountabilities for financial systems

Accountability for the finance system resides in Director Corporate Resources with the Manager Financial Services having prime responsibility for system maintenance and development

7.1.3 Accounting standards and regulations

All local governments in Western Australia are required to prepare financial statements in accordance with the Local Government Act 1995, Local Government (Financial Management) Regulations 1996 and applicable Australian Accounting Standards (as they apply to local governments and not-for-profit entities).

7.1.4 Capital/maintenance threshold

Council has adopted a capitalisation materiality level of \$5,000 for all asset classes. (Resolution S0308-1269)

Although components included in this plan may individually fall below this threshold; collectively they may be included to ensure the renewal plan is representative of expenditure at all levels.

7.1.5 Required changes to accounting financial systems arising from AMP's

Improvement opportunities are identified and included from time to time. Fair Value accounting was implemented in June 2014 and has resulted in the restructure of the general ledger/chart of accounts. In addition, BIS has been introduced for financial reporting.

7.2 Asset Management Systems

7.2.1 Asset management system

The Shire of Esperance has adopted the NAMS system of Asset Management as a base for managing infrastructure asset data and the production of Asset Management Plans. The AssetFinda Asset Management Information System was introduced in 2015 and is used to manage asset data held by the Shire with the exclusion of Roads and Fleet. Road asset data is currently held in the RAMM database off-site, Fleet asset data is held in Authority with some operational data maintained in the Unifleet system off-site.

7.2.2 Asset registers

Data used to prepare Asset Management Plans is sourced from the relevant Asset Management Systems.

7.2.3 Linkage from asset management to financial system

The financial and Asset Management systems are not intrinsically linked. It is anticipated that valuations will be conducted in the relevant Asset Management System and journaled to Finance at summary level.

7.2.4 Accountabilities for asset management system and data

The Asset Management data and processes are the responsibility of the Manager Asset Planning who gives direction to

Officers to ensure assets are audited, associated plans are developed and Asset Management processes are further developed and implemented.

7.2.5 Required changes to asset management system arising from AMP's

It is anticipated that improvements will continue to be identified and implemented.

7.3 Information Flow Requirements and Processes

The key information flows into this asset management plan include:

- Council strategic and operational plans,
- Service requests from the community,
- Network assets information,
- The unit rates for categories of work, materials and assets
- Current levels of service, expenditures, service deficiencies and service risks,
- Projections of various factors affecting future demand for services and new assets acquired by Council,
- Future capital works programs,
- Financial asset values.
- The projected Works Program and trends,
- The resulting budget and long term financial plan expenditure projections,
- Financial sustainability indicators.

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

7.4 Standards and Guidelines

Relevant Standards, guidelines and policy documents referenced in this asset management plan are identified here.

8. PLAN IMPROVEMENT AND MONITORING

8.1 Performance Measures

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

The degree to which the required cashflows identified in this asset management plan are incorporated into the organisation's long term financial plan and Community/Strategic Planning processes and documents,

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

Improvement Plans are developed and included in each AMP and may include tasks, responsibilities, resourcing and timeframes.

8.3 Monitoring and Review Procedures

Asset management plans are generally reviewed during annual budget preparation and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of the budget decision process.

Plans have a limited life and require revision and updating generally at intervals of between 3 and 5 years.

REFERENCES

General Reference Documents:

Shire of Esperance – Strategic Community Plan

Shire of Esperance – Corporate Business Plan

Shire of Esperance – Long Term Financial Plan

Shire of Esperance – Infrastructure Asset Management Plan

Shire of Esperance ‘Annual Plan and Budget’

Shire of Esperance ‘Asset Management Policy’

Shire of Esperance ‘Financial Management Policy’

Shire of Esperance ‘Records Management Policy’

Shire of Esperance ‘Community Engagement Policy’

Department of Local Government WA ‘Asset Management – Framework and Guidelines’

Department of Local Government WA ‘Integrated Planning and Reporting Advisory Standard’

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

IPWEA, NAMS.PLUS Asset Management Institute of Public Works Engineering Australia, Sydney, www.ipwea.org/namsplus

IPWEA, Australian Infrastructure Financial Management Guidelines, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

IPWEA, Asset Management for Small, Rural or Remote Communities Practice Note No. 4, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

IPWEA, International Infrastructure Management Manual, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org/IIMM

APPENDICES

Appendix A	Abbreviations
Appendix B	Glossary

Appendix A - Abbreviations

AAAC	Average annual asset consumption
AM	Asset management
AMP	Asset management plan
ARI	Average recurrence interval
ASC	Annual service cost
BOD	Biochemical (biological) oxygen demand
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DRC	Depreciated replacement cost
EF	Earthworks/formation
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
LTFP	Long term financial plan
MMS	Maintenance management system
PCI	Pavement condition index
RV	Residual value
SoA	State of the Assets
SS	Suspended solids
vph	Vehicles per hour
WDCRC	Written down current replacement cost

Appendix B - Glossary

Annual service cost (ASC)

- 1) Reporting actual cost
The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
- 2) For investment analysis and budgeting
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 operations, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

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 hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)

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.

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided

and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

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 expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation'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 - new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability 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 generally has no impact on revenue, but may reduce future operations 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.

Capital expenditure - upgrade

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 discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation'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.

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

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

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

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

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, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than noncritical assets.

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.

Deferred maintenance

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.

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 outlays.

Expenses

Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value

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

Financing gap

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

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 that contribute to meeting the needs of organisations or the 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 separate 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.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

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

Life Cycle Cost *

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. 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 average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **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.
- **Reactive maintenance**
Unplanned repair work that is carried out in response to service requests and management/ supervisory directions.
- **Specific maintenance**
Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.
- **Unplanned maintenance**
Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

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

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is

capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

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.

Operations

Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Operating expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense

The gross outflow of economic benefits, being cash and non cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operating expenses

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio

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

Operations, maintenance and renewal gap

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)

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

PMS Score

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

Rate of annual asset consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable

amount.

Rate of annual asset renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *

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

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 operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

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

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

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 total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. 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 (Depreciated Replacement Cost/Depreciable Amount).

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, 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.

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

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.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. 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 net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *