Shire of Bridgetown-Greenbushes
.... simply beautiful

Consolidated Asset Management Plan

2016-2026

May 2017 Revision 4

Adopted:

Document Control	

Document ID: 59 299 140531 nams plus3 amp template v3.1					
Rev No	Date	Revision Details	Author	Reviewer	Approver
1	30th September 2016	Draft Consolidated AMP Version 2	KJW	ML	ML
2	3rd May 2017	Draft Consolidated AMP updated with 30th June 2016 valuations and data	KJW	ML	
3	9th May 2017	Correct Upgrade/New projections	KJW	ML	ML

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

Context

The Shire of Bridgetown-Greenbushes is located at the heart of the South West of Western Australia close to forests and National Parks, wineries, heritage walks and trails, and some of the state's most stunning historical buildings. In 2000, Bridgetown was recognised as a "Heritage Town" and as such it is important that our assets are managed in such a way to enhance this image and the development of this Asset Management Plan is an important step in this process.

As part of this process, Council faces the significant task of ensuring its infrastructure meets the service levels that the community desires, within its service capabilities whilst maintaining a sustainable financial position. The provision of the level of service desired by the community is also wholly dependent on the level of State Government grant funding for renewal and upgrade works.

Council owns a varied portfolio of Infrastructure Assets within the following major classes:

- Transport
- Property
- Parks, Reserves & Other Infrastructure
- Plant & Equipment

Council needs to ensure that there is an appropriate level of funding to enable its assets to be maintained and renewed to an acceptable standard.

This Plan collates current asset condition, valuation, income and expenditure data, and compares it with the asset stock's long term funding needs (that are required to provide an agreed and sustainable Level of Service).

This Plan investigates whether Council's current level of asset operational, maintenance and renewal funding are sufficient to sustain the assets at a standard that will be acceptable to both asset owners and users.

Asset management involves continuous monitoring and improvement. Specific tasks and projects have been identified in this plan to ensure the progress of asset management in relation to Council's infrastructure assets. Improving the Shire's asset management approach will ensure the provision of information required to ensure the whole of life costs involved in asset management are acknowledged and the target levels of service are delivered to stakeholders.

Infrastructure Assets

The Infrastructure Asset network comprises:

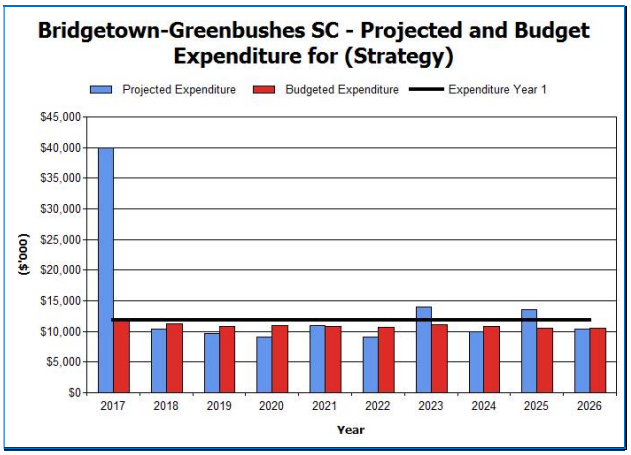
Asset Class	Number
Transport – Road network	737.5 km
Transport – Drainage network	1,413,416 m
Transport – Footpath network	17,844 m
Transport – Bridges	423 m
Transport – Culverts (Rural)	15,852 m
Transport – Drainage Pits & Pipes	681 & 15,566 m
Transport – Road Signage	692
Parks & Gardens	Area to be Assessed
Reserves	Area to be Assessed
Playground Equipment	Qty to be determined
Other Infrastructure	Qty to be determined
Major Plant	25
Minor Plant	61
Equipment	101
Property – Community Use	6
Property – Council Admin & Ops	17
Property – Emergency Services	12
Property – Historical	6
Property – Libraries	1
Property – Public Conveniences	7
Property – Public Halls	5
Property – Residential	3
Property – Sport & Recreation	31
Property – Tourism	1
Property – Furniture & Equip	74
Property – Freehold Land	85

These infrastructure assets have a replacement value of $283,368,000.

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is $136,991,000 or $13,699,000 on average per year.

Estimated available funding for this period is $109,210,000 or $10,921,000 on average per year which is 80% of the cost to provide the service. This is a funding shortfall of -$2,778,000 on average per year. The graph below shows projected expenditure that is based on a forward planning process that tailors planned works to match available funding in the Long Term Financial Plan. This process does not take into account the actual asset needs based on sound asset management planning and whole of life cost principles.



What we will do

We plan to provide infrastructure asset services for the following:

- Operation, maintenance, renewal and upgrade of all assets classes to meet service levels set by Council in annual budgets.

What we cannot do

Until the issue of poor asset condition, asset useful lives, capacity and utilisation information has been resolved Council will continue to allocate finite resources to assets not based on sound asset management planning principles.
This AM Plan indicates that Council has insufficient funding to provide current levels of service into the future. The funding gap is the shortfall between projected asset expenditure and the long term financial plan budget provision. The Whole of Life resourcing gap for services covered by this AM Plan is -$2,565,000 per year.

Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. We have identified major risks as:

- Lack of condition information about the assets could lead to assets becoming unsafe and/or being replaced at sub-optimum levels
- Current levels of service are not clearly understood or documented; this can create inconsistencies around service level delivery and dissatisfaction of the service by the community and facility users
- Insufficient knowledge within the organisation of the Asset Management Planning process does not encourage a strategic focus being applied to asset management potentially leading to poor asset management decisions

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

- Provide training to relevant staff and Councillors
- Include KPI's in staff job descriptions and annual performance reviews
- Development of a assets hierarchy
- Develop and implement an annual condition inspection program
- Undertake community consultation to develop levels of service and incorporate into integrated planning documents
- Undertake annual community survey on levels of service, review resources available to meet expected Levels of Service
- Provide additional resources or adjust levels of service in consultation with the community

Confidence Levels

This AM Plan is based on medium level of confidence.

The Next Steps (Improvement Plan)

The actions resulting from this asset management plan are:

- Develop a process for community engagement on Levels of Service including a survey to determine community service level expectations delivered via Council's assets
- Implement a suitable system and process to record property utilisation and booking request levels
- Develop a hierarchy for all assets identifying parent/child relationships, and link to Levels of Service
- Develop a data collection procedure to ensure repeatability and on-going improvement of condition data collection and modelling processes
- Implement the condition inspection programme for all assets
- Greater degree of componentisation in the condition rating process
- Review the Shire's year acquired/constructed date for all assets
- Determine useful lives and remaining useful lives of Council's assets and adopt consistent unit rates

- Configure the Shire's corporate financial system to record asset expenditure at the individual asset level according to maintenance type and activity
- Identify and improve capture of operational expenditure in the organisation financial system to enable more accurate reporting of operational expenditure
- Develop and implement safety and maintenance inspection programmes and methodologies for all assets
- Identify and assess critical assets for failure modes e.g. backup power facilities in the event of prolonged power outages, etc.
- Identify assets for possible future disposal
- Develop staff AM performance measures and link KPI's to individual job descriptions
- Provide asset management training to relevant staff and Councillors
- Determine split in costs between renewal and upgrades for all future upgrades in Council's planning documents
- Develop a long term capital works programme after undertaking condition inspections
- Develop a ranking criteria for assessment and selection of new/upgrade assets in forward planning documents
- Identify drivers and analyse demand impacts that may impact on future asset management outcomes
- Create Sustainable Assets Policy and an associated action plan
- Investigate alternative power generation technologies to help reduce the Shire's carbon footprint and operating costs
- Investigate and implement a suitable asset management software program to consolidate all asset classes into one integrated database
- Develop long term financial projections for Operational, Maintenance and capital costs in line with the Long Term Financial Plan requirements

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 funding needed to provide the required levels of service over a 20 year planning period.

The asset management plan follows the format for AM Plans recommended in Section 4.2.6 of the International Infrastructure Management Manual[1].

The asset management plan is to be read with the organisation's Asset Management Policy, Asset Management Strategy and long term planning documents.

2.2 Goals and Objectives of Asset Management

The organisation exists to provide services to its community. These services are provided by infrastructure assets. We acquire assets by 'purchase', by contract, construction by our staff and by donation of assets constructed by others to meet increased levels of service.

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

Providing a defined level of service and monitoring performance,

- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.[2]

2.3 Plan Framework

Key elements of the plan are

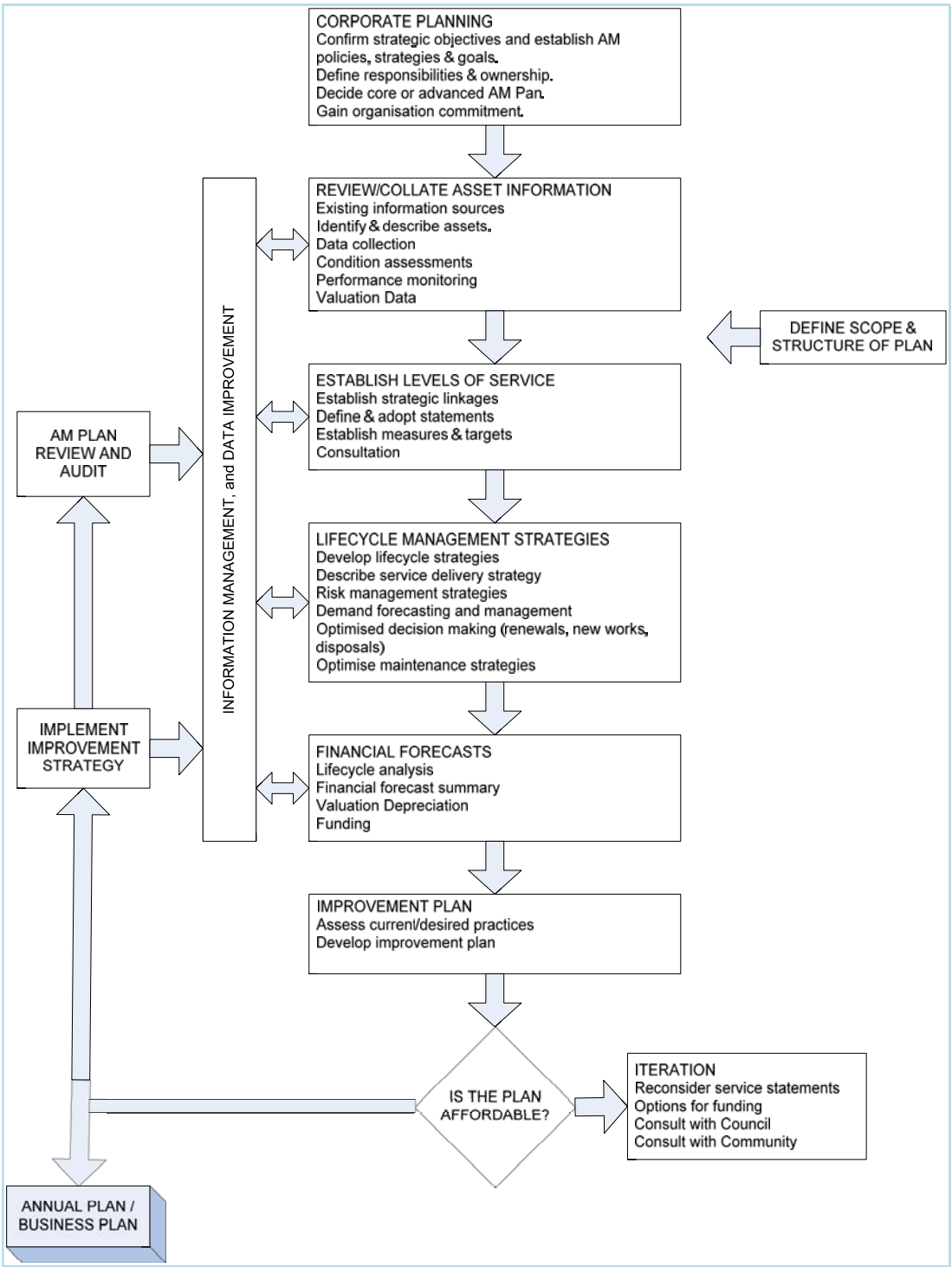
- Levels of service – specifies the services and levels of service to be provided by the organisation,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Life cycle management – how Council will manage its existing and future assets to provide defined levels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

A road map for preparing an asset management plan is shown on the following page.

[1] IPWEA, 2011, Sec 4.2.6, *Example of an Asset Management Plan Structure*, pp 4|24 – 27.
[2] Based on IPWEA, 2011, IIMM, Sec 1.2 p 1|7.

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11.



2.4 Community Consultation

Future revisions of the individual asset management plans will incorporate community consultation on service levels and costs of providing the service. This will assist the Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability and willingness to pay for the service.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

The outcomes of the community consultation conducted as part of the development of the Strategic Community Plan have informed this 'core' asset management plan.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the organisation's vision, objectives and desired outcomes.

Our vision is:

"A wonderful place to live, work, invest and visit with the community working together to achieve shared objectives"

Relevant organisational objectives and how these are addressed in this asset management plan are included in the individual asset management plans for each class of asset.

3.3 Community Levels of Service

Service levels are defined service levels in two terms, customer levels of service and technical levels of service.

Community Levels of Service measure how the community receives the service and whether the organisation is providing community value.

Community levels of service measures used in the asset management plan are:

Quality	How good is the service?
Function	Does it meet users' needs?
Capacity/Utilisation	Is the service over or under used?

Note: The organisation's current and expected community & technical service levels are detailed in each asset management plan for each asset class.

3.4 Technical Levels of Service

Technical Levels of Service - Supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the organisation undertakes to best achieve the desired community outcomes and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as opening hours, cleansing, mowing grass, energy, inspections, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (e.g. road patching, unsealed road grading, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

- Upgrade – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).

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

4. FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecast

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.

4.3 Demand Impact on Assets

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

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand Factor	Present Position	Projection	Impact on Services
Population	Present population estimated as at 2016 approx. 5940	Increase of 12.96% from 2016 (5,940) to 2026 (6,710) Projected increase of 1.3% per annum[4]	Small increase in demand for all services - **Neutral**
Demographic	00-09 640 10-19 850 20-39 1070 40-59 1760 60-79 1440 80+ 180	00-09 680 10-19 840 20-39 1360 40-59 1710 60-79 1740 80+ 380 Projected increase in the : 20-29 age group (27.1%), 60-79 age group (20.8%), 80+ age group (111.1%) and minor decreases in the 10-19 & 40-59 age groups (-1.2% & -2.8% respectively).	Increasing population in the 60+ age group (+132.9% over 10 years or +13.29% pa) will impact in the area of disability access and mobility for the aged – **Increase**. Increases in the 20-39 age group (+27.1% or +2.71% pa) will also impact on the provision of infrastructure services to meet increased demand from a younger more mobile population – **Increase**.
Seasonal		The population increases during fruit harvesting season with transient workers. The size of the seasonal change is not currently known	Increased demand for short stay, camping and caravan facilities, however current facilities should be able to accommodate any slight increase – **Neutral**.
Tourism		The population Increases during peak tourist periods. The size is not known	Future possible increased demand for short stay, caravan and camping facilities and use of ablution facilities may occur, however current facilities should be able to

[3] IPWEA, 2011, IIMM, p 2.22
[4] ABS Population projection 2013

			accommodate any slight increase – **Neutral**.
Climate Change		**Temperatures:** Based on the Bureau of Meteorology (BOM) climate change charts & graphs, it is predicted that maximum temperatures will increase at a similar rate as current trends indicate (since 1910 the annual temperature anomaly has increased by approximately 1.25^{O}C to date. The minimum temperature anomaly over the same period has also increased by approximately 1.0^{o}C. The trend in the number of colds days since 1970 indicates that days are generally getting warmer with warmer nights resulting in longer growing seasons in the south west. **Rainfall:** The number of consecutive wet days is also reducing as is the number of wet days. The intensity of low pressures systems is increasing since 1950. The overall annual rainfall has decreased on average by approximately 150mm since 1910.	**Temperatures:** With increasingly hotter days during the summer, warmer days and milder nights during winter, there may be an increased demand for more asset maintenance or upgrades. Drier & hotter conditions may contribute to faster than normal deterioration of asset infrastructure. **Neutral.** **Rainfall:** With rainfall decreasing by approximately 150mm over the past 115 years, and with the intensity of low pressure systems increasing, more extreme weather events will continue to occur with local governments in the south west having to adapt to manage possible increased damage to assets as result of more violent weather events - **Increase**.

Note: Analysis of the demand drivers associated with an individual asset classes is included within each individual asset management plan as are associated graphs to support the analysis.

4.4 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.

Note: Opportunities identified to date for demand management are shown in the individual Asset Management Plans for each asset class.

4.5 Asset Programs to meet Demand

New assets constructed/acquired by the organisation are discussed in Section 5.4.

Acquiring these new assets will commit the organisation to fund ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs in Section 5.

5. LIFECYCLE MANAGEMENT PLAN

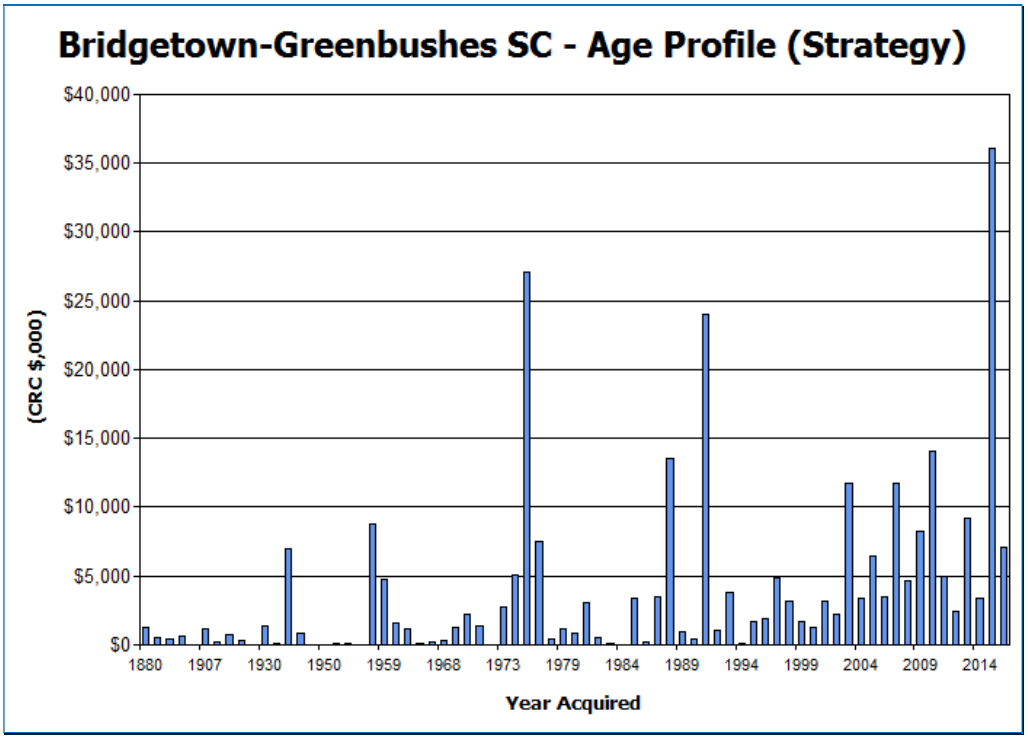
The lifecycle management plan details how the organisation plans to manage and operate the assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The age profile of the assets included in this AM Plan is shown in Figure 2.

Figure 2: Asset Age Profile



5.1.2 Asset condition

Condition is currently determined via ad hoc inspections by department staff. Condition data is also provided every three years during independent assessment for fair value accounting purposes. It is identified that a formal condition assessment process is required to be implemented for all Council assets.

Note: The condition profile of our assets are shown in each asset management plan for each asset class.

5.1.3 Asset valuations

The value of assets recorded in the asset register as at 30 June 2016 covered by this asset management plan is shown below. Assets are valued at current replacement cost.

Current Replacement Cost	$283,368,000
Annual Depreciation Expense	$ 3,613,000

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	1.6%
Rate of Annual Asset Renewal (Capital Renewal Expenditure/Depreciable amount)	0.9%

In 2017 the organisation plans to renew assets at 59.7% of the rate they are being consumed and will be increasing its asset stock by 0.3% in the year.

5.2 Infrastructure Risk Management Plan

An assessment of risks associated with service delivery from infrastructure assets has identified 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 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, together with the estimated residual risk after the selected treatment plan is operational are summarised in Table 5.2. These risks are reported to management and Council.

Table 5.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Asset management system	Inconsistent LOS delivery	High	Develop asset hierarchy	Low	Nil
Asset management - condition rating and inspections	Assets become unsafe, and/or are replaced at sub-optimum times	Very High	Develop and implement annual inspection program	Low	Nil
Levels of Service	Levels of service not acceptable to the community	High	Undertake community consultation to develop levels of service and incorporate into integrated planning documents	Low	$TBC
Forward works planning and budgeting	Lack of funding, insufficient resources being available to deliver agreed service levels	High	Undertake annual community survey on levels of service, review resources available to meet expected LOS, provide additional resources or adjust levels of service in consultation with the community.	Low	$TBC
Asset management - strategic	Asset management system breakdowns due to lack of focus by staff	Very High	Provide training to relevant staff and Councillors. Include KPI's in staff job descriptions and annual performance reviews	Low	$TBC

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

5.3 Renewal/Replacement Plan

Renewal and replacement 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 or lesser required service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new works expenditure.

5.3.1 Renewal plan

Note: The useful lives of assets used to develop projected asset renewal expenditures are shown in the individual Asset Management Plans for each asset class.

5.3.2 Renewal and Replacement Strategies

The organisation will plan capital renewal and replacement projects to meet level of service objectives and minimise infrastructure service risks by:

- Planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner,
- Undertaking project scoping for all capital renewal and replacement projects to identify:
    - the service delivery 'deficiency', present risk and optimum time for renewal/replacement,
    - the project objectives to rectify the deficiency,
    - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency,
    - and evaluate the options against evaluation criteria adopted by the organisation, and
    - select the best option to be included in capital renewal programs,
- Using 'low cost' renewal methods (cost of renewal is less than replacement) wherever possible,
- Maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council,
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs,
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required ,
- Review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

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

It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

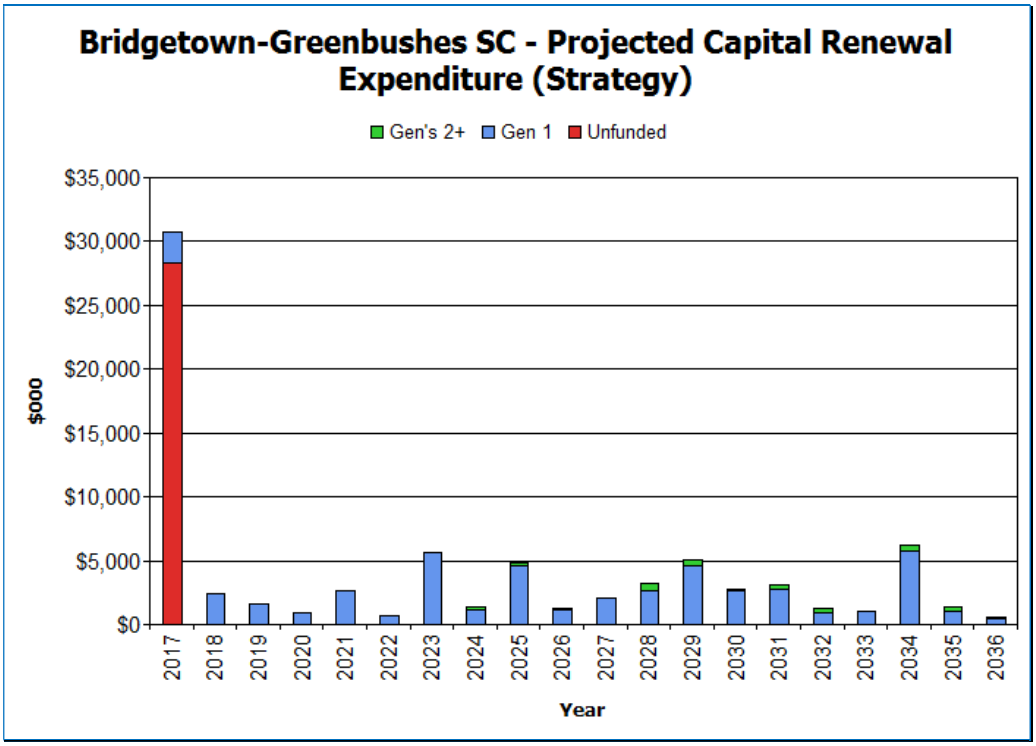
- Have a high consequence of failure,
- Have a high utilisation and subsequent impact on users would be greatest,
- The total value represents the greatest net value to the organisation,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Where replacement with modern equivalent assets would yield material savings.[6]

[5] IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.
[5] Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.
[6] Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

5.3.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5. Note that all amounts are shown in real values.

Fig 5: Projected Capital Renewal and Replacement Expenditure



Deferred renewal and replacement, i.e. those assets identified for renewal and/or replacement and not scheduled in capital works programs are to be included in the risk analysis process in the risk management plan.

Renewals and replacement expenditure in the organisation's capital works program will be accommodated in the long term financial plan.

5.4 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 organisation from land development.

5.4.1 Capital Investment Strategies

The organisation will plan capital upgrade and new projects to meet level of service objectives by:

- Planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner,
- Undertake project scoping for all capital upgrade/new projects to identify:
    - the service delivery 'deficiency', present risk and required timeline for delivery of the upgrade/new asset,
    - the project objectives to rectify the deficiency including value management for major projects,
    - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency,
    - management of risks associated with alternative options,
    - and evaluate the options against evaluation criteria adopted by Council, and
    - select the best option to be included in capital upgrade/new programs,

- Review current and required skills base and implement training and development to meet required construction and project management needs,
- Review management of capital project management activities to ensure Council is obtaining best value for resources used.

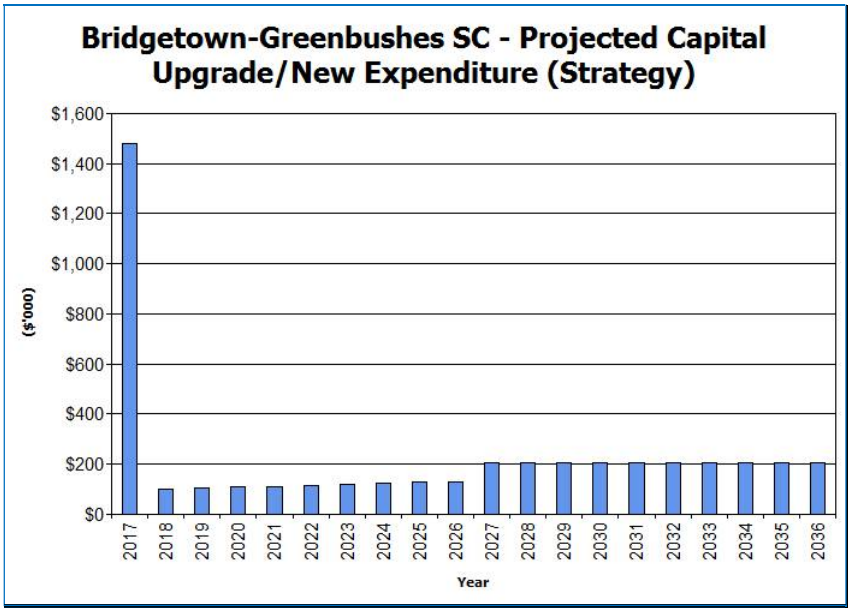
5.4.2 Summary of future upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in Fig 6.

Note: The projected upgrade/new capital works programs are shown in individual Asset Management Plans.

All amounts are shown in real values.

Fig 6: Projected Capital Upgrade/New Asset Expenditure



Expenditure on new assets and services in the organisation's capital works program will be accommodated in the long term financial plan.

5.5 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation.

At present no properties have been identified for future disposal during the term of the AMP. This has been listed as an improvement action.

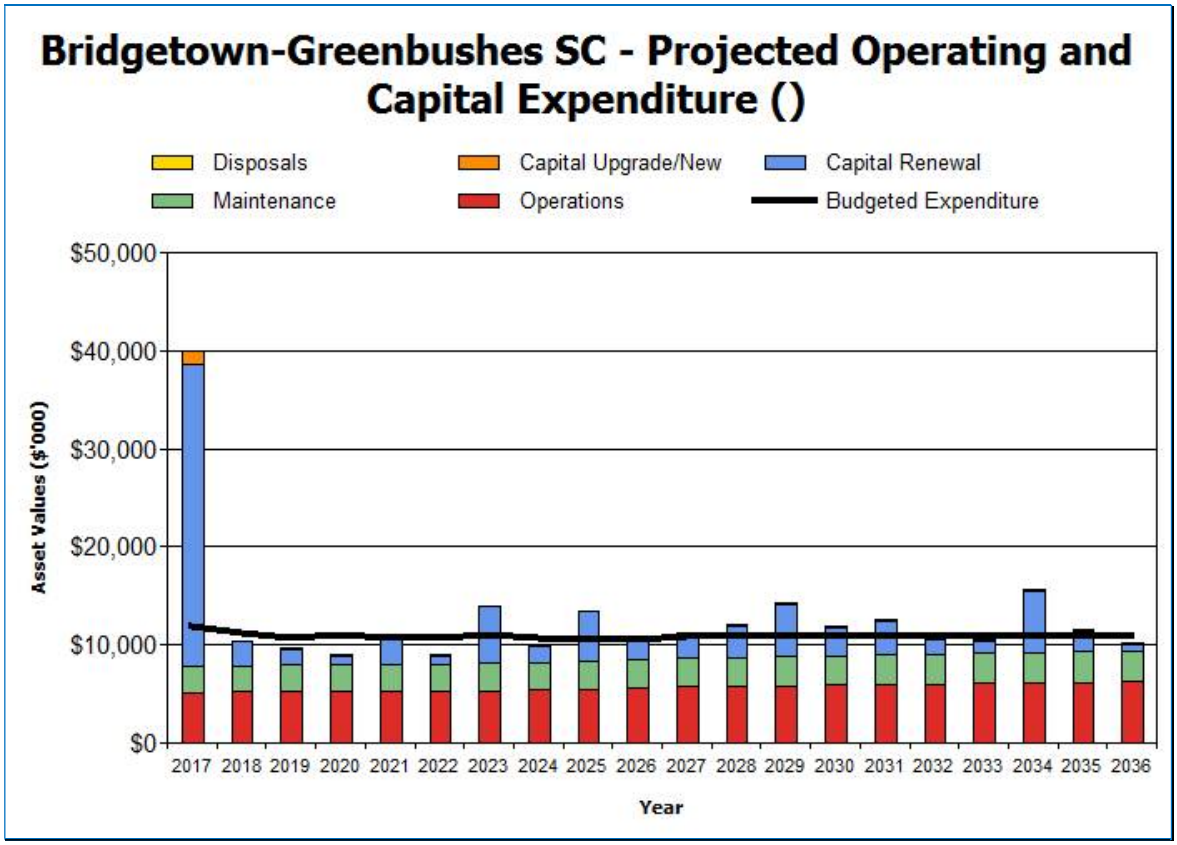
6. FINANCIAL SUMMARY

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 asset condition, desired levels of service and current and projected future asset performance.

6.1 Financial Statements and Projections

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

Fig 7: Projected Operating and Capital Expenditure



6.1.1 Sustainability of service delivery

There are four key indicators for service delivery sustainability that have been considered in the analysis of the services provided by Council's assets, these being the asset renewal funding ratio, long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[7] 25%[8]

The Asset Renewal Funding Ratio is the most important indicator and reveals that over the next 10 years, Council is forecasting that it will have 25% of the funds required for the optimal renewal and replacement of its assets.

It should be noted however, that until Council's operating and maintenance costs are projected over the next 10 years as part of the LTFP, the above graph and ratio may not be held to be reliable as the budget projection is based on the 2016-17 budget expenditure.

[7] AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16
[8] DLGC_LG_Operational Guideline_18 – Target ratio is between 75% and 95%

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 asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is $11,832,000 per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure over the 10 year planning period is $9,267,000 per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by this asset management plan is -$2,565,000 per year (-ve = gap, +ve = surplus).

Life cycle expenditure is 78% of life cycle costs.

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.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is $13,447,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is $9,267,000 on average per year giving a 10 year funding shortfall of -$4,180,000 per year. This indicates that Council expects to have 69% of the projected expenditures needed to provide the services documented in the asset management plan.

Medium Term – 5 year financial planning period

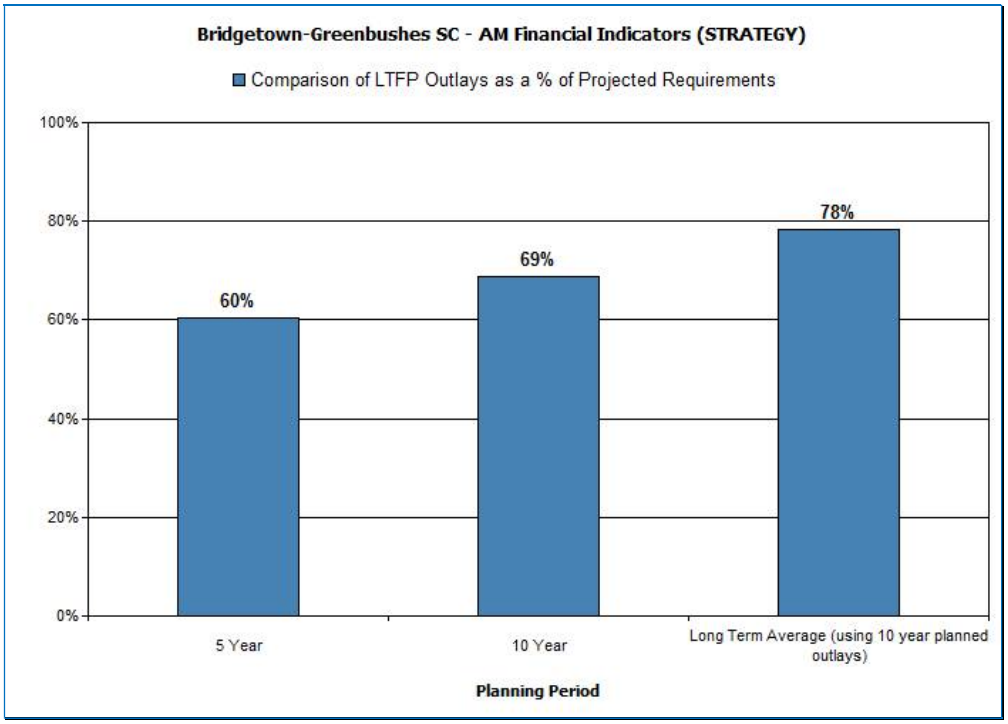
The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is $15,631,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is $9,446,000 on average per year giving a 5 year funding shortfall of -$6,184,000 per year. This indicates that Council expects to have 60% of projected expenditures required to provide the services shown in this asset management plan.

Asset management financial indicators

Figure 7A shows the asset management financial indicators over the 10 year planning period and for the long term life cycle.

Figure 7A: Asset Management Financial Indicators



Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 for the first years of the asset management plan and ideally over the 10 year life of the Long Term Financial Plan.

Table 6.1.1 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in long term financial plan. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets.

Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall

Year End June 30	Projected Renewals ($'000)	LTFP Renewal Budget ($'000)	Renewal Financing Shortfall (- gap, + surplus) ($'000)	Cumulative Shortfall (- gap, + surplus) ($'000)
2017	$30,723	$2,158	$-28,565	$-28,565
2018	$2,412	$1,753	$-659	$-29,224
2019	$1,650	$1,332	$-318	$-29,542
2020	$963	$1,552	$589	$-28,952
2021	$2,783	$1,347	$-1,436	$-30,388
2022	$868	$1,251	$383	$-30,005
2023	$5,758	$1,619	$-4,139	$-34,144
2024	$1,599	$1,343	$-256	$-34,401
2025	$5,028	$1,069	$-3,959	$-38,360
2026	$1,820	$1,069	$-751	$-39,111
2027	$2,340	$1,407	$-934	$-40,044
2028	$3,199	$1,407	$-1,792	$-41,836

2029	$5,290	$1,407	$-3,884	$-45,720
2030	$2,751	$1,407	$-1,344	$-47,064
2031	$3,353	$1,407	$-1,946	$-49,010
2032	$1,503	$1,407	$-96	$-49,106
2033	$1,235	$1,407	$172	$-48,935
2034	$6,185	$1,407	$-4,778	$-53,712
2035	$2,006	$1,407	$-599	$-54,311
2036	$626	$1,407	$781	$-53,531

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

6.1.2 Projected expenditures for long term financial plan

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

Expenditure projections are in 2016/2017 real values.

Table 6.1.2: Projected Expenditures for Long Term Financial Plan ($000)

Year	Operations	Maintenance	Projected Capital Renewal	Capital Upgrade/New	Disposals
2017	$5,167	$2,651	$30,723	$1,479	$0
2018	$5,210	$2,694	$2,412	$102	$0
2019	$5,227	$2,705	$1,650	$105	$0
2020	$5,248	$2,717	$963	$108	$0
2021	$5,274	$2,731	$2,783	$112	$0
2022	$5,305	$2,747	$868	$115	$0
2023	$5,340	$2,765	$5,758	$119	$0
2024	$5,425	$2,801	$1,599	$123	$0
2025	$5,518	$2,840	$5,028	$127	$0
2026	$5,619	$2,882	$1,820	$131	$0
2027	$5,728	$2,927	$2,340	$208	$0
2028	$5,784	$2,955	$3,199	$208	$0
2029	$5,841	$2,982	$5,290	$208	$0
2030	$5,897	$3,010	$2,751	$208	$0
2031	$5,953	$3,038	$3,353	$208	$0
2032	$6,009	$3,065	$1,503	$208	$0
2033	$6,065	$3,093	$1,235	$208	$0
2034	$6,121	$3,121	$6,185	$208	$0
2035	$6,177	$3,148	$2,006	$208	$0
2036	$6,233	$3,176	$626	$208	$0
All dollar values are in ($'000)'s					

6.2 Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale[9] in accordance with Table 6.2.

Table 6.2: Data Confidence Grading System

Confidence Grade	Description
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy ± 40%
E Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 6.2.1.

Table 6.2.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Reliable	Main drivers currently influencing demand within Shire – reviewed at the time of reviewing AMP
Growth projections	Highly reliable	Based on ABS & Department of Planning projection
Operations expenditures	Reliable	Projections entirely based on historical levels of expenditure
Maintenance expenditures	Uncertain	Projections are based on preliminary assessment of asset conditions
Projected Renewal expenditures. - Asset values	Uncertain	Projections are based on preliminary assessment of asset conditions
- Asset residual values	Reliable	Residual values based on a high level assessment of the building
- Asset useful lives	Very uncertain	Useful lives and age of individual assets are to be reviewed and updated where necessary to better reflect actual condition of assets
- Condition modelling	Unknown	Condition modelling may be implemented once accurate condition data is known
- Network renewals	Very uncertain	Renewal expenditures not supported by data held - primarily re-active renewal process is utilised
- Defect repairs	Unknown	Not currently used
Upgrade/New expenditures	Very uncertain	Very little exists to support future requirements
Disposal expenditures	Unknown	No asset disposal identification process has been undertaken

Over all data sources the data confidence is assessed as medium confidence level for data used in the preparation of this AM Plan.

[9] IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 7.1.

Table 7.1: Improvement Plan

Task No	Task	Responsibility	Resources Required
1	Develop a process for community engagement on Levels of Service including a survey to determine community service level expectations delivered via Council's assets	Senior Management Group (SMG)	Staff time/ Consultants
2	Implement a suitable system and process to record property utilisation and booking request levels	SMG	Staff time
3	Develop a hierarchy for all assets identifying parent/child relationships, and link to Levels of Service	SMG/Asset Management Team (AMT)	Staff time
4	Develop a data collection procedure to ensure repeatability and on-going improvement of condition data collection and modelling processes	AMT	Staff time
5	Implement the condition inspection programme for all assets	SMG/AMT	Staff time
6	Greater degree of componentisation in the condition rating process	SMG/AMT	Staff time
7	Review the Shire's year acquired date for all assets	SMG/AMT	Staff time
8	Determine useful lives and remaining useful lives of Council's assets and adopt consistent unit rates	SMG/AMT	Staff time
9	Configure the Shire's corporate financial system to record asset expenditure at the individual asset level according to maintenance type and activity	SMG/AMT	Staff time
10	Identify and improve capture of operational expenditure in the organisation financial system to enable more accurate reporting of operational expenditure	SMG/AMT	Staff time
11	Develop and implement safety and maintenance inspection programmes and methodologies for all assets	SMG/AMT	Staff time
12	Identify and assess critical assets for failure modes	SMG/AMT	Staff time
13	Identify assets for possible future disposal	SMG/AMT	Staff time
14	Develop staff AM performance measures and link KPI's to individual job descriptions	Human Resource Officer	Staff time
15	Provide asset management training to relevant staff and Councillors	Human Resource Officer	Training Course Fees ($20,000)
16	Determine split in costs between renewal and upgrades for all future upgrades in Council's planning documents	SMG/AMT	Staff time
17	Develop a long term capital works programme after undertaking condition inspections	SMG/AMT	Staff time
18	Develop a ranking criteria for assessment and selection of new/upgrade assets in forward planning documents	AMT	Staff time
19	Analyse demand impacts as a result of increased tourism	SMG/AMT	Staff time
20	Analyse demand impacts as a result of age demographic changes	SMG/AMT	Staff time
21	Create Sustainable Assets Policy and an associated action plan	SMG/AMT	Staff time
22	Investigate alternative power generation technologies to help reduce the Shire's carbon footprint and operating costs	SMG/AMT	Staff time

23	Investigate and implement a suitable asset management software program to consolidate all asset classes into one integrated database	SMG/AMT	Staff time/ Consultants
24	Develop long term financial projections for Operational, Maintenance and capital costs in line with the Long Term Financial Plan requirements	SMG/AMT	Staff time

7.2 Monitoring and Review Procedures

The AM Plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within 12 months of each Council election.

7.3 Performance Measures

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

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into Council's long term financial 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,
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the Council's Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

8. REFERENCES

IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM

IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.

IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMG.

IPWEA, 2011, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM