

# ASSET MANAGEMENT PLAN – BRIDGES (2023 – 2027)

Shire of York – Asset Management System

## Document Control

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## Acknowledgement of Country

*The Shire of York acknowledge the Traditional Custodians of the land, the Ballardong people of the Noongar nation and pays respects to Elders past, present and emerging. We recognise the unique and valuable contribution the Ballardong Noongar people have made and continue to make to our culture and in our community. The land on which we live, meet and thrive as a community always was and always will be Noongar land.*

## Definitions

Term	Description
<b>Asset Register</b>	Means a record of asset information considered worthy of separate identification including inventory, historical, condition, construction, technical, and financial
<b>Acquisition</b>	Means the creation of a new asset to meet additional service requirements
<b>Capex</b>	Means Capital Expenditure
<b>Contractor</b>	Means the person or persons, corporation, or corporations whose Response is accepted by the principal, and includes the executors or administrators, successors and assigns of such person or persons, corporation, or corporations
<b>Council</b>	Means the Council of the Shire of York
<b>Grant</b>	Means external funding/monies that are received by the Shire that contribute towards capital works and/or maintenance and operational activities.
<b>Level of Service (LOS)</b>	means meeting community expectations in relation to the quality and quantity of services delivered by Council required to meet the agreed or expected performance. In some contexts, it could be an adjusted performance expectations/standards of an asset in coordination with stakeholders due to limited financial resources.
<b>Lifecycle</b>	Means the cycle of activities that an asset goes through while it retains an identity as a particular asset
<b>Lifecycle Cost</b>	Means the total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, disposal and renewal costs
<b>Local Government</b>	Means the Shire of York
<b>Maintenance</b>	Means actions taken to preserve, repair or restore condition and functionality of assets. For ex: corrective repairs, inspection, repair of potholes and cracks on road etc. Maintenance can be reactively performed or proactively performed as part of a planned preventative program of works.
<b>Municipal Funds</b>	Means funds approved for expenditure as part of the annual budget adoption process through Council.
<b>Operations</b>	Means the regular activities to provide public health, safety and amenity and to enable the assets to function e.g. road sweeping, grass mowing, cleaning, street lighting and graffiti removal and support services for the performance of maintenance and asset management services.
<b>Opex</b>	Means Operating Expenditure
<b>Renewal</b>	Means restores, rehabilitates, replaces existing asset to its original capacity. This may include the fitment of new components necessary to meet new legislative requirements in order that the asset may achieve compliance and remain in use
<b>Risk</b>	Means probability and consequence of an event that could impact on the Council's ability to meet its corporate objectives
<b>Shire</b>	Means the Shire of York
<b>Transport Assets</b>	Means to include roads, bridges, drainage and footpaths
<b>Upgrade</b>	Means enhances existing asset to provide a significantly higher level of service
<b>Useful Life</b>	Means the period over which a depreciable asset is expected to be used.
<b>Principal</b>	Shire of York
<b>SoY</b>	Shire of York

# 1 Executive Summary

## 1.1 The Purpose of the Plan

This document ‘Asset Management Plan-Bridges’ (AM Plan) provides key information on bridge infrastructure assets within the Shire of York (the Shire). This AM Plan has been developed for the management of bridge assets. The AM Plan combines multi-disciplinary management techniques (technical and financial) for the performance of services across four (4) key phases of the lifecycle of the asset, this is known as the ‘Asset Management Lifecycle’.

The four (4) key phases of the Asset Management Lifecycle and their associated services are summarised in **Table 1- Asset Management Lifecycle Phases**. This AM Plan establishes key parameters for the management of bridge assets that include Levels of Service, Future Demand, Lifecycle Management Plans, Financial Projections alongside the implementation of Asset Management Practices including Performance Monitoring and Improvement. This AM Plan links with the Shire’s Long-Term Financial Plan (LTFP) to ensure funding is aligned to meet infrastructure requirements over the same ten (10) year period and to ensure that bridge assets meet Council’s priorities for service delivery.

**Table 1- Asset Management Lifecycle Phases**

Phases	1- Plan	2- Acquire	3- Operate & Maintain	4- Dispose
Services	Asset Management Planning	Investment of funds to acquire new asset or renew asset – Capital funds are typically allocated for these activities.	Allocation of funds to maintain and operate existing assets- Operational funds are typically allocated for these activities across the “useful life” of the asset*	Asset disposal-removal of the asset from service through unpredictable failure or planned decommissioning.
*Useful Life of the asset is the period over which a depreciable asset is expected to perform				

## 1.2 Asset Description

This document (AM Plan) is limited to discussing bridge assets that are owned or controlled by Council. **Table 2- Shire of York Bridge Assets** below summarises the types of bridges, quantity, material construction and replacement value of Shire bridges.

**Table 2- Shire of York Bridge Assets**

Class	Sub Class	Material	Quantity	Unit	Replacement Value
Bridge	Traffic Bridge	Timber Frame with concrete deck	19	each	\$49,676,500
	Pedestrian	Timber suspension	1	each	\$500,000
	<b>Total</b>	<b>All types</b>	<b>20</b>		<b>\$50,176,500</b>

The total replacement value of bridges within the Shire is estimated at **\$50.176 Million** as of **30 June 2022**.

### 1.3 Levels of Service

A ‘Level of service’ typically means the expectation of the quality and quantity of services required to be performed to realise an agreed condition and/or service provision. The types of services required to be performed vary depending on the phase of the Asset Management Lifecycle.

Key programs that assist with managing the Level of Service include:

- Asset Management Planning and Monitoring (Asset Performance)
- Asset Renewal or Acquisition (Construction)
- Operational and Maintenance Services (Service Standards)
- Asset Disposal (Asset Acquittal)

This AM plan assumes that the Shire holds the objective of maintaining existing Levels of Service across all bridge assets and that key programs are developed across the asset management lifecycle to reflect this objective.

Maintaining existing Levels of Service means the asset will maintain current load limits, widths, and trafficable surface conditions. The budget assumptions for maintaining service levels do not make provision for any future demand changes as outlined in section **1.4 Future Demand** in this document.

**Table 3- Works Programs across the Asset Management lifecycle** identifies the key works programs through the four (4) phases of the Asset Management Lifecycle.

**Table 3-Works Programs Across the Asset Management Lifecycle**

Phases	1-Plan	2-Acquire	3-Operate & Maintain	4-Dispose
Programs	<b>Asset Management Planning</b>	<b>Lifecycle Renewal</b> (partial asset replacement)	<b>Operational Services</b> ("soft" services)	<b>Asset Disposal</b> (removal of asset from service)
	<b>Asset Monitoring</b> (demand monitoring, condition monitoring)	<b>Acquisition</b> (Full asset replacement)	<b>Maintenance Services</b> (Planned/Preventative) ("hard services")	
			<b>Maintenance Services</b> (Reactive Maintenance Services) ("hard services")	

The programs to maintain existing Levels of Service are typically divided into two (2) funding types these are the Operating Budget (Opex) and Capital Budget (Capex). **Table 4- Traffic Bridge Works Programs and Table 5- Pedestrian Bridge Works Programs**, identifies key service tasks required to be performed in each program in order that current Levels of Service are maintained. **Table 4 and 5** also identify funding types and possible funding sources for each program.

**Table 4-Traffic Bridge Programs (Plans)**

Lifecycle Phase	Program	Service Task	Frequency	Funding Type	Funding Source
1	<b>Asset Management Planning</b>	Strategic Planning	Annual Review	Opex	Municipal
1	<b>Demand Monitoring</b>	Strategic Planning	subject to asset criticality	Opex	Municipal
2	<b>Lifecycle Renewal (Heavy Maintenance)</b>	Capital Program	As required	Capex	Grant*
2	<b>Acquisition</b>	Capital Program	As required	Capex	Grant*
3	<b>Operational Services</b>	Insurance Services	Annual	Opex	Municipal
3	<b>Maintenance Services (Planned Maintenance)</b>	Level 1 (MRWA) Inspection	Annual inspection	Opex	Municipal
3	<b>Maintenance Services (Planned Maintenance)</b>	Planned Maintenance works	Annual works	Opex	Municipal
3	<b>Maintenance Services (Reactive Maintenance)</b>	Reactive Maintenance works	Annual works	Opex	Municipal
3	<b>Maintenance Services (Planned Maintenance)</b>	Level 2 (MRWA) Inspection	Every five (5) years	Opex	Main Roads
4	<b>Asset Disposal</b>	Asset disposal as part of renewal	As required	Capex	Grant*

\*Grant funding is through the Main Roads state-wide program

**Table 5- Pedestrian Bridge- Works Program (Plans)**

Lifecycle Phase	Program	Service Task	Frequency	Funding Type	Funding Source
1	<b>Asset Management Planning</b>	Strategic Planning	Annual Review	Opex	Municipal
1	<b>Demand Monitoring</b>	Strategic Planning	Annual Review	Opex	Municipal
2	<b>Lifecycle Renewal</b>	Capital Program	As required	Capex	Municipal
3	<b>Operational Services</b>	Insurance Services	Annual	Opex	Municipal
3	<b>Maintenance Services (Planned Maintenance)</b>	Planned Maintenance works	Annual works	Opex	Municipal
3	<b>Maintenance Services (Reactive Maintenance)</b>	Reactive Maintenance works	Annual works	Opex	Municipal
4	<b>Asset Disposal</b>	Asset disposal as part of renewal	As required	Capex	Municipal

## 1.4 Future Demand

Service levels across bridge assets may be influenced by future demand. Key factors that influence demand are summarised in **Table 6- Key Factors Influencing Demand**.

**Table 6- Key Factors Influencing Demand**

Item no.	Factor
1.	Population growth
2	Changing age demographic
3	Infill residential development
4	Precinct development
5	Changed Service use (i.e., changed transport routes or transport type)
6	Motorised scooters and similar
7	Economic constraints
8	Changing Environmental conditions

It is important that Asset Managers monitor factors that may change and impact demand in order that asset management programs can be adjusted to maintain agreed service levels.

Along with demand management (monitoring), asset managers may develop risk management strategies to deal with unpredictable changes in demand levels that may impact on service levels and/or impact on asset failure. **Table 7- Key Tasks to Manage Asset Failure Risk**, summarizes the types of strategies or tasks that asset managers may perform to manage demand and service levels.

**Table 7- Key Tasks to Manage Asset Failure Risk**

Item no.	Task
1.	Complete Regular Asset Valuations
2	Insure Assets
3	Develop Emergency Response Plans/Procedures
4	Assess Asset Criticality
5	Regular Demand Monitoring

Importantly the impact of the failure for some bridge assets may be higher than others as they form critical parts of the local or regional transport network. Demand monitoring helps to inform asset managers of the potential need for an increase in service level, the associate economic impact and timelines for asset renewal works. Demand monitoring allows the asset manager to be proactive and ensure that works schedules can be adjusted to changing demand conditions to ensure the asset does not fail or reduce the severity of unpredictable failure.

## 1.5 Lifecycle Management Plan

### 1.5.1 What does it Cost?

This AM Plan forecasts costs necessary to manage the delivery of works programs through each phase of the asset management lifecycle. Costs are assigned to each asset lifecycle phase, these phases include the operational and maintenance phase, lifecycle renewal or acquisition phase, and disposal phase.

The AM Plan may be adjusted for a range of time periods and to suit available budgets. The AM Plan typically helps to inform Long-Term Financial Planning periods of ten (10) years.

This AM Plan estimates that a requirement of 2 million and 35 thousand (\$166,499) or \$2.035 Million is required annually over a period of ten (10) years to maintain and operate Shire bridges.

The capital “lifecycle renewal” costs or “renewal” costs for the substantive repair and replacement of bridges is estimated at a cost of ‘\$6.17 million”. This figure is not shown in the Long-Term Financial Plan (LTFP) as the Shire assumes that current precedents for Main Roads capital funding will remain and therefore asset renewal works will be funded by Main Roads. This is a key assumption in the LTFP.

No new bridge assets are currently planned over the ten (10) year period, therefore “acquisition “costs are omitted from the plan.

## 1.6 Financial Summary

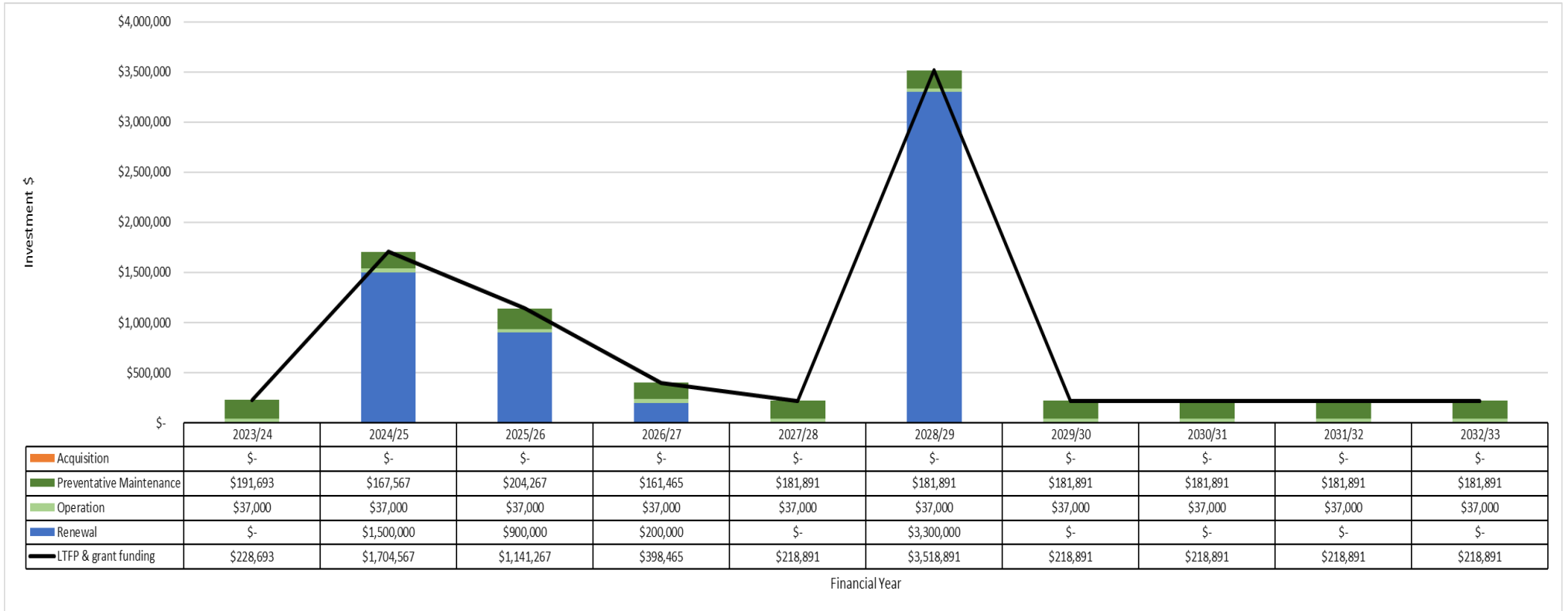
### 1.6.1 What we will do

In order to be eligible to receive access to Main Roads funding for capital lifecycle renewal works (Capital Funding), the Shire must complete annual planned maintenance service tasks (Operational Funding) across the bridge assets. These key planned maintenance service tasks are scheduled by Main Roads and will assist the Shire to maintain service levels whilst also pro-actively monitoring conditions to support identifying issues that require reactive maintenance mobilisations or alternatively escalation to Main Roads for capital funding allocations for either wholesale or partial renewal of bridge assets.

The LTFP assumes that Main Roads will continue to fund capital/lifecycle renewal works (heavy maintenance services) for the Shire as part of State Government Grant funding. The ten (10) year lifecycle allocation for bridges assumes that the Shire will only fund programs for operational, planned, and reactive maintenance services in line with Main Roads Inspection and works schedules as outlined in **Table 4** for Traffic Bridge Assets. These funds are the lowest lifecycle costs for Traffic Bridge Assets. If the Shire elected not to allocations funds to the programs identified, then the wholesale or partial renewal works for traffic bridges would not be eligible for Grant funding and this would result in a greater longer term 10- year lifecycle allocation.

On the assumption that asset renewal works will be Grant funded, the AM Plan shows an annual maintenance funding requirement of is two hundred thousand dollars (\$200,000), to complete works identified in operational and maintenance programs. **Figure 1- Forecast Lifecycle Costs and Annual Budget Allocation** graphically represents the various funding requirements across each of the programs. Importantly the FY23/24 budget allocation of two hundred-thousand-dollar (\$200,000) maintenance budget allocation does not make an allowance for backlog maintenance works that may be required across the bridge assets and as Main Roads Level 2 inspection reports are received by the Shire.

**Figure1 - Forecast Lifecycle Costs and Planned Budget (10 year-LTFP)**



The Figure Values shown are ast at 30 June 2022.

**Table 4** and **Table 5** in this Executive Summary captures the various works programs for Pedestrian and Traffic Bridges across the Asset Management Lifecycle.

### 1.6.2 Asset Management Plan Limitations (what we cannot do)

The Asset Management Plan does **not** allocate funds to significantly renew or replace wholesale sections or components of bridges. The partial or wholesale renewal of Bridges may include the following works:

- Repairs or damage to bridges, including any current damage to Bridge 4156 Burgess Siding Road from recent flooding. The AM Plan assumes that current insurance policies will cover the extend of works required to reinstate like for like infrastructure.
- Upgrade or prematurely replace older bridges that may have load limits or width restrictions, as this work would constitute asset renewal works.
- Scheduled replacement of timber bridges, except where funded from State Government Grant funding, this work would constitute asset renewal works.
- No reserve funds are being set aside to replace the single Pedestrian timber bridge, which is not due for replacement in the current 10-year plan.

### 1.6.3 Managing the Risks

The funding levels identified are sufficient to manage risks in the medium term.

Key Risks Include:

- Unexpected asset loss or failure, this may be due to overloading, lack of maintenance (planned or reactive) such as white ant treatment or failure to initiate corrective actions following regular inspection program.
- Fire or flood damage (funding assumes this risk is covered by insurance)
- Demand for increased service levels (for heavy traffic), this risk would need to be managed by accessing additional funds to modify (renew) bridges to suit increased service levels. Demand risk (utilisation) rate is a risk that is able to be managed through the planned traffic counter program.

Key Risk Management techniques include:

- Regular inspections and maintenance (Level 1- by Shire and Level 2-By Main Roads).
- Work closely with Main Roads on bridge renewal planning (Strategic Planning).
- Insure bridges against unexpected loss
- Initiate traffic counter program to understand demand (utilisation) risk (Demand Monitoring).

## 1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- That the Federal and State Government will continue to fund through the grants program scheduled replacement of all timber traffic bridges included replacement as required, scheduled heavy maintenance and level 2 inspection work.
- The asset register, condition data and other source information is a true reflection of the real world (see confidence statement)
- The assets are being (and have been) maintained and operated appropriately, such that the useful life of the asset will be achieved.

That the asset condition information will continue to be informed by the maintenance and inspection process to assist with strategic planning and renewal works and to assist with preventing the failure of assets noting the following points:

- That the timing of capital renewal works is based on the asset register information, the asset register assumes that the useful life of the asset is added to the year of acquisition or year of last renewal; or
- The estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The asset registers and valuation report have been used to forecast the renewal lifecycle costs for this AM Plan. This AM Plan is based on a reliable level of confidence information.

## 1.8 Monitoring and Improvement Program (Recommendations)

The next steps resulting from this AM Plan to implement key programs across the asset management lifecycle in order to improve asset management practices are:

Item	Description	Responsibility	Resources required	Priority	Timeline
1	<b>Maintain Asset Register</b> - Confirm the status of Crees Road Bridge and update the asset register with current information	EMIDS	Asset Manager	High	June 2023
2	<b>Asset Register</b> - develop procedure for updating Asset Register	EMIDS	Asset Manager	High	June 2023
3	<b>Inspections</b> -Complete Level 1 Bridge inspections for all traffic Bridges	EMIDS	TBC	Very high	April 2023
4	<b>Reactive Maintenance</b> - Review maintenance requirements identified within Main Roads Level 2 Bridge Inspections and program works	EMIDS	TBC	Very High	June 2023
5	<b>Planned Maintenance</b> - Develop planned maintenance program for all bridge assets	EMIDS	TBC	Very High	June 2023
6	<b>Operational Plan</b> - Develop and document operational plan that for the management and performance of maintenance and operational works for all asset management stakeholder use.	EMIDS	TBC	Very High	June 2023
7	<b>Demand Management</b> - implement counter program and demand management program	EMIDS	TBC	Medium	Dec 2023

8	<b>Monitoring-</b> Undertake Internal reviews of performance and issues- June 2023,2024,2025.	EMIDS	TBA	Medium	June 2023, 2024, 2025
9	<b>Audit-</b> Undertake external AMS audit June 2026.	EMIDS	TBA	Medium	June 2026
10	<b>Service Levels-</b> complete review of all bridges	EMIDS	TBA	Very Low	June 2027
11	<b>Valuations</b> - Develop and document processes for key functions such as valuation, acceptance of new assets, inspection, forward works planning and similar.	EMIDS	TBA	Medium	June 2023
12	<b>Establish Hierarchy for service levels of bridges</b>	EMIDS	TBA	Medium	Dec 2023
13	<b>Establish Infrastructure Risk Management Plans</b> to manage and maintain service levels of bridges	EMIDS	TBA	Medium	Dec 2023

## 2 Introduction

### 2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Shire planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Operational Policy – Asset Management
- Shire of York – Strategic Community plan 2020-2030
- Shire of York – Long Term Financial Plan 2016-2026
- Shire of York – Annual Budget 2022-23
- Shire of York Corporate Business Plan 2020-2024

The Shire is currently undergoing a comprehensive review and update of all its asset management planning documentation. The main objective being to implement a suite of transparent and workable documents that will assist Council and Executive Management with effective and purposeful decision making.

The infrastructure assets covered by this AM Plan includes pedestrian and traffic bridges. For a detailed summary of the assets covered in this AM Plan refer to **Table 5.1.1 in Section 5** of this document.

These assets are used to provide road and pedestrian access across waterways services.

The infrastructure assets included in this plan have a total replacement value of insert \$53.490 Million.

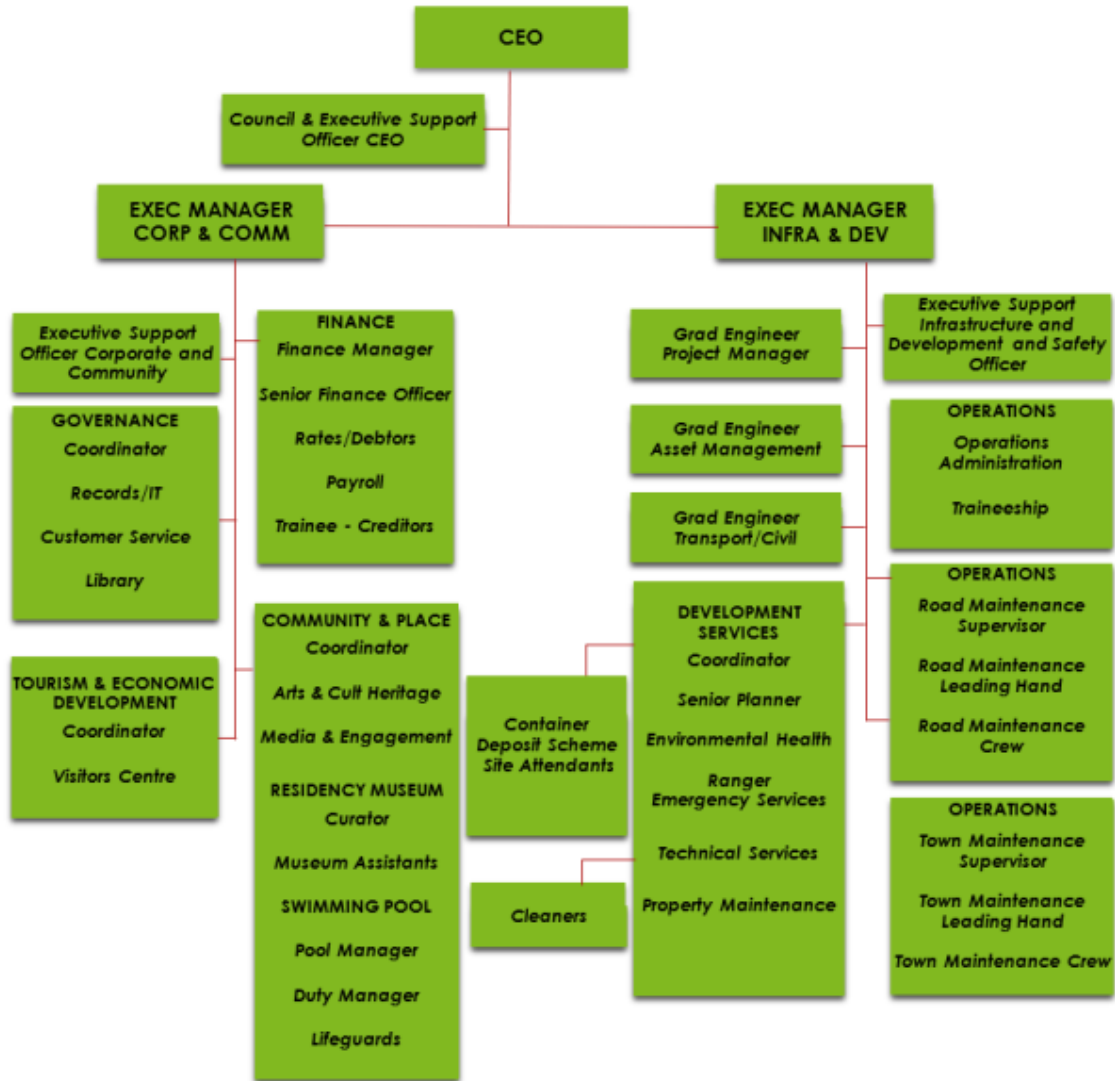
Key stakeholders in the preparation and implementation of this AM Plan are shown in **Table 2.1**.

The Shire's Organisational Structure is shown in **Diagram 2**, to assist with identifying roles and responsibilities and reporting lines for the delivery and management of services.

**Table 2.1: Key Stakeholders in the AM Plan**

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none"> <li>• Represent needs of community/shareholders,</li> <li>• Allocate resources to meet planning objectives in providing services while managing risks,</li> <li>• Ensure service sustainable.</li> <li>• Funding of bridges and bridge services</li> </ul>
Executive Leadership Team	<ul style="list-style-type: none"> <li>• Prioritise and support the development of a suite of asset management plans</li> <li>• Utilise the findings and recommendations from asset management plans to better inform forward planning, including considerations for budget and updating long term financial plan</li> </ul>
Corporate Services	<ul style="list-style-type: none"> <li>• Regularly review and update asset register, ensuring valuations are current and accurate</li> <li>• Comply with the Shire’s significant accounting Policies document</li> <li>• Provision of administration support</li> </ul>
Infrastructure Services	<ul style="list-style-type: none"> <li>• Provide local knowledge and detailed condition reports on all the Bridge assets</li> <li>• Provide information around maintenance schedules and ability to meet technical and customer levels of service</li> </ul>
External Parties	<ul style="list-style-type: none"> <li>• Community residents and businesses – provision of feedback and desired levels of service</li> <li>• Road Users – provision of feedback and desired levels of service</li> <li>• Tourists and ad hoc visitors – provision of feedback and desired levels of service</li> <li>• Neighbouring Local Governments – knowledge and experience sharing</li> <li>• Federal and State Government authorities and agencies provide legislative and best practice guidance</li> <li>• Main Roads WA – (i) provide regulation, heavy maintenance and level 2 inspections of traffic bridge services to the Shire, (ii) assess and confirm routine and maintenance work is being completed, (iii) assess and identify replacement program for the Shire, (iv) assess and recommend replacement grant funding, (v) where requested manage bridge replacements.</li> <li>• State Government Grants Commission and Main Roads provide bridge replacement funding for traffic bridges, as required.</li> <li>• Department of Biodiversity, Conservation and Attractions - protection of waterways and vegetation</li> </ul>

Diagram 2- Shire of York Organisational Structure



## 2.2 Goals and Objectives of Asset Ownership

Our goal for 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 asset management are:

- Defining the level of service and monitoring service levels (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 to meet service requirements.
- Identifying, assessing, and appropriately controlling risks, through the identification of critical assets and preventing early failure and developing processes to restore assets.
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- Identifying levels of service – specifies the services and levels of service to be provided,
- Risk Management,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to 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 – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

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

- International Infrastructure Management Manual 2015 <sup>1</sup>
- ISO 550002

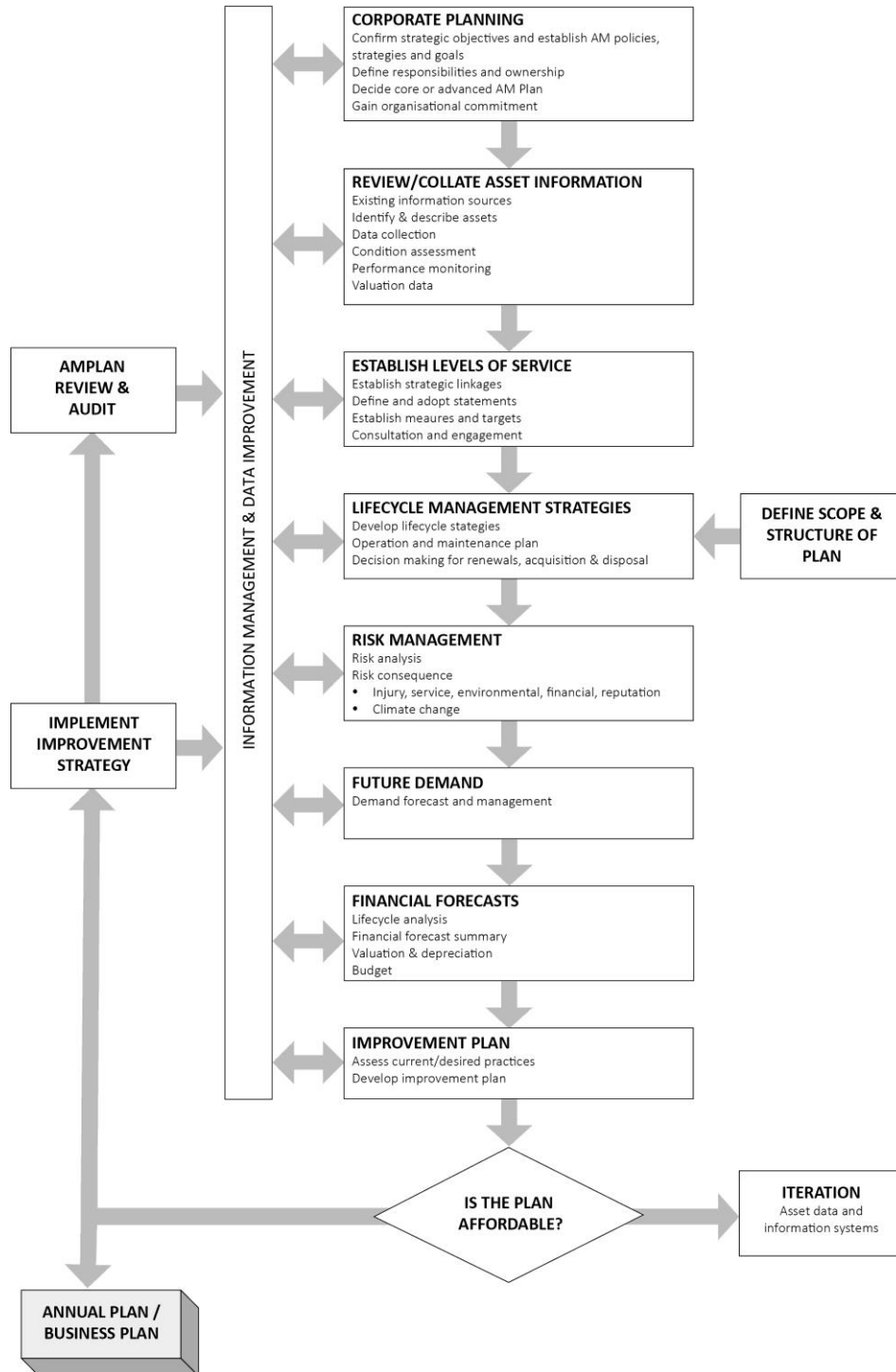
A road map for preparing an AM Plan is shown in **Diagram 3**.

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<sup>1</sup> Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13

### Diagram 3- Road Map for preparing an Asset Management Plan

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



## 3 Levels of Service

### 3.1 Customer Research and Expectations

There is currently no specific research on customer expectations. Future revisions of this AM Plan will incorporate customer consultation on service levels and identifying associated service level costs.

Importantly the Shire has received feedback on transport assets through Community Surveys and as part of fielding questions during Ordinary Council Meetings. This preliminary feedback will assist Shire in matching the level of service required, service risks and associated consequences with customer expectations along with the ability and willingness to pay service level costs.

### 3.2 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Shire of York's vision, mission, goals, and objectives.

#### **Our vision is:**

*Community, Councillors and Council staff all contributed to the vision and stated that they wanted the Shire of York to be:*

- *A proud community, which values and preserves its history, heritage, rural character, and country lifestyle.*
- *A cohesive and vibrant community, respecting diversity and working together with a strategic vision*
- *A friendly and safe place with strong community spirit*
- *An economically strong community, with growth in employment, businesses, agriculture, and tourism*
- *A place with easy access to a full range of social services, including medical, education, law, and order*
- *A unique and beautiful place, attractive to residents, businesses, and visitors – a town where people can come to learn and experience different things away from the city*
- *A place with hope for the next generation, where heritage, the natural environment, farming, and new developments are in balance*
- *A place of opportunity where our young people have a sense of what it means to belong to a community and be included*
- *A community recognised locally, nationally, and internationally for its heritage, arts and crafts, and approach to tourism*
- *A Council, which provides leadership and vision, and is committed to working with all the diverse elements of the community to create a future of promise.*

#### **Our mission is:**

- *To Build our History*
- *To Create our Future*

Strategic goals have been set by the Shire. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in **Table 3.2**.

**Table 3.2: Goals and how these are addressed in this Plan**

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
The Place to Be	To be a close-knit community full of life, in a welcoming and accessible place for all.	Vital transport connections
Driving the York Economy Forward	To have a vibrant, diverse, and prosperous local economy which creates local jobs, business opportunities and a positive image for the Shire	Vital transport connections
A leader in sustainable environment	To be a place which is renowned for the quality of its natural environment, the astounding beauty of the landscape, and the care taken by the community	Not applicable
Built for lifestyle and resilience	To have a built environment which supports community, economy, and the environment, respects the past and creates a resilient future.	Vital transport connections
Strong Leadership and Governance	To have an effective and responsive leadership and governance, where a sense of collective purpose and shared direction combine to work together.	Provide well managed and sustainable assets.

### 3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Bridge service are outlined in **Table 3.3**.

**Table 3.3: Legislative Requirements**

Acts	Subordinate Requirements	Requirement
Local Government Act 2020	Regulations, 1996 Functions and General Regulations, 1996 Financial Management Regulations, 1996 Administration Regulations, 1996	Annual Valuation Budget and Approval Financial Reporting Governance Procurement Rules IPR Framework Accounting standards
Planning and Development Act 2005	Town Planning Scheme Local Planning Strategy	State Transport strategy
Main Roads Act 1930	Intergovernmental agreements	Bridge load limits Signage and line marking requirements Heavy vehicle regulation
Road Traffic Code (Traffic Act 1974 and various other Acts)	Design Standards As of right usage	Bridge Infrastructure requirements to meet as of right use Bridge Safety Requirements
Occupational Safety and Health 1984	Occupational Health and Safety Regulations	Safe work practices Safety at worksites Public Safety
Limitation (of Public Liability) Act 2005	Common law Insurance Requirements	Asset inspection and management requirements Evidence based maintenance system addressing risks appropriately
Disability Services Act	Universal Access	Universal access provisions
Environmental Protection Act	Environmental Protection Regulations Waterways Regulation	Protection of the environment Native Vegetation Clearing
Waterways Conservation Act, 1976	Regulations	Control of works in declared waterways
Aboriginal Heritage Act, 1972	Heritage Native Title	Works affecting heritage sites and land subject to Native title claims
Record Keeping Act	Preservation of public records	Record keeping

### 3.4 Customer Values

Service levels are defined in three(3) key ways these are:

1. **Customer Values**- aspects of the service that are important to the customer
2. **Customer levels of service**- where the customer sees value in the service (requirements)
3. **Technical levels of service**- what is provided and the likely trend over time based on budget provisions.

**Table 3.4** provides a summary of customer values, current satisfaction levels and feedback.

**Table 3.4: Customer Values**

Item No.	Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
1	Functional, trafficable	Action requests	Acceptable	Acceptable
2	Functional, link places	Customer satisfaction survey	Acceptable	Acceptable
3	Affordable	Sustainably funded	Acceptable	Acceptable
4	Value for Money	Customer satisfaction survey	Acceptable	Acceptable
5	Compliant (including safe)	No accidents caused by faulty bridges	Acceptable	Acceptable
6	Amenable	No applicable to bridges	n/a	n/a
7	Environmentally Conscious	No applicable to bridges	n/a	n/a
8	Socially enhancing	No applicable to bridges	n/a	n/a

### 3.5 Customer Levels of Service

The Customer Levels of Service can be measured using the following three (3) service measure parameters:

1. **Condition**-How good is the service and what is the condition or quality of the service?
2. **Function**-Is it suitable for its intended purpose and/or is it the right service?
3. **Capacity/Use**- Is the service over or under used and/or do we need more or less of these assets?

**Table 3.5** summarises each of the service measure types (Condition, Function, Capacity/Use), the current performance, and the expected performance based on the current budget allocation.

The information in **Table 3.5** aims to measure fact related to the service delivery outcome (e.g., number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be considered more subjective.

**Table 3.5: Customer Level of Service Measures**

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Annually inspected	Percentage inspected	Currently 100%	100%
Condition	Annually maintained	Planned Maintenance works from inspection	0%	100%
Condition	Appropriate action when risk profile exceeds MRWA accepted LoS	1 bridge may have a reduce the Load Limit. SOY awaiting advice from MRWA	Currently 100%	100%
<i>Confidence levels</i>			High	High
Function	Assets comply with design, construction, and maintenance standards	Inspection of timber bridges by MRWA every 5 years and every 7 years for reinforced concrete	Currently 100%	100%
<i>Confidence levels</i>			High	High
Capacity	Bridges with unrestricted load rating	Percentage of bridges with no load restrictions	Unknown	unknown
<i>Confidence levels</i>			High	High

### 3.6 Technical Levels of Service

The Technical Levels of Service relates to the activities and allocation of associated resources to support activities that best achieve the desired customer values and customer levels of service. These are operational or technical measures of performance. Technical service measures are linked to the four (4) asset lifecycle phases and their associated programs(plans). Annual capital budgets (Capex) cover Acquisition and/or Renewal phases. Operating budgets (Opex) cover the Operation and Maintenance phase.

Descriptions of activities are summarized below:

**Phase 1-Acquisition- New Asset** -This involves the allocation of capital funds to acquire new asset. Examples of transport asset acquisitions include activities that may provide a higher level of service (e.g., Replacing a smaller bridge with longer span bridge, replacing an existing bridge with a new bridge with increased load capacity etc.) or a providing a new service that did not exist previously (e.g., Acquiring a new bridge).

**Phase 2- Renewal- Asset Renewal** -Renewal works typically involve the allocation of capital funds to return the service capability of an asset up to that which it had originally provided (e.g., Rehabilitation of bridge such as: replacing bridge deck or abutment, seismic retrofitting, like for like replacement works etc.)

**Phase 3- Operate/Maintain- Operational Services**-These are regular service activities and are known as “soft” services as they often fluctuate subject to service demand requirements for example opening hours, cleaning, mowing grass, energy requirements or inspections may be cyclical depending on certain times of the year or demand for services as a result of external factors such as events or seasonal changes.

**Phase 3- Operate/Maintain- Planned (Preventative) Maintenance Services** -Planned (Preventative) Maintenance activities are “hard” services. These maintenance activities are “known”, are routine in nature and deemed necessary maintain the asset to an appropriate service level to achieve the predicted service life of the asset. Examples of maintenance activities include, road patching, unsealed road grading, building and/or structure repairs. Not performing planned maintenance activities will directly result in a decreased service life of the asset.

**Phase 3- Operate/Maintain- Reactive Maintenance Services** -Reactive Maintenance activities are also “hard” services but are unpredictable and directly correlate with the performance of Planned Maintenance services, for example the failure to regularly perform shoulder maintenance grading of sealed roads may result in an increase in reactive maintenance mobilisations to address drainage or pavement issues after a significant weather event.

It is therefore important to balance maintenance programs with Planned (Preventative) Maintenance activities and Reactive Maintenance works in order to remove the risk of asset failure which is unlikely to match customer values or levels of service requirements.

Reactive Maintenance mobilisations are typically initiated using the Shire’s Action Request portal located on the Shire’s website.

**Role of Asset Manager** -Asset managers therefore need to plan, implement, and control technical service levels to influence service outcomes and asset life.<sup>3</sup> **Table 3.6** shows the expected activities provided under the current 10 year Planned Budget allocation and the required activities and associated budget forecasts recommended in this AM Plan.

<sup>3</sup> IPWEA, 2015, IIMM, p 2|28.

**Table 3.6: Technical Levels of Service**

Lifecycle Phase	Program (Plan)	Activity Purpose	Activity Description	Current Performance Frequency*	Recommended Performance Frequency**
Phase 2 Acquisition	New Asset	Provide new river or rail crossings	No activity proposed	n/a	n/a
<b>Budget</b>				<i>\$nil</i>	<i>\$nil per annum</i>
Phase 2 Renewal	Asset Renewal- Mackie Siding Crossing	Restore service	Like for like with enhanced performance	n/a	<i>In excess of \$633,000 FY 23/24 (possible LRCI 'Grant' Funded)</i>
Phase 2 Renewal	Asset Renewal- Timber traffic bridges	Maintain Service level	Replace bridges or component parts	Subject to Main Roads inspections and program	Subject to Main Roads inspections and program
<b>Budget</b>				<i>\$nil</i> <i>Note: All the renewal works are 100% grant funded activity.</i>	<i>In excess of \$633,000 FY 23/24 (possible LRCI 'Grant' Funded)</i>
Phase 3 Operate/ Maintain	Operational Services – all bridges	Operate the bridges	Bridges inspected and kept clean and clear, insurances.	Quarterly inspection and clearing,	Quarterly inspection and clearing,
<b>Budget</b>				<i>\$37,000 per annum</i>	<i>\$37,000 per annum</i>
Phase 3 Operate/ Maintain	Planned (preventative) Maintenance Services- traffic bridges	Preserve the asset	Routine maintenance (Level 1 inspection, termite inspection and planned works in accordance with MRWA schedule)	Unknown	Annual

	<b>Planned (preventative) Maintenance Services - traffic bridges</b>	Preserve the asset	Tier 2 inspection, component replacement (heavy maintenance performed by MRWA)	Five (5) yearly	Five (5) yearly
	<b>Reactive Maintenance Services- traffic bridges</b>	Preserve the asset	Reactively respond to Action Requests	As required	As required
	Planned Maintenance Services – <b>pedestrian bridge</b>	Preserve the asset	maintenance inspection every 1 years	unknown	1 yearly
	Reactive Maintenance Services- <b>pedestrian bridge</b>	Preserve the asset	Reactively respond to Action Requests	As required	As required
<b>Budget</b>				<i>\$nil***</i>	<i>\$200,000 per annum</i>
<b>Phase 4 Disposal</b>	<b>Asset Disposal</b>	Asset disposal in absence of renewal	No planned disposals	n/a	n/a
<b>Budget</b>				<i>\$0 per annum</i>	<i>\$0 per annum</i>

**Note:**

\* Current activities related to Planned Budget.

\*\* Expected performance related to forecast lifecycle costs.

\*\*\* There is likely a need for annual Reactive Maintenance works in FY23/24 as part of backlog maintenance works. As regular inspections and works are completed reactive maintenance works should typically decrease, however it is reasonable to expect that reactive maintenance works resulting from storm damage or significant weather events may be required.

It is important to monitor the performance of all services and activities to ensure that there is no threat or potential decrease in the expected service life of the asset, decrease in service level or risk of asset failure.

The performance of all services and activities are reliant upon existing resource provisions and work efficiencies. Changing circumstances such as efficiency gains, changing technology and customer priorities may alter the performance of services and activities.

## 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 have been identified and documented.

### 4.3 Demand Impact and Demand Management Plan

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

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.

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

**Table 4.3: Demand Management Plan**

Changes	Current provision	Projection	Impact on Services	Demand Management Plan
Population Growth	No provision	Very slow growth or slight contraction is currently identified	No substantive impact	No requirement
Changing Age Demographic	No provision	Increasing older demographic	Increase focus on safety and universal access	Design new and replacement work
Infill Residential Development	No provision	Minimal infill development expected.	No substantive impacts	No requirement
Precinct Development	No provision	None planned	No substantive impact	No requirement
Service Expectation increases	No provision	Increased demand for heavier and larger mass trucks and agricultural implements	Increased service expectations	Assess whole of road network priorities and identify any bridge constraints, lobby for upgrades
Economy tightening	No Provision	Tightening of availability of finance Need to prioritise, justify, and demonstrate value for money from investments	Reduced funding and/or more competition for available funds	Better investment and decision making
Environmental Concerns	No provision	Increasing expectations to protect and increase vegetation and greenspace Increasing regulation and approval requirements	Cost increases and approval requirements for all works on bridges	Monitor need and respond.

## 4.4 Asset Programs to meet Demand

New assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in **Section 5.4**.

Acquiring new assets commits the Shire to ongoing operations, maintenance and renewal costs for the service life of the asset. These costs should be identified and considered in developing forecasts of future operations, maintenance and renewal estimates for inclusion in the Long-Term Financial Plan (Refer to **Section 5**).

## 4.5 Climate Change Adaptation

The impact of changing environmental conditions may have a significant impact on the management of assets and the services they provide. In the context of the Asset Management Planning process “Climate Change” can be considered as both a future demand risks and impact on assets and services are to be categorised according to specific weather events. How climate change impacts assets depends on the location and the type of services provided, as will the way in which asset managers respond and manage those impacts.<sup>2</sup>

As a minimum this AM plan considers how to manage existing assets against possible events in our region. Risk and opportunities identified to date are shown in **Table 4.5.1**

**Table 4.5.1 Managing the Impact of Climate Change on Assets and Services**

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Rainfall	Higher intensity rainfall events	Bridges flood out more often	Keep waterways clear, monitor erosion and need
Extended Dry periods	Longer periods without rain	No expected impacts on bridges	No requirement
Temperature	Higher temperatures and more frequent hot days	Expansion and contraction of structure	Regular inspections
Temperature	Colder temperatures and more frequent colder periods	Expansion and contraction of structure	Regular inspections
Fire risk	Increased fire risk	Risk of bridges burning	Clear vegetation annually or as required due to flooding. Include bridges in Fire management Plans

<sup>2</sup> IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

Any new assets that are developed should recognise the opportunity to design in resilience to significant weather events. Building resilience may yield the following benefits:

- Assets will withstand the impacts of higher intensity weather events
- Services can be sustained and maintained; and
- lower the lifecycle cost may result associated with a reduction in reactive mobilisations.

**Table 4.5.2** summarises key resilience opportunities for the construction of new bridge assets.

**Table 4.5.2 Building Asset Resilience to Climate Change**

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
Bridges	Higher intensity rainfall events results in an increase in bridge flooding	Flooding resilience, consider key design parameters and strategies including material construction.
Bridges	Higher increased risk of bushfire event results in greater risk of bridge burning	Fire resilience, consider key design parameters and strategies including material construction.

Importantly, the impact of climate change and associated weather events a new and complex discussion for asset managers. Asset monitoring accompanied by trends in significant weather events are opportunities for review and discussion in future revisions of this AM Plan.

## 5 Lifecycle Management Plan

The lifecycle management plan details how the Shire plans to manage and operate the assets at the agreed levels of service (Refer to **Section 3**) while managing life cycle costs.

### 5.1 Background Data

#### 5.1.1 Physical parameters

The assets covered by this AM Plan are shown in **Table 5.1.1**. The Shire owns 19 traffic bridges and 1 pedestrian bridge. The age profile of the assets included in this AM Plan are shown in **Figure 5.1.1**.

**Table 5.1.1: Assets covered by this Plan**

Class	Sub Class	Material	Quantity	Unit	Replacement Value
Bridge	Traffic Bridge	Timber Frame with concrete deck (sealed or unsealed)	19	each	\$49,676,500
Bridge	Pedestrian	Timber suspension	1	each	\$500,000
<b>Bridge</b>	<b>Total</b>	<b>All types</b>	<b>20</b>	<b>each</b>	<b>\$50,176,500</b>

Note: figures current as of 30 June 2022.

**Figure 5.1.1: Asset Age Profile**

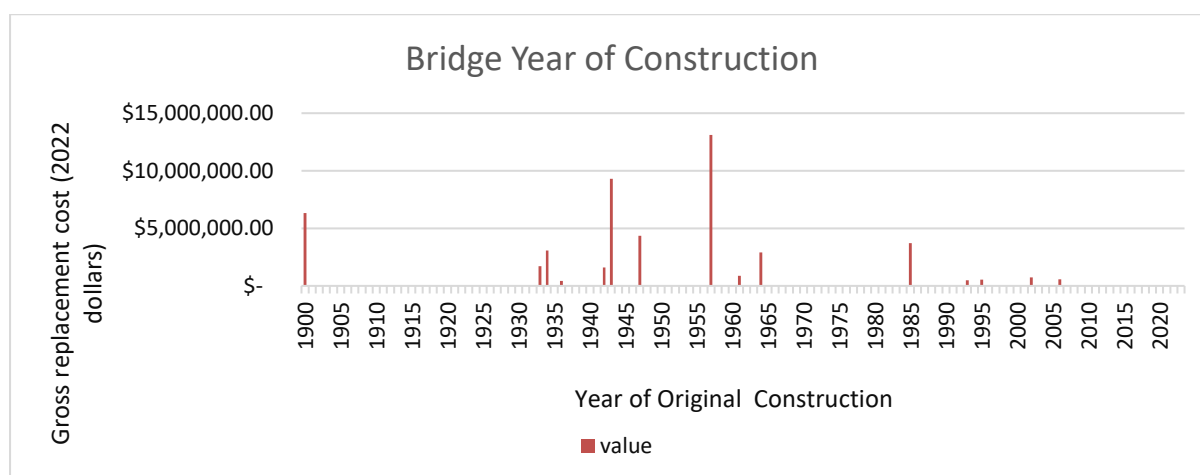


Figure 5.1.1: Asset Age Profile Summary

Asset_ID	Description	Asset Class	Asset Sub-Class	Material	Asset Construction Year
4556	York-Tammin Road	bridge	road	Reinforced Concrete	2002
4151	York-Tammin Road	bridge	road	Timber	1933
4152	Mannavale road	bridge	road	Timber	1964
4154	spencers brook - York Road	bridge	road	Timber	1942
4156	Burges siding road	bridge	road	Timber	1957
4157	Quellington road	bridge	road	Timber Hybrid	1900
4158	Quellington road	bridge	road	Timber Hybrid	1993
4195	Quellington road	bridge	road	Timber	1900
4161	Gwambygine east road	bridge	road	Timber Hybrid	1985
4164	top Beverley - York road	bridge	road	Timber	1947
4920	talbot hall road	bridge	road	Timber	1900
4165	Greenhills south road	bridge	road	Timber	1961
4153	Qualen west road	bridge	road	Timber	1900
4166	Mackies siding road	bridge	road	Prestressed Concrete	2006
4170	Warding road	bridge	road	Timber	1900
4674	Hamersley siding road	bridge	road	Reinforced Concrete	1995
4184	Glebe street	bridge	road	Timber	1943
587	Greenhills road	bridge	road	Timber	1934
5030	Revett place	bridge	road	Timber	1936
9999	pool street	bridge	pedestrian	0	1900

As asset data and information continues to improve (as a result of regular inspections and planned maintenance works), service life profiles are able to be further developed. Importantly this information will assist with planning bridge renewals and investment decisions into the future.

### 5.1.2 Asset capacity and performance

Where available, it is assumed that existing bridge assets current meet requisite design standards. Current asset information does not address all known deficiencies and asset managers will need to place close attention to inspection reports and flag deficiency requirements as part of a continuous

improvement process. Locations of bridges 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
Mackie Siding Crossing	Wash out damage and culvert failure has resulted in road closure restricting access to the crossing.
Crees Road Bridge	<b>This bridge has been</b> reportedly handed over to a private owner but still <b>listed in the Shire’s asset</b> register. Reputedly not functional. (Check ownership and any liability risk have been addressed)
Glebe Street Bridge	As at April 2023 the Shire is awaiting a structural assessment from MRWA and has taken steps to reduce the loading of the bridge to a 10-tonne load limit.

The above service deficiencies were identified from the bridge condition survey (2022) and following receipt of Main Roads Level 2 inspection reports (2023).

### 5.1.3 Asset condition

Traffic Bridge conditions are currently monitored by the following processes:

- Annual inspections and maintenance by Shire
- 5 yearly inspections by Main Roads
- 5 yearly a valuation condition survey (last done in 2022).

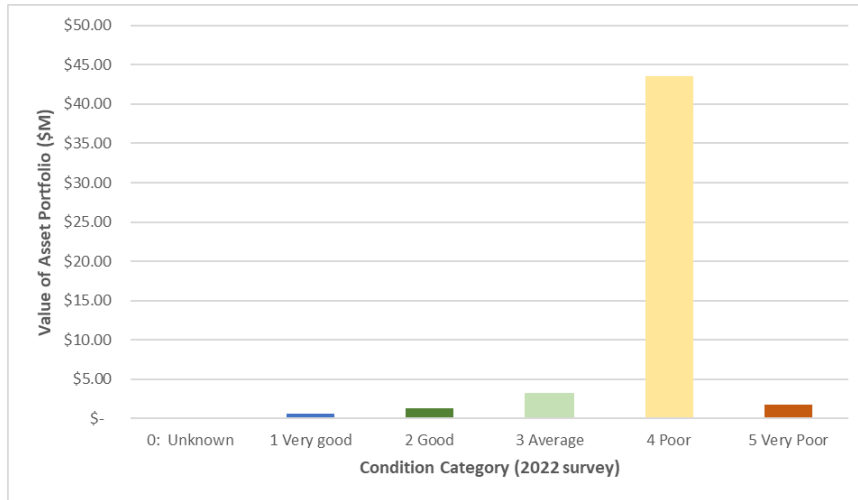
Conditions are typically measured using a points grading system<sup>4</sup>. Points scoring ranges from 1 – 5 as outlined in **Table 5.1.3**. The points scoring system allows for a consistent approach to measuring asset conditions and recording information in the asset register. This information enables effective decision making for the management of the asset. Finer grading systems may be used; however, this AM Plan uses the 1 – 5 grading scale for consistency and simplicity of communication.

**Table 5.1.3: Condition Grading System**

Condition Grading	Description of Condition
1	Very Good: free of defects, only planned and/or routine maintenance required
2	Good: minor defects, increasing maintenance required plus planned maintenance
3	Fair: defects requiring regular and/or significant maintenance to reinstate service
4	Poor: significant defects, higher order cost intervention likely
5	Very Poor: physically unsound and/or beyond rehabilitation, immediate action required

The condition profile of our assets is shown in **Figure 5.1.3**.

**Figure 5.1.3: Asset Condition Profile**



Conditions were assessed in 2022. Approximately 90% (by value) of bridges are in poor or very poor condition. Road bridge renewal and heavy maintenance is typically undertaken by Main Roads for the Shire using allocated state and commonwealth grant funding. The importance of routine inspections and planned (preventative) maintenance cannot be understated, as these are key activities that will assist the Shire in maintaining access to grant funding and identifying risks and issues early in order to reactively repair defects in order to mitigate service level reductions in across the portfolio.

Note: figures are current as at 30 June 2022.

## 5.2 Operations and Maintenance Plan

**Operational Services** include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

**Maintenance Services**, include Planned (preventative) Maintenance and Reactive Maintenance Services. These Maintenance Services are necessary to retain the asset to an acceptable condition and service level on an ongoing day-to-day basis and to ensure remains operational. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets are shown in **Table 5.2.1**.

**Table 5.2.1: Maintenance Budget Trends**

Year	Maintenance Budget Bridge Assets
2021-2022	\$44,035 (Insurance)
2022-2023	\$37,802 (Insurance)+\$105,000 (planned and reactive maintenance works) Total=\$142,802
2023-2024 (recommended)	\$205,000

The forecast Operational/Maintenance budget levels are adequate to meet current service levels. If Operational/Maintenance budgets are adjusted such that they result in a lesser level of service, then the risks and associated with the impact of decreased service levels and associated consequences require consideration. It is recommended that, and service risks be considered in a future Infrastructure Risk Management Plan.

The need for reactive maintenance works typically results from regular planned activities such as inspections or as a result of an Action Request. The prioritisation of reactive maintenance is undertaken by staff using experience and judgement and understanding the criticality and hierarchy of the asset within the portfolio and based upon the Infrastructure Risk Management Plan.

### Asset hierarchy

Asset hierarchy within the asset register allows for data to be structured in a systematic way. The hierarchy allows for easy interpretation of data for reporting and decision making. Key hierarchy parameters include the asset class, asset ID, description, subclass, material construction, year of construction along with other subcomponents. This information is used for service planning and delivery and financial reporting and budget purposes. Importantly Service Level Objectives are able to be set according to hierarchy.

A sample of the current asset hierarchy from the bridge asset register is shown in **Table 5.2.2**, as regular inspections and planned maintenance work is completed, additional component information is able to be added to the asset register.

**Table 5.2.2: Asset Service Hierarchy**

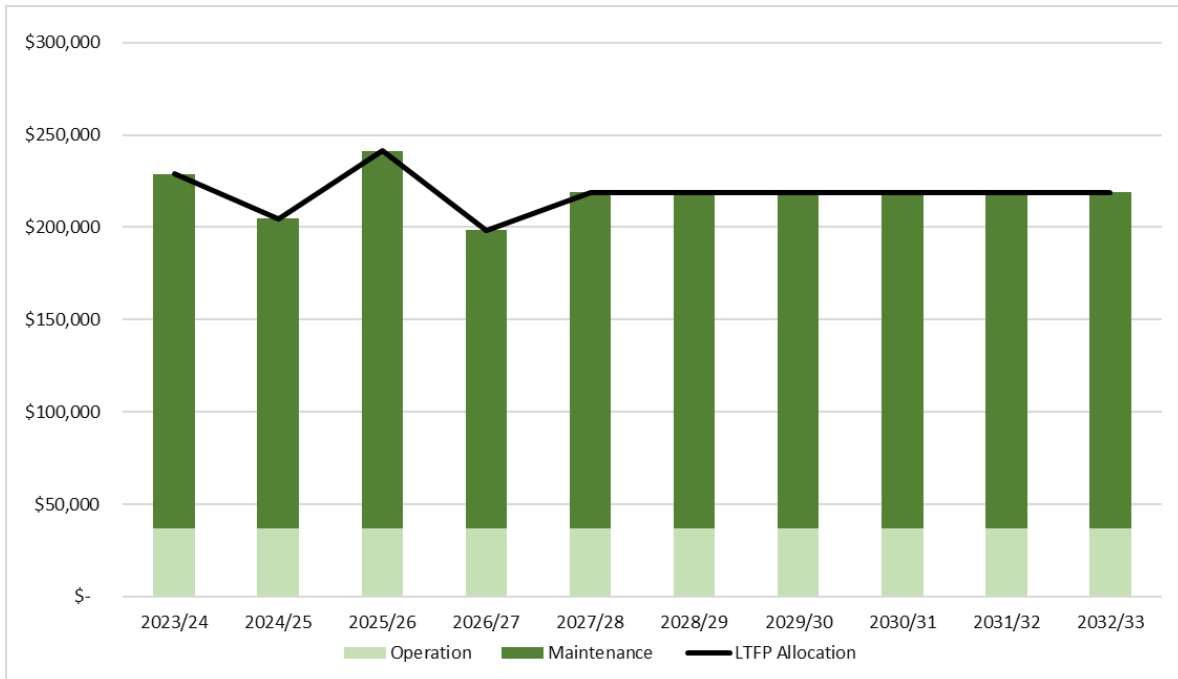
Asset Class	Asset Sub Class	Material	Service Level Objective
Bridge	Traffic	Reinforced concrete	Existing service level maintained to provide access to vehicles
Bridge	Traffic	Prestressed Concrete	Existing service level maintained to provide access to vehicles
Bridge	Traffic	Timber	Existing service level maintained to provide access to vehicles
Bridge	Traffic	Hybrid (timber/concrete)	Existing service level maintained to provide access to vehicles
Bridge	Pedestrian	Hybrid (swing bridge)	Off road bridges providing access to pedestrians only

Note: large box culverts are included in drainage assets. Fords and floodways are a combination of drainage culverts and road pavement.

### Summary of forecast operations and maintenance costs

Operations and maintenance costs are forecast to vary in relation to the total value of the asset stock. If additional assets are acquired, then future operations and maintenance costs will be forecast to increase. If assets are disposed of then the forecast operation and maintenance costs are expected to decrease. **Figure 5.2** shows the forecast operations and maintenance costs relative to the Long-Term Financial Plan.

**Figure 5.2: Operations and Maintenance Summary**



Note: All figure values are shown as at 30 June 2022. And the 5 yearly requirement for heavy maintenance of the pedestrian bridge.

It is reasonable to assume that if planned (preventative) maintenance services works have not been performed previously then backlog maintenance works may be identified as part of routine inspection works. As the backlog liability is currently unknown, budget figures will need to be adjusted to suit actual requirements as information comes to hand. It is also reasonable to assume that if routine planned maintenance works are not performed then this work will become “Deferred maintenance” (i.e., works that are identified for maintenance activities but unable to be completed due to available resources) and included in the infrastructure risk management plan.

### 5.3 Renewal Plan

Asset Renewal is major capital work which does not significantly alter the original service provided by the asset, 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 typically considered a new asset. Importantly future operations and maintenance costs should typically be considered alongside renewal works in order to maximise the return on investment.

Assets requiring renewal can be identified using two (2) different approaches these are:

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e., condition modelling system, staff judgement, average network renewals, or other).

- The typical useful lives of assets used to develop projected asset renewal forecasts are shown in **Table 5.3**. Asset useful lives were last reviewed on 30 June 2022.<sup>3</sup>

**Table 5.3: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Bridge, timber frame	60

The estimates for renewals in this AM Plan were based on the asset register, as updated 2022.

### 5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to ensure the reliability of the asset and the service it facilitates (e.g., replacing a bridge that has a 5-tonne load limit), or to maintain a quality standard to meet the service requirements (e.g., condition of a playground).<sup>4</sup>

It is possible to prioritise renewals by identifying assets or asset groups that have different criticality levels and risk rankings in the consequence of failure. The consequence of an asset failure may have subsequent impacts such as, impact on users, higher costs for emergency mobilisations and operational service outages and or other essential operational activities.

Other reasons may for prioritising renewals may be as a result of higher than expected operational or maintenance costs where renewal works may reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.<sup>5</sup> (e.g., new LED lighting in lieu of incandescent fittings).

Ranking criteria used to determine priority of identified renewal proposals is detailed in **Table 5.3.1**.

**Table 5.3.1: Renewal Priority Ranking Criteria**

Criteria	Weighting
Safety or compliance	Takes immediate priority 100%
Risk Consequence	25% out of 100%
Condition	40% out of 100%
Service Benefit	35% out of 100%

## 5.4 Summary of future renewal costs

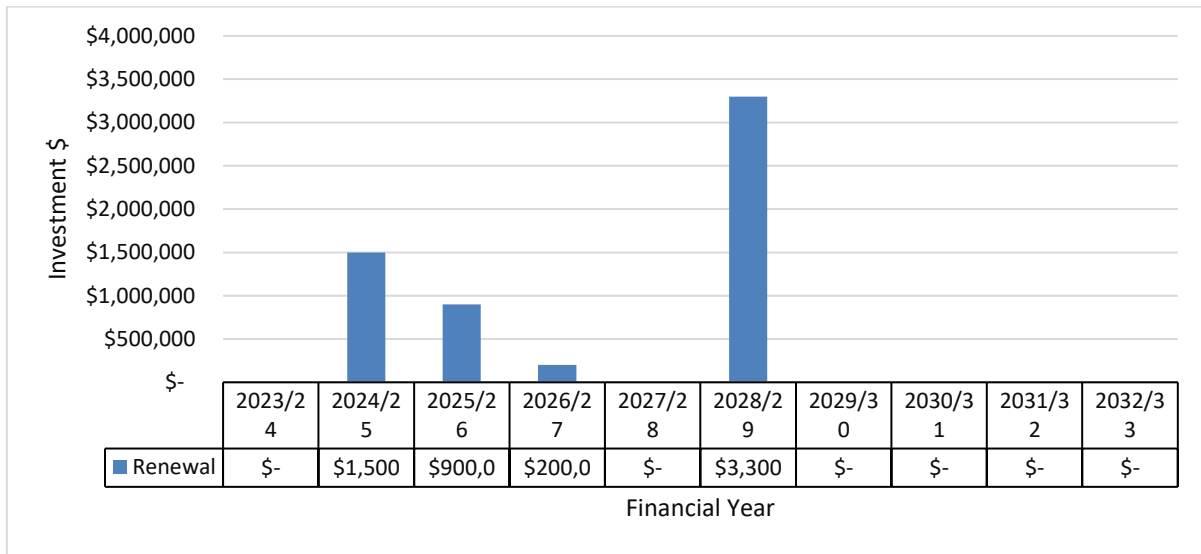
Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals in accordance with MRWA strategy is presented below **Figure 5.4.1**. A detailed summary of the forecast renewal costs is shown in **Appendix D**.

<sup>3</sup> Enter Reference to Report documenting Review of Useful Life of Assets

<sup>4</sup> IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

<sup>5</sup> Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

**Figure 5.4.1: Forecast Renewal Costs**



Note: All figure values are shown in current 30 June 2022.

Bridge renewals are currently 100% grant funded and scheduled by Main Roads WA on a state-wide priority basis.

## 5.5 Acquisition Plan

Acquisition planning and the acquisition of new assets may result from growth, demand requirements, social or environmental needs or donations. New assets are typically defined as works which will upgrade or improve an existing asset beyond its existing capacity or provide a new service.

### 5.5.1 Selection criteria

The proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the needs requirement. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programs. The priority ranking criteria is detailed in **Table 5.5.1**.

No new “Acquisitions” of bridges have been identified for the planning period.

#### Summary of future asset acquisition costs

No Acquisition has been identified in this Asset Management Plan.

As part of any new asset commitment, future funds should be allocated to operational and maintenance and renewal costs. This whole of lifecycle cost should also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets to understand the while of lifecycle cost.

Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

## 5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition, or relocation. Assets identified for decommissioning and disposal are shown in **Table 5.6**. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in **Table 5.6**. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

**Table 5.6: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
No disposals planned	n/a	n/a	[n/a	n/a

Note:

(i) that Bridges 4676 (Knotts Rd) and 4708 (Talbot RD West) still appear in the finance register but have been converted to concrete culverts and valued in 2022 as drainage assets.

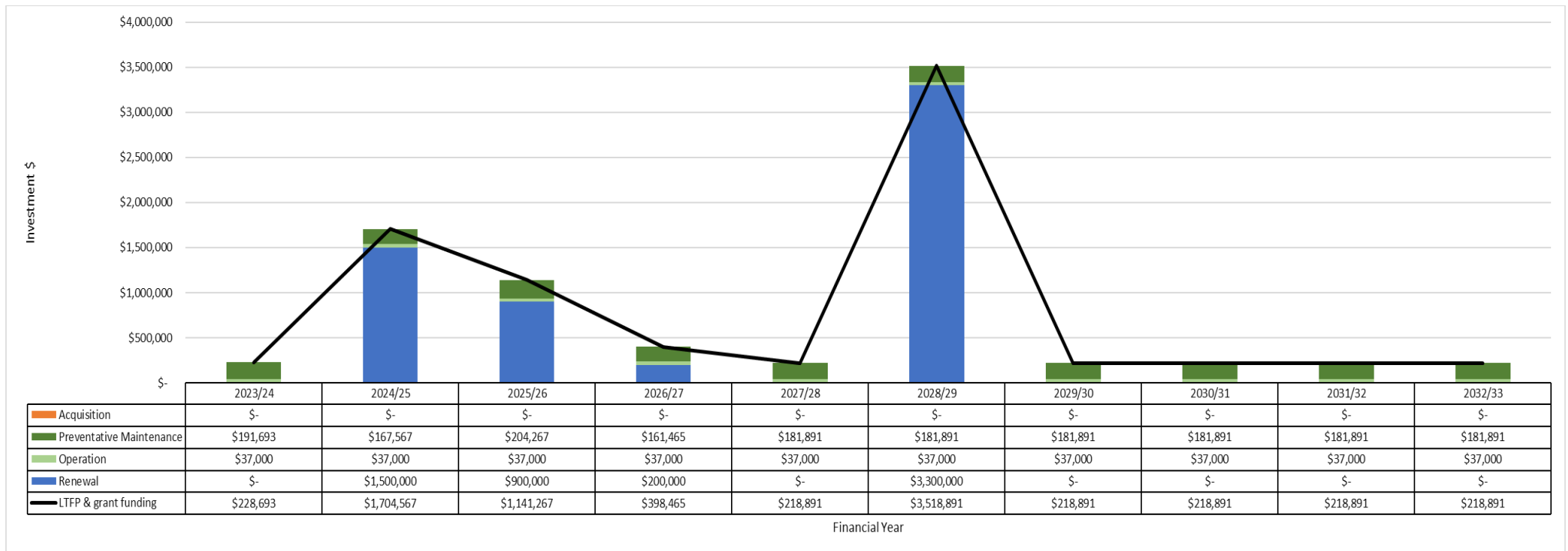
(ii) that bridge 4918 (Crees Rd) still appears in the finance register but has been identified as closed and now private.

## 5.7 Summary of asset forecast costs

The financial projections from this asset plan are shown in **Figure 5.7.1**. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

**Figure 5.7.1: Lifecycle Summary (all figure values are shown as at 30 June 2022)**



## 6 Risk Management

The purpose of infrastructure risk management is to document the findings 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 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’<sup>6</sup>.

An assessment of risks<sup>7</sup> associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock,’ reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

### 6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in **Table 6.1**. Failure modes may include physical failure, collapse, or essential service interruption.

**Table 6.1 Critical Assets**

Critical Asset	Failure Mode	Impact
All bridge assets are assumed critical	Wash out, burn down, overload	Bridge closure or load limit for nominally 6 months

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

### 6.2 Risk Assessment

The risk management process used is shown in **Figure 6.2**

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.

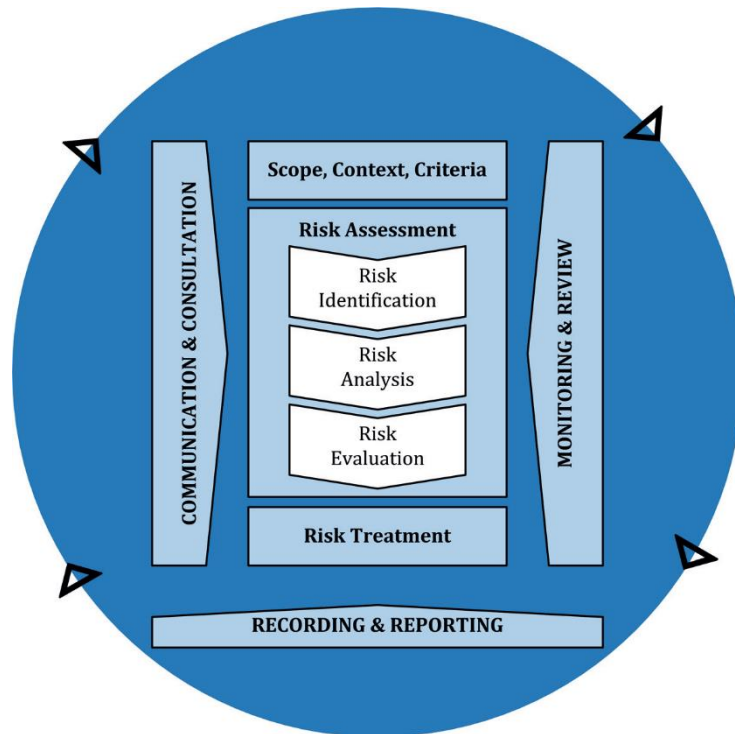
The process is based on the fundamentals of International Standard ISO 31000:2018.

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<sup>6</sup> ISO 31000:2009, p 2

<sup>7</sup> REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

Figure 6.2 Risk Management Process- Abridged



Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks<sup>8</sup> associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock,' reputational impacts, or other consequences.

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. The residual risk and treatment costs of implementing the selected treatment plan is shown in **Table 6.2**. It is essential that these critical risks and costs are reported to management and the Council.

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<sup>8</sup> REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

**Table 6.2: Risks and Treatment Plans**

Identified Risk	Consequence	Likelihood	Consequence Rating	Assessed Risk	Treatment	Residual Risk
Asset failure	Loss of service, loss of reputation. Loss of property access.	Moderate	Major	High	Regular inspections Provide timely maintenance Replace assets prior to failure Development of Emergency Response plans for service outages	Low
Lack of knowledge of assets	Unexpected event, loss of service, loss of reputation.	Moderate	Minor	Medium	Regular inspections	Low
Asset defect contributes to major accident	Major accident up to and including death.	Unlikely	Severe	High	Conform to design and construction standards	Moderate
Asset defect contributes to minor accident.	Minor accident including personal injury or property damage.	Moderate	Significant	Medium	Conform to design and construction standards Maintain and inspect assets regularly	Low
Public Liability claim	Financial Cost, Reputational damage.	Moderate	Major	High	Conform to design and construction standards Maintain and inspect assets regularly	Moderate
Universal access requirements not met	Disabled access restricted, reputation damage, potential damage claim, potential admin penalties.	Rare	Major	Medium	Conform to universal access standards	Low
Loss of Budget	Unable to fully complete improvement, replacement	Moderate	Major	High	Prioritise expenditure with focus on operation and	Medium

Identified Risk	Consequence	Likelihood	Consequence Rating	Assessed Risk	Treatment	Residual Risk
	or maintenance works costs incurred.				preservation of existing assets Adopt LTFP	
Main Roads or grants commission cease to fund or provide services	Significant financial impact to continue services	Unlikely	Major	Moderate	Manage bridges properly to ensure continued support	Low
Change in demand – service standards	Residents demand higher service standards (load limits or vehicle size) or new assets.	Likely	Major	High	Set service standards and budget in agreement with ratepayers	Low

**Note:** \* The residual risk is the risk remaining after the selected risk treatment plan is implemented.

### 6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to ‘withstand a given level of stress or demand,’ and to respond to possible disruptions to ensure continuity of service.

Resilience recovery planning, financial capacity, climate change risk assessment and crisis leadership.

Our current measure of resilience is shown in **Table 6.3** which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

**Table 6.3: Resilience Assessment**

Threat / Hazard	Assessment Method	Current Resilience Approach
Bushfire	None applied	Insurance of assets
Flood	None applied	Insurance of assets

### 6.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources. Ongoing performance monitoring and reporting is required ensure service levels match desirable risk levels.

#### 6.4.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years due to funding limitations. These include:

- Replace all older timber bridges
- Upgrade bridges to modern standards, increased widths or higher load limits
- Set aside reserve funds for replacement of the pedestrian bridge

#### 6.4.2 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition, or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences may include a reduction in load limits of bridges.

#### 6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences may include accepting risks of catastrophic rain or bush fire damaging bridges and leaving them out of service for a period of time and developing emergency response plans as a way of mitigating service outages.

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

## 7 Financial Summary

This section contains the financial requirements resulting from the information presented in the previous sections of this AM Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

### 7.1 Financial Sustainability and Projections

#### 7.1.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AM Plan for this service area. The two (2) indicators summarised below:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

#### Asset Renewal Funding Ratio

Asset Renewal Funding Ratio<sup>9</sup> 100%

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

Note the asset renewal funding relies on Main Roads identification of all renewal needs and grant funding to meet all renewal needs under the State Bridge replacement program.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in **Appendix D**.

#### Medium term – 10-year financial planning period

This AM Plan identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance, and renewal costs over the 10-year planning period is \$0.8 million on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$0.8 Million on average per year giving a 10-year funding balanced budget each year. This assumes identified maintenance need will be met.

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<sup>9</sup> AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

This indicates that 100% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AM Plan and ideally over the 10-year life of the Long-Term Financial Plan.

### 7.1.2 Forecast Costs (outlays) for the long-term financial plan

**Table 7.1.3** shows the forecast costs (outlays) required for consideration in the 10-year long-term financial plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the long-term financial plan.

A gap between the forecast outlays and the amounts allocated in the financial plan indicates further work is required on reviewing service levels in the AM Plan (including revising the long-term financial plan).

We will manage the ‘gap’ by developing this AM Plan to provide guidance on future service levels and resources required to provide these services in consultation with the community.

**Table 7.1.2: Forecast Costs (Outlays) for the Long-Term Financial Plan**

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2023-24	\$-	\$37,000	\$191,693	\$*	\$-
2024-25	\$-	\$37,000	\$167,567	\$1,500,000	\$-
2025-26	\$-	\$37,000	\$204,267	\$900,000	\$-
2026-27	\$-	\$37,000	\$161,465	\$200,000	\$-
2027-28	\$-	\$37,000	\$181,891	\$-	\$-
2028-29	\$-	\$37,000	\$181,891	\$3,300,333	\$-
2029-30	\$-	\$37,000	\$181,891	\$-	\$-
2030-31	\$-	\$37,000	\$181,891	\$-	\$-
2031-32	\$-	\$37,000	\$181,891	\$-	\$-
2032-33	\$-	\$37,000	\$181,891	\$-	\$-

Forecast costs are shown as at 30 June 2022.

\*Renewal costs have not been identified for Mackie Siding but will be required in the FY23/24 financial year.

## 7.2 Funding Strategy

The proposed funding for assets is outlined in the Entity’s budget and Long-Term financial plan.

The financial strategy of the entity determines how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

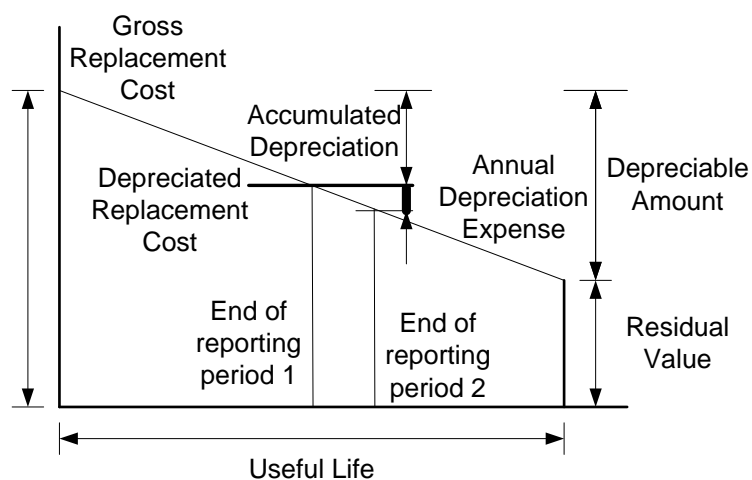
## 7.3 Valuation Forecasts

### 7.3.1 Asset valuations

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at Fair value by cost replacement method, as of 30 June 2022.

Replacement Cost (Current/Gross)	\$50,176,500
Depreciable Amount	\$50,176,500
Depreciated Replacement Cost <sup>10</sup>	\$18,283,500
Cumulative Depreciation	\$31,893,000
Annual Depreciation	\$ 836,275

**Figure 7.1- Relationship between asset depreciation and asset service life**



### 7.3.2 Valuation forecast

Asset replacement values are forecast to remain static as no additional assets are added.

<sup>10</sup> Also reported as Written Down Value, Carrying or Net Book Value.

Additional assets will add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

## 7.4 Key Assumptions Made in Financial Forecasts

In compiling this AM Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AM Plan are:

- That the Federal and State Government will continue to fund through the grants program scheduled replacement of all timber traffic bridges included replacement as required, scheduled heavy maintenance and level 2 inspection work.
- The asset register, condition data and other source information is a true reflection of the real world (see confidence statement)
- The assets are being (and have been) maintained and operated appropriately, such that useful lives will be achieved.
- No data was available to estimate a maintenance budget and an assumed 2% of value of assets was adopted.
- Costs of assets are as per the 2022 valuation report.
- That Bridge 4918 (Crees Rd) has been disposed of, and is now privately owned

## 7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale<sup>11</sup> in accordance with **Table 7.5.1**.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	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. High	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%

<sup>11</sup> IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

C. Medium	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 complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$
D. Low	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. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in **Table 7.5.2**.

**Table 7.5.2: Data Confidence Assessment for Data used in AM Plan**

Data	Confidence Assessment	Comment
Demand drivers	B	Readily predictable impacts
Growth projections	A	Growth is projected as minimal
Acquisition forecast	x	n/a
Operation forecast	D	This is an estimated based on no data and limited understanding
Maintenance forecast	D	This is an estimated based on no data and limited understanding
Renewal forecast - Asset values	C	Based on a comprehensive condition survey (2022), assessment of needs and forecast of works needed
- Asset useful lives	C	Industry standards have been adopted
- Condition modelling	C	Modelling was unsophisticated and based on generic assumptions. Data for more complete modelling not available
Disposal forecast	A	No disposals forecast

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

## 8 Plan Improvement and Monitoring

### 8.1 Status of Asset Management Practices<sup>12</sup>

#### 8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is the adopted Long term Financial Plan, extracts from Annual budgets and Annual reports and the 2022 Asset Valuation Report.

#### 8.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is extracts from the Asset Register, as updated 2022.

### 8.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in **Table 8.2**.

**Table 8.2: Improvement Plan**

Item	Description	Responsibility	Resources required	Priority	Timeline
R1	Continue level 1 inspection and maintenance of bridges in accordance with MRWA standards (Currently funded)	EMIDS	funded	Very High	June 2023
R2	Implement tracking of maintenance and operation expenses by bridge asset and activity	Finance	TBA	Very high	June 2024
R3	Implement the service levels on a trial basis pending later review by Council	EMIDS	TBA	Medium	June 2024
R4	Undertake Internal reviews of performance and issues with bridges and this AMP- June 2023,2024,2025.	EMIDS	TBA	Medium	June 2024, 2025, 2026

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<sup>12</sup> ISO 55000 Refers to this as the Asset Management System

R5	Undertake external 5 yearly AMS audit June 2026.	EMIDS	TBA	Medium	June 2028
R6	Adopt a data management plan including scheduled updates of bridge data.	EMIDS	TBA	Low	June 2025
R7	Review service levels with stakeholders	EMIDS	TBA	Very Low	June 2027

### 8.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets because of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years.

### 8.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,

The degree to which the 1–5-year detailed works programs, budgets, business plans and corporate structures consider the ‘global’ works program trends provided by the AM Plan,

The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,

The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

## 9 References

1. IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/IIMM](http://www.ipwea.org/IIMM)
2. IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/IIMM](http://www.ipwea.org/IIMM)
3. IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/namsplus](http://www.ipwea.org/namsplus).
4. IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/AIFMM](http://www.ipwea.org/AIFMM).
5. IPWEA, 2020 'International Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney
6. IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
7. IPWEA, 2012, Practice Note 6 Long-Term Financial Planning, Institute of Public Works Engineering Australasia, Sydney, <https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn6>
8. IPWEA, 2014, Practice Note 8 – Levels of Service & Community Engagement, Institute of Public Works Engineering Australasia, Sydney, <https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn8>
9. ISO, 2014, ISO 55000:2014, Overview, principles, and terminology
10. ISO, 2018, ISO 31000:2018, Risk management – Guidelines
11. Long Term Financial Plan, Shire of York, 2016
12. Corporate Business Plan, Shire of York, 2020

## Appendix A Acquisition Forecast

### A.1 – Acquisition Forecast Assumptions and Source

No acquisition of new bridges is proposed

### A.2 – Acquisition Project Summary

Specific project sites not identified

**Table A3 - Acquisition Forecast Summary**

Year	Constructed	Donated	Growth
2023	\$-	\$-	\$-
2024	\$-	\$-	\$-
2025	\$-	\$-	\$-
2026	\$-	\$-	\$-
2027	\$-	\$-	\$-
2028	\$-	\$-	\$-
2029	\$-	\$-	\$-
2030	\$-	\$-	\$-
2031	\$-	\$-	\$-
2032	\$-	\$-	\$-

## Appendix B      Operation Forecast

### B.1 – Operation Forecast Assumptions and Source

Operation costs include insurance fees. Inspection, white ant treatment, fungicide and similar costs are included in maintenance costs.

### B.2 – Operation Forecast Summary

See Maintenance budget

**Table B2 - Operation Forecast Summary**

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2023	\$37,000	\$-	\$37,000
2024	\$37,000	\$-	\$37,000
2025	\$37,000	\$-	\$37,000
2026	\$37,000	\$-	\$37,000
2027	\$37,000	\$-	\$37,000
2028	\$37,000	\$-	\$37,000
2029	\$37,000	\$-	\$37,000
2030	\$37,000	\$-	\$37,000
2031	\$37,000	\$-	\$37,000
2032	\$37,000	\$-	\$37,000

## Appendix C Maintenance Forecast

### C.1 – Maintenance Forecast Assumptions and Source

The estimate for maintenance is based on an assumption of annual white ant treatment, fungicide, replacement of damaged surfaces, guardrails, signs, clearing of scuppers and waterways, clearing of vegetation encroachment, repair of erosion damage, cleaning of joints, bolt tightening, banding and other maintenance activity per Main Roads guidelines. Historical data on costs is limited along with backlog maintenance liabilities. To this end no allowance has been made for reactive maintenance works that may arise as part of completing annual inspections or as a result of significant weather events.

### C.2 – Maintenance Forecast Summary.

**Table C2 - Maintenance Forecast Summary**

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2023	\$191,693	\$-	\$191,693
2024	\$167,567	\$-	\$167,567
2025	\$204,267	\$-	\$204,267
2026	\$161,465	\$-	\$161,465
2027	\$181,891	\$-	\$181,891
2028	\$181,891	\$-	\$181,891
2029	\$181,891	\$-	\$181,891
2030	\$181,891	\$-	\$181,891
2031	\$181,891	\$-	\$181,891
2032	\$181,891	\$-	\$181,891

All costs are as at 30 June 2022.

Note \$15,000 extra every 5 years for Pool St Bridge heavy maintenance (Pedestrian Bridge)

## Appendix D      Renewal Forecast Summary

### D.1 – Renewal Forecast Assumptions and Source

The renewal forecast is based on an existing backlog of works and planned completion of all backlog and emerging need over a 10-year period

### D.2 – Renewal Project Summary

No renewal projects identified

### D.3 – Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2023	\$-	\$*-
2024	\$1,500,000	\$-
2025	\$900,000	\$-
2026	\$200,000	\$-
2027	\$-	\$-
2028	\$3,300,333	\$-
2029	\$-	\$-
2030	\$-	\$-
2031	\$-	\$-
2032	\$-	\$-

### D.4 –Renewal Plan

The renewal plan is managed by Main Roads WA as a state-wide program.

\*Mackie Siding Costs are not Captured in the Renewal Forecast summary, a requirement of circa \$633K is estimated to be required in 2023.

## Appendix E Disposal Summary

### E.1 – Disposal Forecast Assumptions and Source

No disposals forecast.

### E.2 – Disposal Project Summary

No disposals forecast

### E.3 – Disposal Forecast Summary

Table E3 – Disposal Activity Summary

Year	Disposal Forecast	Disposal Budget
No disposal	\$-	\$-

