

Mid Murray Council



Bridges & Major Culverts

Asset Management Plan (Concise)



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NAMS.PLUS Asset Management Plan Templates

NAMS.Plus offers two Asset Management Plan templates – ‘Concise’ and ‘Comprehensive’.

The Concise template is appropriate for those entities who wish to present their data and information clearly and in as few words as possible whilst complying with the ISO 55000 Standards approach and guidance contained in the International Infrastructure Management Manual.

The Comprehensive template is appropriate for those entities who wish to present their asset management plan and information in a more detailed manner.

The entity can choose either template to write/update their plan regardless of their level of asset management maturity and in some cases may even choose to use only the Executive Summary.

The illustrated content is suggested only and users should feel free to omit content as preferred (e.g. where info not currently available).

The concise Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

This is the **Concise** Asset Management Plan template.

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1 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

This asset management plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services over a 20-year planning period.

This plan covers the infrastructure assets that provide continuous vehicle access on the road network over natural water courses or depressions.

1.2 Asset Description

These assets include:

The asset class comprises of:

- Bridges
- Major Culverts

These infrastructure assets have significant value estimated at \$4.9 million.

1.3 Levels of Service

Our present funding levels are insufficient to continue to provide existing services at current levels in the medium term.

The main services consequences are:

- Bridge failure and closure
- Subsequent road closure
- Limiting bridge loads and diverting heavy vehicles to alternate routes

1.4 Future Demand

Council does not consider any significant increase in demand for new bridges or major culverts.

1.5 Lifecycle Management Plan

What does it Cost?

This document, in its draft form, outlines two possible financial scenarios based on a recent condition assessment conducted by Wallbridge & Gilbert.

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 \$1,472,000 or \$147,000 on average per year for scenario one or \$1,321,000 or \$132,000 on average per year for scenario two.

1.6 Financial Summary

What we will do

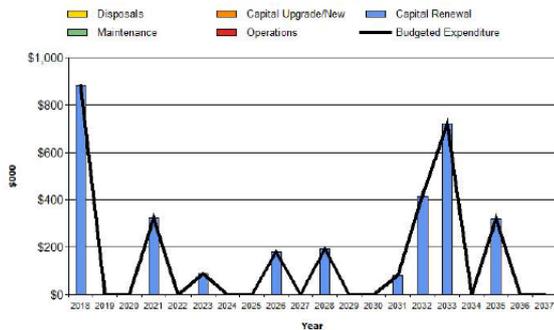
Estimated available funding for this period is undetermined at this stage. The service level target for this asset class should be no less than 100%. Any reduction in service could result in closure on some of the bridges and consequently roads. This report has assumed funding will be made available, regardless of which scenario Council decides to fund.

The infrastructure reality is that only what is funded in the long term financial plan can be provided. The emphasis of the Asset Management Plan is to communicate the consequences that this will have on the service provided and risks, so that decision making is "informed".

The projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan. This is shown in the figure below.

**Projected Operating and Capital Expenditure
(Scenario one)**

**Mid Murray - Projected Operating and Capital Expenditure
(Bridges_S1_V1)**



**Projected Operating and Capital Expenditure
(Scenario two)**

**Mid Murray - Projected Operating and Capital Expenditure
(Bridges_S2_V1)**

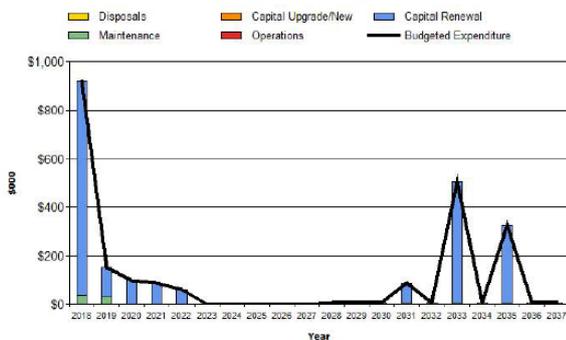


Figure Values are in current (real) dollars.

We plan to provide Bridges & Major Culverts services for the following:

- Operation, maintenance, renewal and upgrade of bridges to meet service levels set by in annual budgets.
- Eudunda Rd Bridge, Milendella Rd Bridge and a number of major maintenance requirements within the 10-year planning period.

Managing the Risks

Our present funding levels are have been assumed as sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Reducing speeds and load levels on a number of bridges, reducing access to freight and farming equipment
- Ultimately the closure of some bridges and consequently roads

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

- Pursuing scenarios two and investing in short term maintenance in order to extend to lives for a number of bridges
- A number of these recommended maintenance tasks would be considered capital investment due to their cost and their influence on each bridges life

1.7 Asset Management Practices

Our systems to manage assets include:

- Synergy
- QGIS/GIS Cloud
- NAMS

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

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, 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'.

Method one was used for this asset management plan with two potential scenarios produced for Council to consider.

2. INTRODUCTION

2.1 Background

This asset management plan communicates the actions required for the responsive management of assets (and services provided from assets), compliance with regulatory requirements, and funding needed to provide the required levels of service over a 20-year planning period.

The asset management plan is to be read with the Asset Management Policy and Asset Management Strategy where these have been developed along with other key planning documents:

- Wallbridge & Gilbert, Bridges Condition Assessment Report (Rev B, 2016)

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide vehicular access over watercourses and depressions.

Table 2.1: Assets covered by this Plan

Asset_ID	Asset Name	Replacement Cost
VB_1	ST KITTS BRIDGE	\$180,000
VB_2	EUDUNDA RD BRIDGE	\$470,000
VB_3	DUTTON MAIL RD BRIDGE	\$322,000
VB_4	TRURO RD BRIDGE	\$265,000
VB_5	EAST TCE BRIDGE	\$195,000
VB_6	KEYNETON RD BRIDGE	\$285,000
VB_7	BLACK HILL RD BRIDGE	\$430,000
VB_8	OFF NINTH ST BRIDGE	\$90,000
VB_9	MILENELLA RD BRIDGE	\$410,000
VB_10	NUSKE RD BRIDGE	\$290,000
VB_12	BRINKWORTH RD BRIDGE 1	\$415,000
VB_13	BRINKWORTH RD BRIDGE 2	\$620,000
VB_14	RIVER RESERVE RD BRIDGE	\$320,000
VB_15	LEN WHITE RESERVE BRIDGE	\$80,000
VB_16	SAUNDERS CREEK CULVERT	\$205,911
VB_17	MURRAYLANDS RD CULVERT	\$307,084

2.2 Goals and Objectives of Asset Ownership

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
- Linking to a long-term financial plan which identifies required, affordable expenditure and how it will be allocated.

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

- International Infrastructure Management Manual 2015 ¹
- ISO 55000²

2.3 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual³. Core asset management is a 'top down' approach where analysis is applied at the system or network level. An 'advanced' asset management approach uses a 'bottom up' approach for gathering detailed asset information for individual assets.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

We currently have no research on customer expectations. This will be investigated for future updates of the asset management plan.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the Mid Murray Councils vision, mission, goals and objectives.

Our vision is:

We celebrate our rich and diverse country lifestyle built on a strong economy. Our aim is to encourage a continuing vibrant community, family spirit, the ongoing protection of the River Murray and maintain our precious national, cultural and built heritage.

The Mid Murray is a model of sustainable prosperity. Strong jobs growth, industry attraction and skills development is balanced with our commitment to responsible environmental management and protection.

Our mission is:

Proactive in planning for and facilitating business and industry investment and economic growth

Committed to the protection of our natural and built environment

Open and inclusive in encouraging community involvement and partnership in Council plans and policies

Advocates for and providers of services and facilities that support community wellbeing

An efficient and responsible manager of Council assets, infrastructure and resources in partnership with the community

A professional organisation that attracts and retains high quality staff and Elected Members

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

² ISO 55000 Overview, principles and terminology

³ IPWEA, 2015, IIMM.

Through active community partnerships, the Mid Murray Community Plan makes change and delivers real results by:

- Collaborative, sustainable community partnerships and development
- Active township planning and implementation
- Targeted economic development and investment attraction
- Active environmental education and action
- Responsible resource use and management

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

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. These include:

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Development Act 1993	Identifies the laws and regulations that must be considered when undertaking planning for building and construction development.
Local Government (Financial Management) Regulations 2011	The driver for development of a strategic management plan which comprises of asset management plans and long-term financial plan
Work Health and Safety Act 2012	The act provides the framework for the welfare, health and safety of persons at work
Australian Accounting Standards	Establishes the financial reporting standards for the valuation, revaluation and depreciation of assets

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3.4 Customer Levels of Service

Service levels are defined service levels in two terms, customer levels of service and technical levels of service. These are supplemented by organisational measures.

Customer Levels of Service measure how the customer receives the service and whether value to the customer is provided. For this particular asset class, it has been assumed that Councils customers will expect no closures or imposed limitations with current services levels.

Table 3.4: Customer Level of Service

3.5 Technical Levels of Service

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

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

- Operations – the regular activities to provide services. For this asset class, there is little ongoing operational expenditure. This plan has factored in the expense to reinspect the asset class for condition by a qualified consultant every 4 years.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade/New – 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.⁴

Table 3.5 shows the technical levels of service expected to be provided under this AM Plan. The 'Desired' position in the table documents the position being recommended in this AM Plan.

Table 3.5: Technical Levels of Service

Service Attribute	Service Activity Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **
TECHNICAL LEVELS OF SERVICE				
Operations				
	To ensure this asset class remains operational, condition inspections will be conducted every four years		No current system but condition inspection recently conducted	Condition inspection every four years by a qualified consultant
		Budget	\$7,500 Annually	\$7,500 Annually
Maintenance*				
	Impending maintenance has been identified by the recent condition assessment		Leave unmaintained	Follow suggested maintenance issues identified by Wallbridge & Gilbert

⁴ IPWEA, 2015, IIMM, p 2 | 28.

Service Attribute	Service Activity Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **
		Budget	\$0	\$71,000 for the next two years
Renewal				
	Ensure bridges and culverts remain operational and support the services of the traffic intended		Not measured	To follow the findings of Wallbridge & Gilbert
		Budget	Unknown but without short term maintenance estimated renewals for the next 20 years will be \$3,202,000	\$1,975,000
Upgrade/New				
The two bridges with immediate renewal requirements may be considered an upgrade as the current structure does not meet the intended vehicle use of each road, being B-Double standard. In the case of this plan, these structures have been budgeted as renewals.				

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time. Review and establishment of the agreed position which achieves the best balance between service, risk and cost is essential.

4. FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets 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 use of assets are shown in Table 4.3.

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
Increased heavy vehicle use	Milendella Rd & Eudunda Rd Bridges do not currently meet these requirements	This plan anticipates the proposed upgrade/renewal of these bridges in the short term	Both roads will allow continued use of B-Double vehicles

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 can include non-asset solutions, insuring against risks and managing failures.

4.5 Asset Programs to meet Demand

Council does not anticipate acquiring or constructing any new assets to meet demand. Council believes the current asset class is sufficient to meet demand on the network.

5. LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

The asset class is predominately vehicular bridges, with two major culverts and two pedestrian bridges.

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

Figure 2: Asset Age Profile

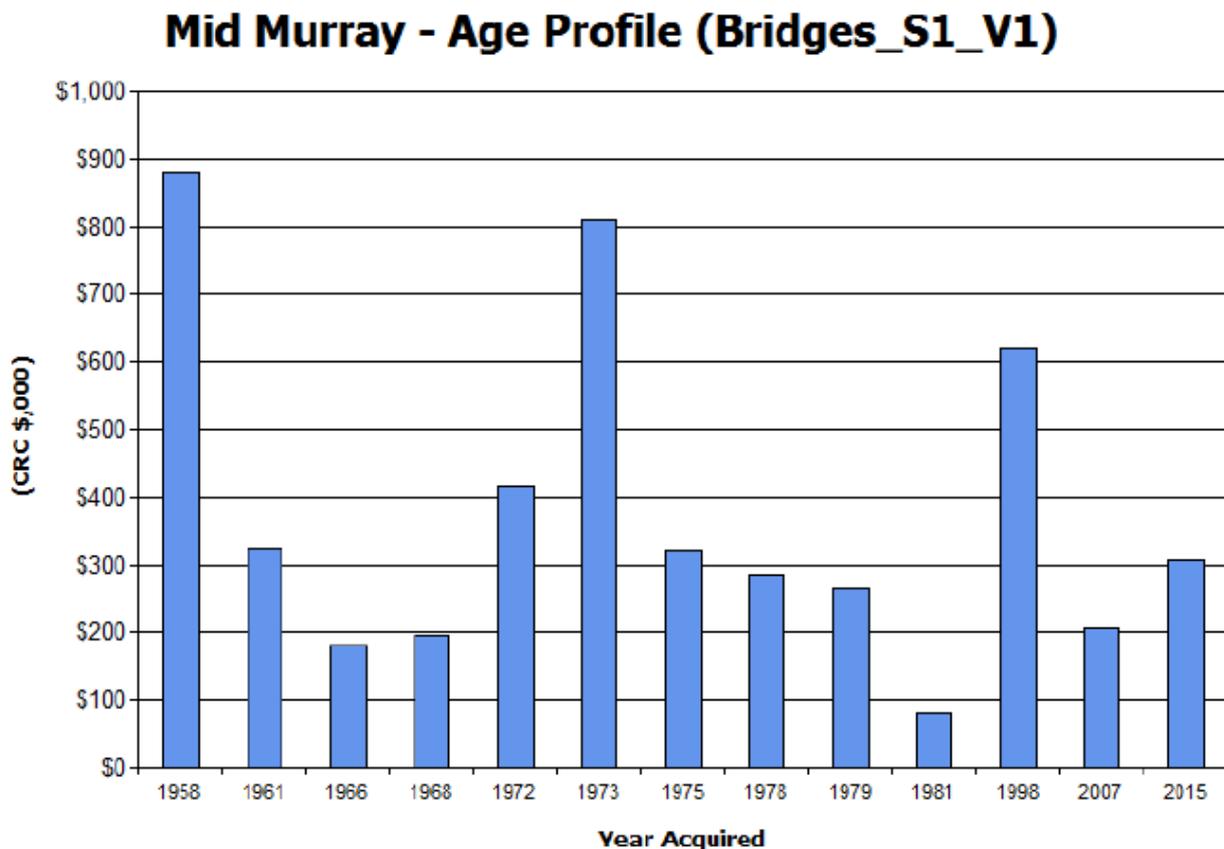


Figure Values are in current (real) dollars.

5.1.2 Asset capacity and performance

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

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

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Milendella Rd Bridge	Bridge requires renewal and minor upgrade to meet B-Double standard
Eudunda Rd Bridge	Bridge requires renewal and minor upgrade to meet B-Double standard

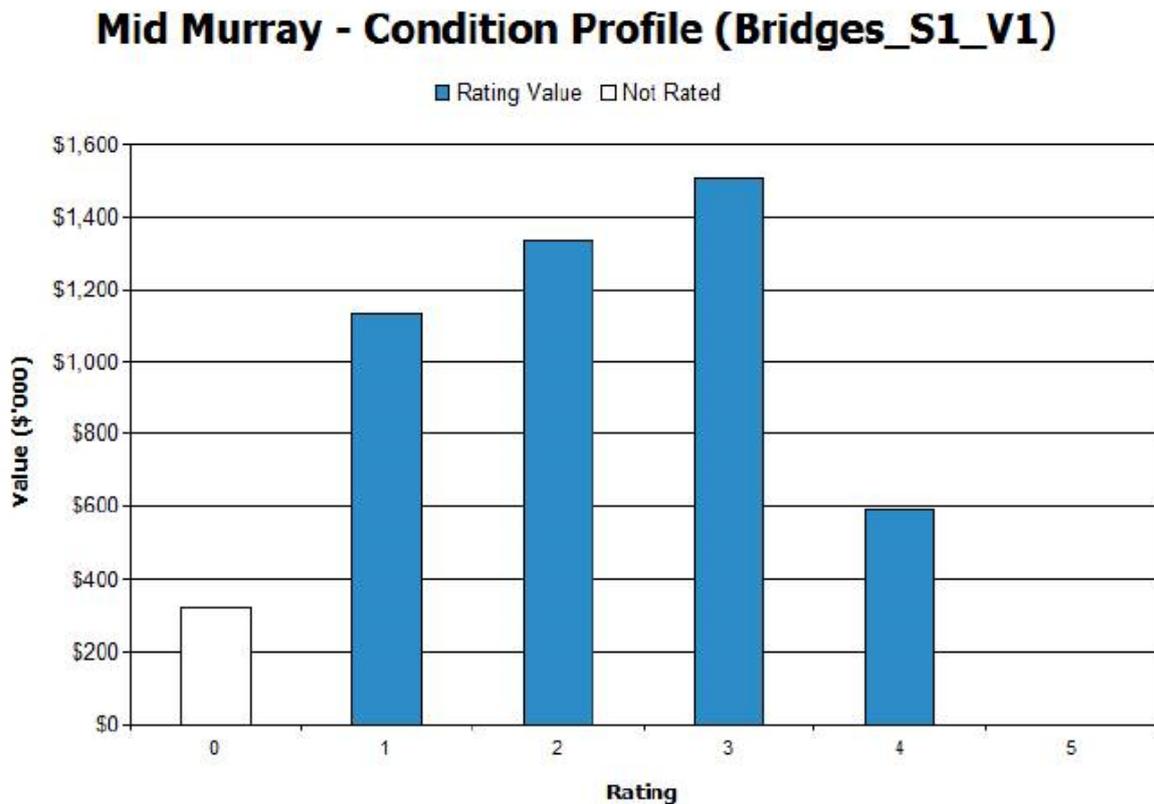
The above service deficiencies were identified from the Wallbridge & Gilbert Condition Report.

5.1.3 Asset condition

Condition will be monitored by routinely engaging with a qualified consultant. Condition assessments require a specialised skill-set not currently available to Council internally.

The condition profile of our assets is shown in Figure 3.

Fig 3: Asset Condition Profile



Condition is measured using a 1 – 5 grading system⁵ as detailed in Table 5.1.3.

Table 5.1.3: Simple Condition Grading Model

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

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety and amenity, e.g. cleaning, street sweeping, utilities costs and street lighting.

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, e.g. road patching.

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.

Maintenance expenditure is shown in Table 5.2.1.

Table 5.2.1: Maintenance Expenditure Trends

Year	Maintenance Budget \$
2016/2017	\$NIL
2015/2016	\$NIL
2014/2015	\$NIL

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

Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2018 dollar values (i.e. real values).

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

Figure 4: Projected Operations and Maintenance Expenditure (Scenario Two only; NIL Expenditure for Scenario One)

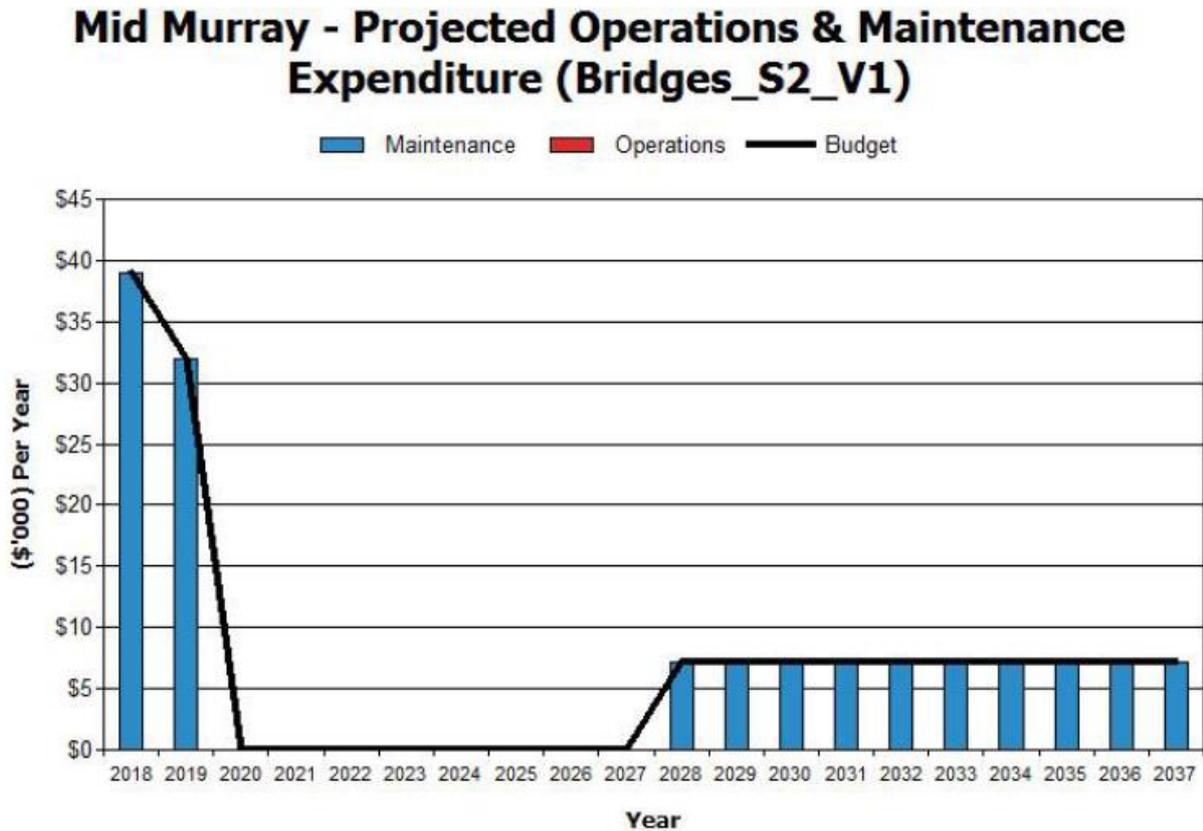


Figure Values are in current (real) dollars.

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

Maintenance is funded from the operating budget where available. This is further discussed in Section 7.

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 service potential. Work over and above restoring an asset to original service potential is considered to be an upgrade/expansion or new work expenditure resulting in additional future operations and maintenance costs.

Assets requiring renewal/replacement are identified from one of three methods provided in the ‘Expenditure Template’.

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, 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'.

Method 1 as used for this asset management plan.

5.3.1 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).⁶

It has been deemed that all required Bridge renewals will be treated with equal importance. To mitigate risk and ensure ongoing usage of the bridge and road network involved, each proposed bride renewal will be considered when required.

5.3.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time when the asset stock increases. The expenditure is required is shown in Fig 5. Note that all amounts are shown in current (real) dollars.

The projected capital renewal and replacement program is shown in Appendix B.

⁶ IPWEA, 2015, IIMM, Sec 3.4.4, p 3 |91.

Fig 5.1: Projected Capital Renewal and Replacement Expenditure (Scenario One)

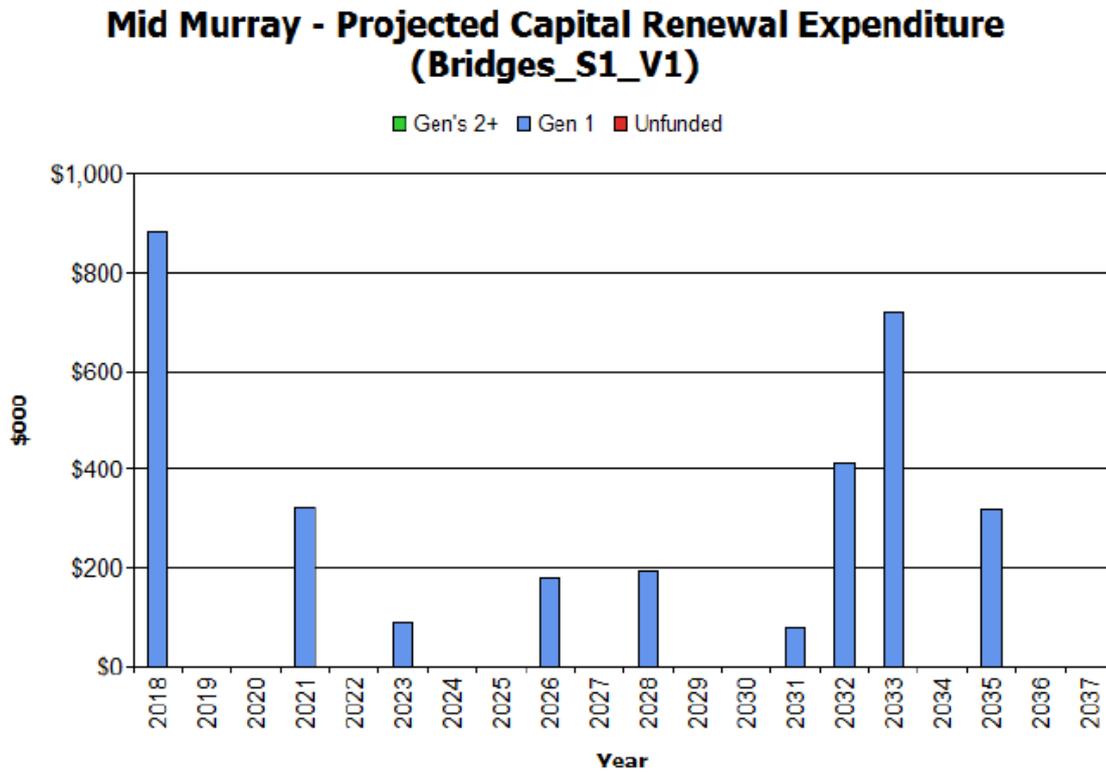


Fig 5.2: Projected Capital Renewal and Replacement Expenditure (Scenario Two)

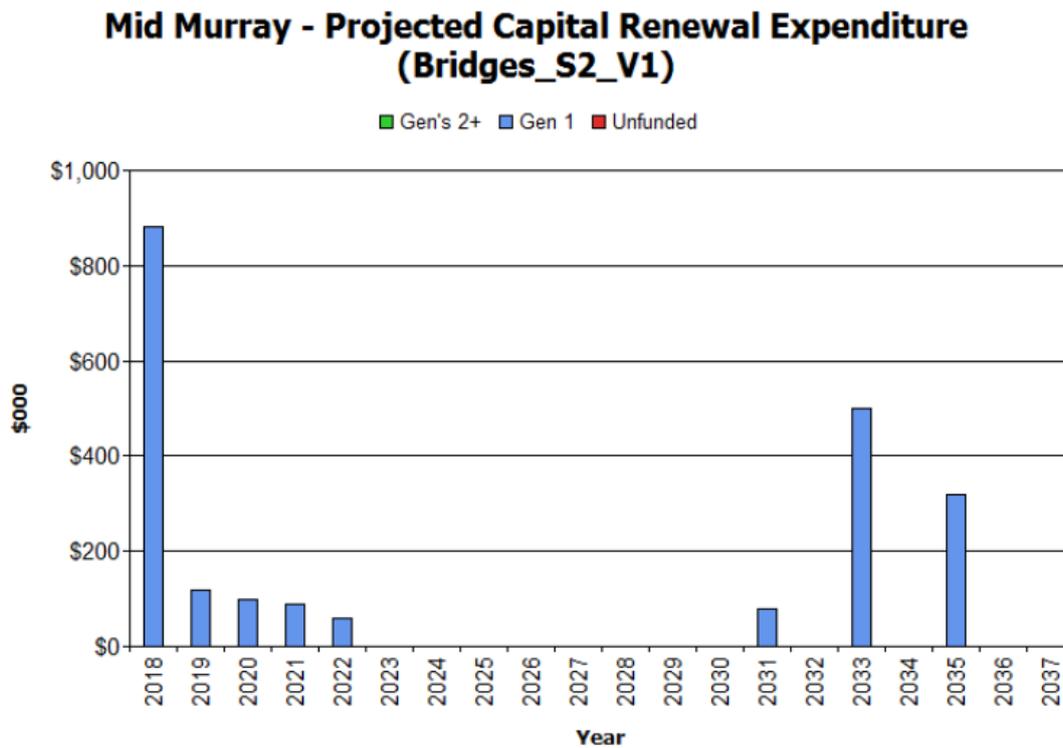


Figure Values are in current (real) dollars.

By investing early in minor renewals (see Scenario two), Council could extend the useful lives of a number of bridges and defer a large proportion of renewal expenditure. This type of early intervention could also be seen as bridge upgrades, however, each recommended investment is on existing bridge componentry without a substantial change or increase in service. Therefore, for this report, all capital work is considered renewals.

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 capital works program will be accommodated in the long term financial plan. This is further discussed in Section 7.

5.4 Creation/Acquisition/Upgrade Plan

As mentioned previously in this report, Council does not anticipate the creation of new, acquired or upgraded Bridge & Major Culverts.

5.4.3 Summary of asset expenditure requirements

The financial projections from this asset plan 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.

The bars in the graphs represent the anticipated budget needs required to achieve lowest lifecycle costs, the budget line indicates what is currently available. The gap between these informs the discussion on achieving the balance between services, costs and risk to achieve the best value outcome.

Fig 7.1: Projected Operating and Capital Expenditure (Scenario One)

Mid Murray - Projected Operating and Capital Expenditure (Bridges_S1_V1)

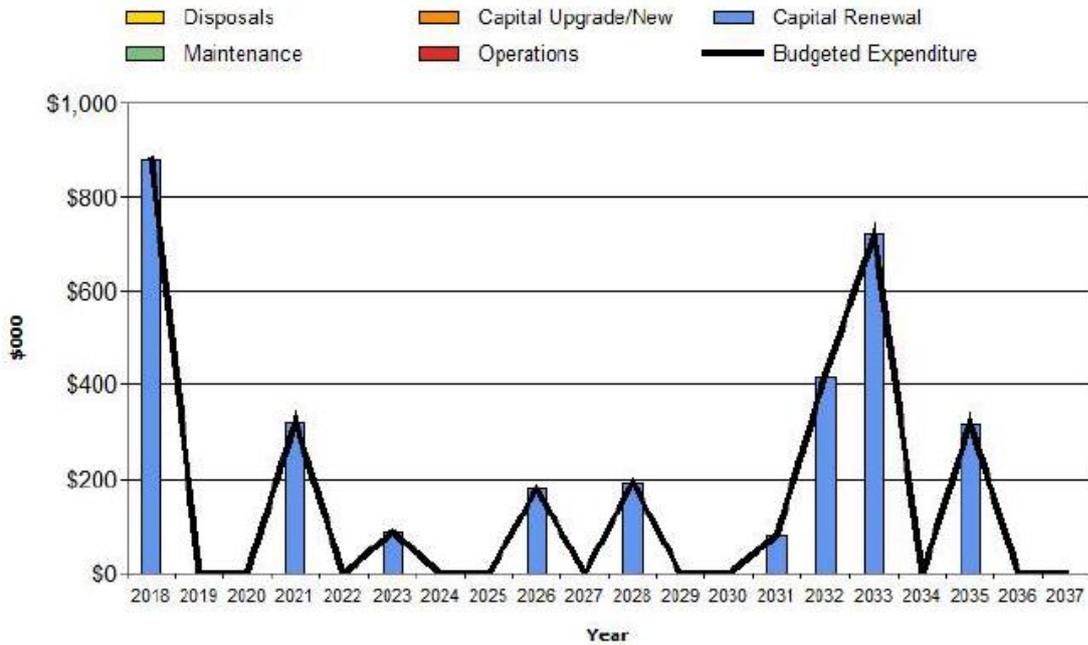


Fig 7.2: Projected Operating and Capital Expenditure (Scenario Two)

Mid Murray - Projected Operating and Capital Expenditure (Bridges_S2_V1)

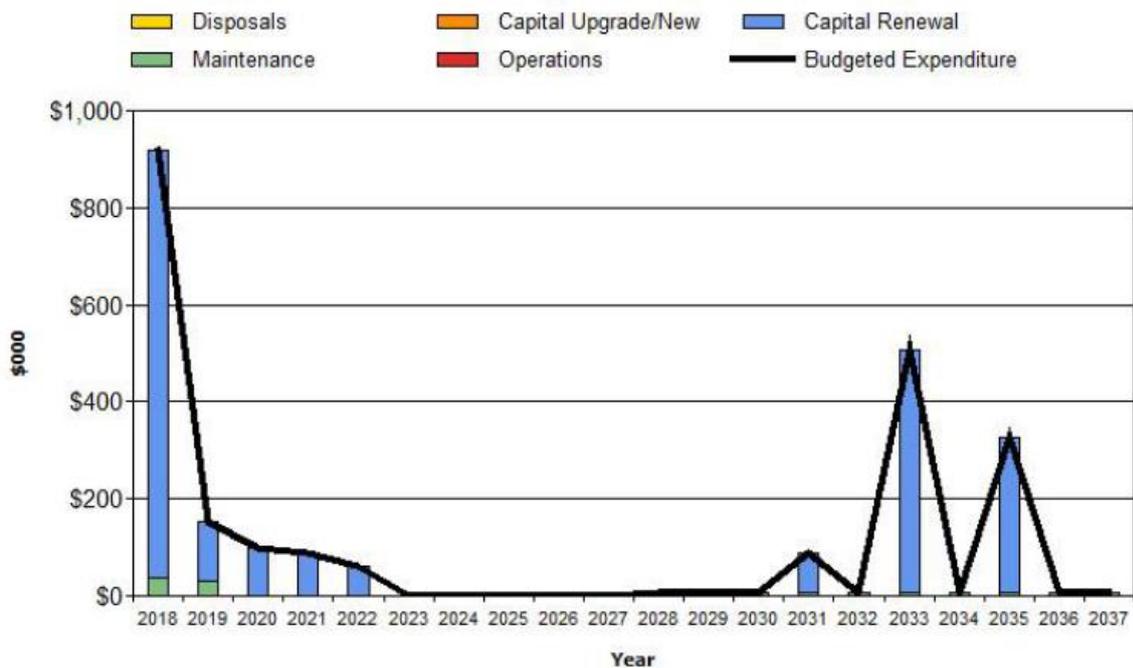


Figure Values are in current (real) dollars.

5.5 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.5, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any costs or revenue gained from asset disposals is accommodated in the long term financial plan.

Table 5.5: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
Decommissioned Purnong Rd Bridge (Not listed)	Decommissioned	TBD	TBD	NIL

6. RISK MANAGEMENT PLAN

The purpose of infrastructure risk management is to document the results and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2009 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2009 as: ‘coordinated activities to direct and control with regard to risk’⁷.

An assessment of risks⁸ 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’. 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.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Similarly, critical failure modes are those which have the highest consequences.

All bridge structures are deemed critical. Council does not believe any constructed bridge can be allowed to fail as they are required. Only unavoidable financial constraints will Council consider deferring renewal and managing the risks that could eventuate.

By identifying critical assets and failure modes investigative activities, condition inspection programs, maintenance and capital expenditure plans can be targeted at the critical areas.

6.2 Risk Assessment

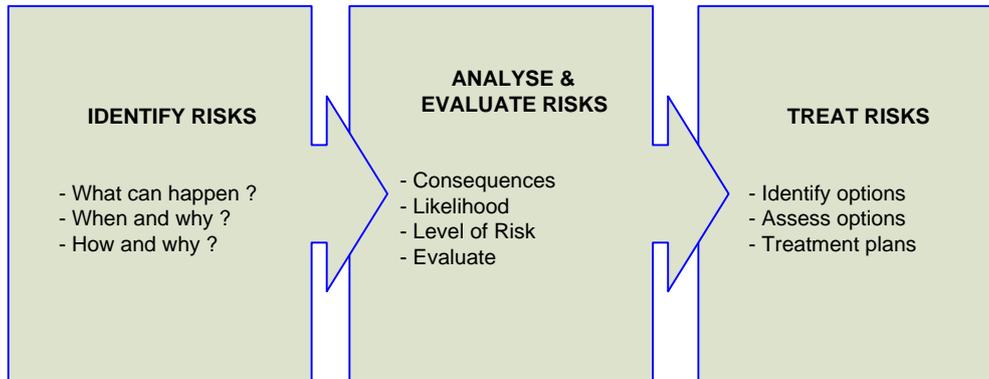
The risk management process used in this project is shown in Figure 6.2 below.

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

⁷ ISO 31000:2009, p 2

The process is based on the fundamentals of the ISO risk assessment standard ISO 31000:2009.

Fig 6.2 Risk Management Process – Abridged



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.

An assessment of risks⁹ associated with service delivery from infrastructure assets has identified the critical risks that will result in significant loss, ‘financial shock’ or a reduction in service.

Critical risks are those assessed with ‘Very High’ (requiring immediate corrective action) and ‘High’ (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. These risks and costs are reported to management.

7. FINANCIAL SUMMARY

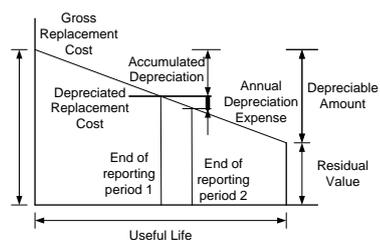
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset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

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. Assets are valued at fair value.

Gross Replacement Cost	\$4,993,000
Depreciable Amount	\$4,993,000
Depreciated Replacement Cost ¹⁰	\$1,857,000
Annual Average Asset Consumption	\$75,000



¹⁰ Also reported as Written Down Value, Carrying or Net Book Value.

7.1.1 Sustainability of service delivery

Two key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the:

- asset renewal funding ratio, and
- medium term budgeted expenditures/projected expenditure (over 10 years of the planning period).

Asset Renewal Funding Ratio

The Asset Renewal Funding Ratio is the most important indicator and indicates that over the next 10 years of the forecasting that we expect to have 100% of the funds required for the optimal renewal and replacement of assets.

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 \$147,000 on average per year by following scenario one or \$132,000 on average per year for scenario two.

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.

7.1.2 Projected expenditures for long term financial plan

Table 7.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in 2017/18 real values.

Table 7.1.2: Projected Expenditures for Long Term Financial Plan (\$000) – Scenario One

Year End June 30	Projected Renewals (\$'000)	LTFP Renewal Budget (\$'000)	Renewal Financing Shortfall (- gap, + surplus) (\$'000)	Cumulative Shortfall (- gap, + surplus) (\$'000)
2018	\$880	\$880	\$0	\$0
2019	\$0	\$0	\$0	\$0
2020	\$0	\$0	\$0	\$0
2021	\$322	\$322	\$0	\$0
2022	\$0	\$0	\$0	\$0
2023	\$90	\$90	\$0	\$0
2024	\$0	\$0	\$0	\$0
2025	\$0	\$0	\$0	\$0
2026	\$180	\$180	\$0	\$0
2027	\$0	\$0	\$0	\$0
2028	\$195	\$195	\$0	\$0
2029	\$0	\$0	\$0	\$0
2030	\$0	\$0	\$0	\$0
2031	\$80	\$80	\$0	\$0
2032	\$415	\$415	\$0	\$0
2033	\$720	\$720	\$0	\$0
2034	\$0	\$0	\$0	\$0
2035	\$320	\$320	\$0	\$0
2036	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0

Table 7.1.3: Projected Expenditures for Long Term Financial Plan (\$000) – Scenario Two

Year End June 30	Projected Renewals (\$'000)	LTFP Renewal Budget (\$'000)	Renewal Financing Shortfall (- gap, + surplus) (\$'000)	Cumulative Shortfall (- gap, + surplus) (\$'000)
2018	\$880	\$880	\$0	\$0
2019	\$120	\$120	\$0	\$0
2020	\$100	\$100	\$0	\$0
2021	\$90	\$90	\$0	\$0
2022	\$60	\$60	\$0	\$0
2023	\$0	\$0	\$0	\$0
2024	\$0	\$0	\$0	\$0
2025	\$0	\$0	\$0	\$0
2026	\$0	\$0	\$0	\$0
2027	\$0	\$0	\$0	\$0
2028	\$0	\$0	\$0	\$0
2029	\$0	\$0	\$0	\$0
2030	\$0	\$0	\$0	\$0
2031	\$80	\$80	\$0	\$0
2032	\$0	\$0	\$0	\$0
2033	\$500	\$500	\$0	\$0
2034	\$0	\$0	\$0	\$0
2035	\$320	\$320	\$0	\$0
2036	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0

7.2 Funding Strategy

Funding for assets is provided from the budget and long term financial plan.

The financial strategy of the entity determines how funding will be provided, whereas the asset management plan communicates how and when this will be spent, along with the service and risk consequences of differing options.

7.3 Valuation Forecasts

Asset values are forecast to remain stable as additional assets are not to be added to the asset class.

7.4 Key Assumptions Made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan are:⁴

Table 7.4: Key Assumptions made in AM Plan and Risks of Change

- No future demand for new assets
- Required funding is met
- Information provided by Wallbridge & Gilbert is sound and correct

7.5 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 scale¹¹ in accordance with Table 7.5.

Table 7.5: Data Confidence Grading System

Confidence Grade	Description
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$
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 $\pm 10\%$
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 $\pm 25\%$
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 $\pm 40\%$
E Unknown	None or very little data held.

¹¹ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be highly reliable.

8. PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹²

8.1.1 Accounting and financial data sources

Wallbridge & Gilbert, Director of Corporate & Financial Services

8.1.2 Asset management data sources

Wallbridge & Gilbert

8.2 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget planning processes and amended to show any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The AM Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the long term financial plan.

The AM Plan has a life of 4 years and is due for complete revision and updating by 2022.

8.3 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 the long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and corporate 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 Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

¹² ISO 55000 Refers to this the Asset Management System

9. 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, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- Mid Murray Community Plan 2016-2020
- Long Term Financial Plan 2017-18 to 2026-27
- Mid Murray Council: Bridge Condition Assessment Report, Wallbridge & Gilbert

10. APPENDICES

Appendix A Projected 10 year Capital Renewal and Replacement Works Program

Appendix B Budgeted Expenditures Accommodated in LTFP

Appendix A Projected 10-year Capital Renewal and Replacement Works Program

Scenario 1 -

Asset ID	Sub Category	Asset Name	From To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
VB_9	VEHICULAR BRIDGE	MILENELLA RD BRIDGE		0	2018	\$410,000	60
VB_2	VEHICULAR BRIDGE	EUDUNDA RD BRIDGE		0	2018	\$470,000	60
						Subtotal	\$880,000
VB_3	VEHICULAR BRIDGE	DUTTON MAIL RD BRIDGE		3	2021	\$322,000	60
						Subtotal	\$322,000
VB_8	PEDESTRIAN BRIDGE	OFF NINTH ST BRIDGE		5	2023	\$90,000	50
						Subtotal	\$90,000
VB_1	VEHICULAR BRIDGE	ST KITTS BRIDGE		8	2026	\$180,000	60
						Subtotal	\$180,000
						Program Total	\$1,472,000

Scenario 2

Asset ID	Sub Category	Asset Name	From To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
VB_200		EUDUNDA RD BRIDGE		0	2018	\$470,000	60
VB_900		MILENELLA RD BRIDGE		0	2018	\$410,000	60
						Subtotal	\$880,000
VB_302		DUTTON MAIL RD BRIDGE NEW DECK		1	2019	\$40,000	58
VB_1501		LEN WHITE RESERVE BRIDGE SCOUR PROTECTION		1	2019	\$10,000	38
VB_1002		NUSKE RD BRIDGE APPROACH BARRIER		1	2019	\$15,000	46
VB_1001		NUSKE RD BRIDGE BARRIER		1	2019	\$15,000	46
VB_402		TRURO RD BRIDGE APPROACH BARRIER		1	2019	\$20,000	40
VB_401		TRURO RD BRIDGE BARRIER		1	2019	\$20,000	40
						Subtotal	\$120,000
VB_504		EAST TCE BRIDGE APPROACH BARRIER		2	2020	\$10,000	52
VB_503		EAST TCE BRIDGE BARRIER		2	2020	\$10,000	52
VB_501		EAST TCE BRIDGE RETAINING WALL		2	2020	\$10,000	52
VB_502		EAST TCE BRIDGE WING WALLS		2	2020	\$10,000	52
VB_1402		RIVER RESERVE RD BRIDGE CONCRETE		2	2020	\$15,000	45
VB_1401		RIVER RESERVE RD BRIDGE STEEL BEAMS		2	2020	\$20,000	45
VB_102		ST KITTS BRIDGE DECKING BOARD		2	2020	\$10,000	54
VB_101		ST KITTS BRIDGE STEEL BEAMS		2	2020	\$15,000	54
						Subtotal	\$100,000
VB_703		BLACK HILL RD BRIDGE BARRIERS		3	2021	\$10,000	48
VB_702		BLACK HILL RD BRIDGE CONCRETE KERBING		3	2021	\$10,000	48
VB_701		BLACK HILL RD BRIDGE STEEL BEAMS		3	2021	\$15,000	48
VB_304		DUTTON MAIL RD BRIDGE APPROACH BARRIER		3	2021	\$20,000	60
VB_303		DUTTON MAIL RD BRIDGE BARRIER		3	2021	\$20,000	60
VB_301		DUTTON MAIL RD BRIDGE STEEL BEAMS		3	2021	\$15,000	60
						Subtotal	\$90,000
VB_1202		BRINKWORTH RD BRIDGE 1 APPROACH BARRIER		4	2022	\$20,000	50
VB_1201		BRINKWORTH RD BRIDGE 1 BARRIER		4	2022	\$20,000	50
VB_801		OFF NINTH ST BRIDGE PIER		4	2022	\$20,000	49
						Subtotal	\$60,000
						Program Total	\$1,250,000

Appendix B Budgeted Expenditures Accommodated in LTFP

NAMS.PLUS3 Asset Management		Paradise									
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Infrastructure_S1_V1		Asset Management Plan									
		 									
First year of expenditure projections		2017 (financial yr ending)									
Infrastructure											
Asset values at start of planning period		Calc CRC from Asset Register									
Current replacement cost	\$95,000 (000)	\$95,000 (000)									
Depreciable amount	\$94,993 (000)	This is a check for you.									
Depreciated replacement cost	\$40,171 (000)										
Annual depreciation expense	\$1,800 (000)										
		Operations and Maintenance Costs for New Assets									
		% of asset value									
		Additional operations costs 0.23%									
		Additional maintenance 0.84%									
		Additional depreciation 1.89%									
		Planned renewal budget (information only)									
		You may use these values calculated from your data or overwrite the links.									
Planned Expenditures from LTFP											
20 Year Expenditure Projections		Note: Enter all values in current 2017 values									
Financial year ending	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)											
Operations											
Operations budget	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220	
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total operations	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220	
Maintenance											
Reactive maintenance budget	\$240	\$240	\$240	\$240	\$240	\$240	\$240	\$240	\$240	\$240	
Planned maintenance budget	\$480	\$480	\$480	\$480	\$480	\$480	\$480	\$480	\$480	\$480	
Specific maintenance items budget	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$80	
Total maintenance	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	
Capital											
Planned renewal budget	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	
Planned upgrade/new budget	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Asset Disposals											
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Carrying value (DRC) of disposed asset	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)											
Additional Expenditure Outlays required and not included above	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Operations	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	
Maintenance	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)										
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
User Comments #2											
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)											
Forecast Capital Renewal from Forms 2A & 2B	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Forecast Capital Upgrade from Form 2C	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	