GLAMORGAN SPRING BAY COUNCIL

ASSET MANAGEMENT PLAN

BRIDGES

Adopted: 22/11/2022

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This Asset Management Plan is a supporting document used to inform Council's overarching Strategic Asset Management Plan.

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan details information on how Council manages its Bridge assets. It details actions required to provide an agreed level of service in the most cost-effective manner, while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 20 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

This plan covers all Council owned or maintained Bridges assets.

The Bridges network comprises:

Asset Category	Length/Number of Assets	Replacement Value
Bridges	59	$13,551,133
Ancillary works to bridge renewal	40% of bridge renewal value	$5,420,453
TOTAL	-	**$18,971,586**

The above infrastructure assets have significant total renewal value estimated at **$13,551,133**.

1.3 Levels of Service

The allocation in the planned budget is insufficient to continue providing existing services at current levels over the planning period.

The main service consequences of the planned budget are:

- A number of assets in very poor condition are due for renewal over the planning period, however they can only be renewed with additional grant funds. This means unless funds are secured in a timely way, some assets will remain in a very poor condition for several years before they are able to be renewed and may have their level of service downgraded.
- Currently there is insufficient budget allocation to resource complete asset management.
- There is an increase in the risks faced by Council (refer 1.6.3).

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Climate change (and associated increase in frequency of extreme weather events)
- An increase to bridge barrier standards and extent
- Increased tourism

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand (where required). Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Identify list of strategic improvements to reduce the risk of ongoing damage due to increased frequency of extreme weather events
- Identify upgrades required to meet with current standard drawings, prioritise these accordingly, and include in the planned budget
- Tourist numbers to be monitored over the next five years

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this Asset Management Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the Asset Management Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Plan period of 10 years. Therefore, a summary output from the Asset Management Plan is the forecast of 10 year total outlays, which for Bridge assets is estimated as **$4,122,690** or **$412,269** on average per year with additional funds required for ancillary works upgrades.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is **$2,616,240 or $261,624** on average per year as per the Planned Budget. This is **63%** of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the Long Term Financial Plan can be provided by council. Bridge renewal funding is supplemented by the Bridge Renewal Grant Program from the Federal Government. Not all applications for funding will be successful however, or timely.

The informed decision making depends on the Asset Management Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Bridges leaves a shortfall of $150,645 on average per year of the forecast lifecycle costs required to provide services in the Asset Management Plan, compared with the Planned Budget currently included in the Long Term Financial Plan. This is shown in the figure below.

Additionally, council will factor in the cost of ancillary works for bridge renewals in budget estimates.

Forecast Lifecycle Costs and Planned Budgets

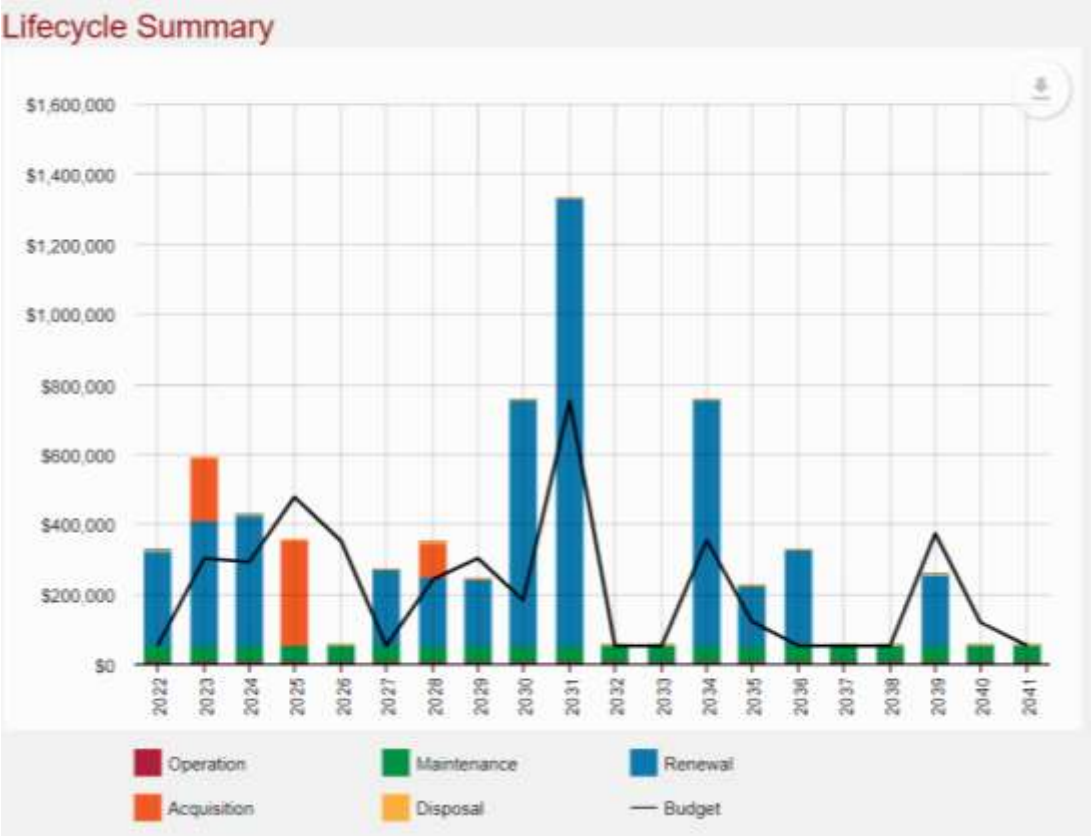


Figure values are in current dollars.

We plan to provide Bridge services for the following:

- Operation, maintenance, renewal and acquisition of roadway assets, endeavouring to meet service levels set by Council in annual budgets.
- Within the next 10 years the following major renewals are forecasted: Wielangta Road Bridge (17 Acre Creek); Blindburn Creek, Rosedale Road; Wielangta Road Bridge (Sandspit Flood Opening); Wielangta Road Bridge (Griffiths North); Saggy Creek, Rosedale Rd; Ravensdale Rivulet, Strip Road; McNiells Road Bridge (Kit Owen Creek); Brockley Road Bridge (Prosser River); Unnamed Creek, Glen Gala Road; Saltwater Creek, Footbridge off Esplanade; Seaburne Creek, Banwell Rd; Mitchelmores Creek, Swanston Rd; Apsley River, Rosedale Rd; Prosser River, Woodsden Rd; Prosser River, Brockley Rd.

1.6.2 What we cannot do

We currently do **not** allocate enough budget to sustain these services independently, at the proposed standard or to provide any new services being sought. Works and services that cannot be provided under present funding levels are:

- We cannot undertake bridge renewals when they fall due without Federal Government grant assistance.
- We cannot replace bridges where significant storm damage occurs without grant funding assistance.
- We cannot acquire assets where there is no planned budget assigned to service the full lifecycle costs (acquisition, operation, maintenance, renewal and disposal) over the planning period.
- We cannot fund upgrade associated with bridge replacement where standards for ancillary infrastructure have increased or where climate change or road use requires an improved more costly replacement.

1.6.3 Managing the Risks

Our present budget levels are insufficient to continue to manage some risks in the medium term.

The main risk consequences are:

- Bridge renewal costs can include roadworks and guardrail upgrade costs associated with the bridge renewal. These combined can be up to 40% more than the bridge renewal values in the plan thereby adding a road cost factor to the bridge renewal expense.
- Reduced level of service due to underfunding
- Delays in acquiring grant funds cause a reduction in serviceability of assets
- Recurrent damage to assets due to increased frequency of flood events
- Reduced level of service due to acquisition life cycle costs not accounted for in the planned budget
- Inefficient use of funds for maintenance and renewal works due to lack of a strategic works plan
- Inability to fund upgrade where existing asset not fit for purpose.

We will endeavour to manage these risks by:

- Factoring into long term financial plans more realistic renewal estimates that include upgrade to meet fitness for purpose.
- Considering road and guardrail estimate costs in grant funding applications when renewals fall due
- Implementing measures to mitigate risks of downgraded asset serviceability. This may include implementing load limits and speed reductions among other measures.
- Ensure prioritised maintenance, renewals and acquisitions are budgeted for (works plan)
- Improve the resilience of vulnerable assets
- Minimising asset acquisitions and ensuring lifecycle costs are considered prior to acquiring new assets

1.7 Asset Management Planning Practices

Key assumptions made in this Asset Management Plan are:

- External funding (grants) will continue to be a major source of funding for renewals, noting a known gradual reduction in some of these grants over the planning period.
- Financial data used in the development of this plan was from the end of the 2021-22 financial year, with some amendments made based on asset condition assessment data received in December 2021.
- Professional Bridge Consultant data and reports for condition, value and service life have been used in producing this plan.
- No additional major Bridge assets are acquired by Council in the next 10 year period (excluding donated assets related to new subdivisions). If this changes the Asset Management Plan is to be updated to reflect this.

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling and may be supplemented with, or based on, expert knowledge.

The Asset Register was used to forecast the renewal lifecycle costs for this Asset Management Plan.

The estimated confidence level for and reliability of data used in this Asset Management Plan is considered to be in the **High** range (refer Table 7.5.1).

1.8 Monitoring and Improvement Program

The next steps resulting from this Asset Management Plan to improve asset management practices are:

- Review strategic maintenance and capital works programs for upcoming years. Use to inform Asset Management Plan and Long-Term Financial Plan updates
- Improve confidence in financial data used in Long Term Financial Plan and Asset Management Plan
- Assess yearly performance (budgeted vs. actual costs) and update Asset Management Plan and Long-Term Financial Plan accordingly
- Community/Council consultation required to ensure appropriate levels of service are being provided (reduce/improve level of service accordingly)
- Continually improve correlation between Long Term Financial Plan and Asset Management Plan
- Increase overall confidence and maturity of Asset Management Plan

2.0 Introduction

2.1 Background

This Asset Management 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 Asset Management Plan is to be read with Council's Asset Management Policy and Strategic Asset Management Plan, along with other key planning documents:

- Long Term Financial Strategy
- Long Term Financial Plan
- Glamorgan Spring Bay Council's 10-year Strategic Plan 2020-2029

Council is in the process of modernising its asset management practices to ensure they adhere to the *Local Government Act 1993.* Part of this process is the development of asset management plans, such as this document, and the above-mentioned strategic documents.

This Asset Management Plan covers all Council Bridges assets. For a detailed summary of the assets covered in this Asset Management Plan refer to Table 5.1.1 in Section 5.

The Bridgesnetwork comprises:

- Bridges
- Major Culverts

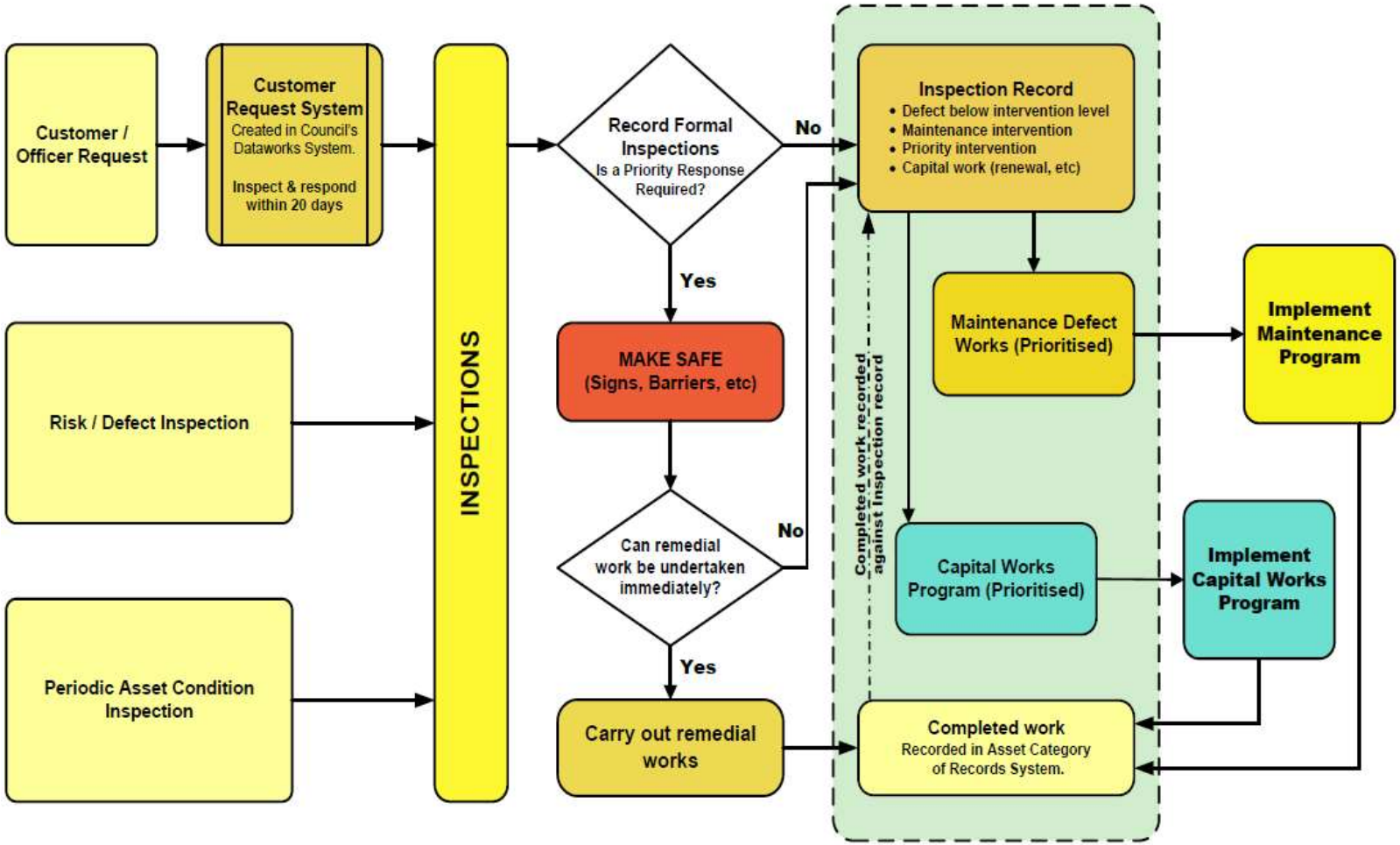
The Bridges assets included in this plan have a total replacement value of **$13,551,133**. For the purposes of this plan there is no value placed on upgrade to infrastructure or climate change adaptation required for bridge fitness for purpose or service level improvement.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the Asset Management Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services, while managing risks, ■ Ensure service is sustainable, ■ Make informed decisions, in the best interests of the community.
General Manager	■ Maintain a proactive approach to holistic asset management practices and ensure staff do the same. ■ Inform Councillors to enable educated decisions to be made.
Infrastructure Management Team	■ Maintain a proactive approach to holistic asset management practices. ■ Ensure the Asset Management Plan is used and updated regularly. ■ Inform Councillors to enable educated decisions to be made.
Asset Management Team	■ Inter-departmental officer group assigned the roles within Policy for implementation and improvement to asset management practice
General Public	■ Report shortcomings, damage, safety concerns and other issues with current road infrastructure.

Our organisational structure for service delivery from Bridgesassets is detailed below:



2.2 Goals and Objectives of Asset Ownership

Council's core business is to provide services to its community. Some of these services are provided by Bridges assets. We have acquired Bridge assets through purchase, contract, construction by Council staff, and by donation of assets constructed by others to meet increased levels of service.

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 infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- 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:

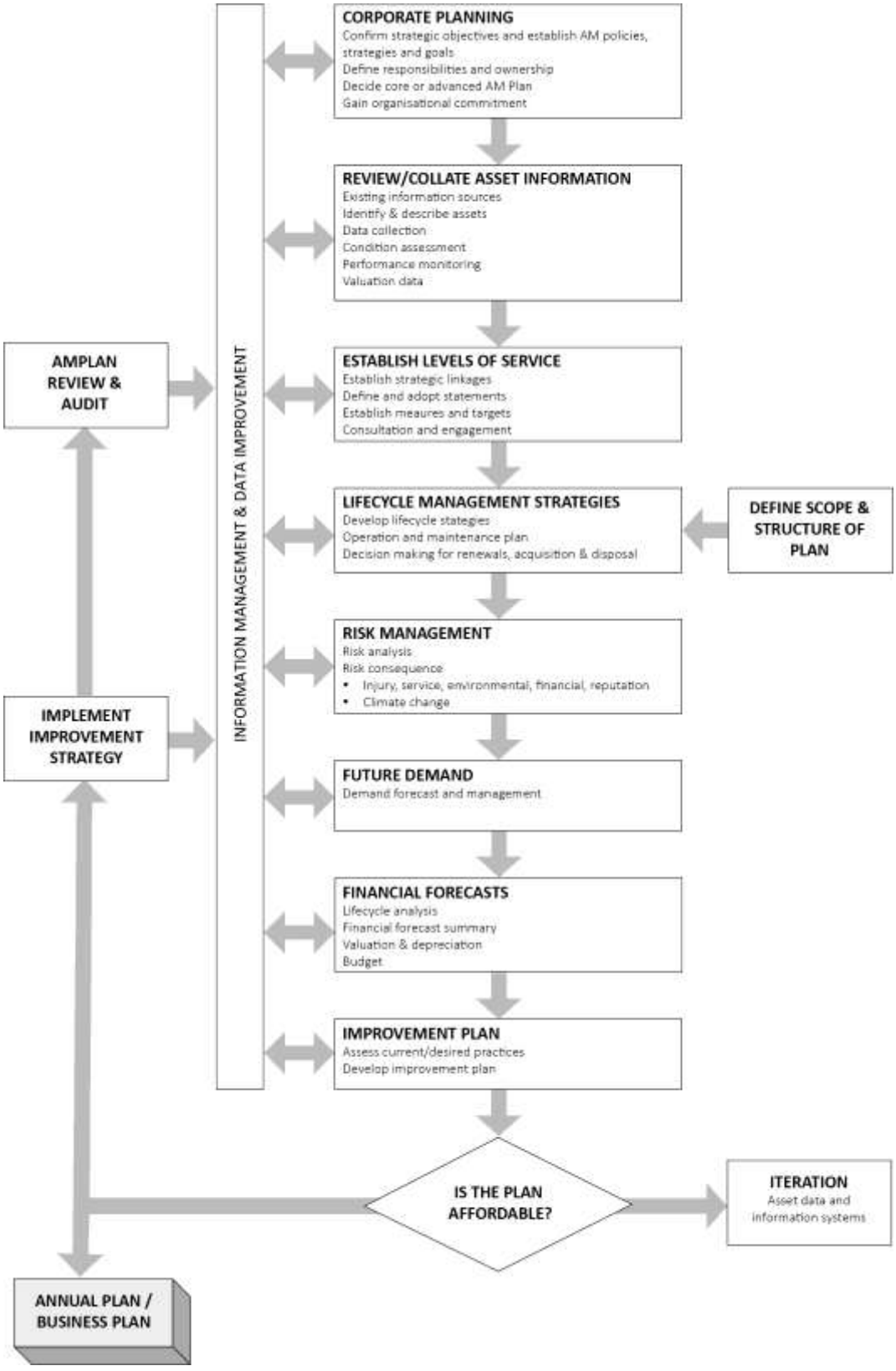
- International Infrastructure Management Manual [1]
- ISO 55000[2]

A road map for preparing an Asset Management Plan is shown below.

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

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



3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by Council. Future revisions of the Asset Management Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

Council undertakes community consultation for proposed developments. Council also receives vast community feedback on the services and facilities it provides. Budget submissions are invited from local district committees and community groups for Council consideration. Council's customer request system is used to determine trends in community expectations. This information is used in developing key planning documents and in allocation of budget resources.

3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Council's vision, mission, goals and objectives.

Our vision is:

We want Glamorgan Spring Bay to be: Prosperous, vibrant and inclusive. A place where people want to live, work and visit.

Our Primary Function and Activities:

Help and support our communities to develop and thrive.

- ***Providing direct, essential council services and accordance with LG legislation.***
- ***Making and enforcing by-laws for the benefit of the overall community.***
- ***Raising revenue to enable Council to perform its key functions.***
- ***Planning and creating recreational spaces and facilities.***
- ***Encouraging the Local Community to make the most of its strengths, resources and skills.***
- ***Advocating for the region with state and federal government and other key stakeholders in pursuing our plans and priorities and fulfilling our role.***
- ***Encouraging investment from individuals and businesses in development that fits with the values and character or our region.***
- ***Protecting the environmental values and amenity of the east coast.***

Strategic goals have been set by the Council. The relevant goals and objectives and how these are addressed in this Asset Management 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 Asset Management Plan
To provide safe and reliable Bridges for the community to use.	Maintain and develop Bridges to appropriate standards.	Continue to develop and maintain regular inspection of asset condition, defects and develop maintenance and capital works programs for inclusion in the Asset Management Plan. Refer Section 8.0.
Good Governance	Provide asset management services in a sustainable manner. Deliver services effectively and efficiently.	Completion, adoption and review of asset management plans (this plan)

Appropriate service levels	Identify current service levels and target sustainable levels	An ongoing task that will be monitored and improved. Refer Section 8.
Improved risk management	Identify and address all known high risk items relating to Bridge assets	Implement a structured approach to identify and manage significant risks. Refer Section 6.
Financial sustainability	Identify financial inefficiencies	Implement a structured approach to identifying financial inefficiencies.

3.3 Legislative Requirements

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

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a Long-Term Financial Plan supported by asset management plans for sustainable service delivery.
Work Health and Safety Act 2012	Sets out the roles and responsibilities to secure the health, safety and welfare of persons at work.
Vehicle and Traffic Act 1999	Details rules, responsibilities and enforcement.
Road and Jetties Act 1935	Provides for the appointment of a Commissioner of Highways and provisions for the construction and maintenance of roads and associated assets.
Australian Road Rules	The Australian Road Rules are incorporated into the State Traffic Regulations under the Road Traffic Act.

3.4 Customer Values

Service levels are defined in three ways, customer values, customer levels of service and technical levels of service.

Customer Values indicate:

- what aspects of the service is important to the customer,
- whether they see value in what is currently provided and
- the likely trend over time based on the current budget provision

Table 3.4: Customer Values

Service Objective:			
Customer Values	**Customer Satisfaction Measure**	**Current Feedback**	**Expected Trend Based on Planned Budget**
A safe Bridge network	Number of customer service requests	Some safety concerns raised from community	Expected to remain similar to existing, however isolated improvements to be identified and targeted for improvement.
A smooth riding Bridge network	Number of customer service requests	Regular customer service requests regarding condition of several unsealed rural roads	Expected to remain similar to existing

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition How good is the service? What is the condition or quality of the service?

Function Is it suitable for its intended purpose? Is it the right service?

Capacity/Use Is the service over or under used? Do we need more or less of these assets?

In Table 3.5 under each of the service measure types (Condition, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These are measures of 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 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	Quality of Bridge network	Conditions in asset register	**87 %** of overall asset replacement value in 'Very Good' or 'Good' condition **8 %** of overall asset replacement value in 'Fair' condition **5 %** of overall asset replacement value in 'Poor' or 'Very Poor' condition	Considered to deteriorate over the planning period
	Confidence levels		High (professional judgement supported by data sampling)	No change
Function	Appropriate Bridges in accordance with relative standards	Staff assessment and number of customer service requests	Bridges generally consistent with municipal or other relevant standards, with some assets requiring improvement due to inundation frequency.	Only high risk assets that have been identified are likely to be improved over planning period, hence a gradual improvement to these assets only.
	Confidence levels		High (professional Judgement with data evidence)	High (professional judgement with data evidence)
Capacity	Appropriate amount/ dimensions of Bridge assets	Number of customer service requests and road traffic count data	Based on customer service requests and demand drivers, existing service level considered adequate	Expected to remain similar to existing
	Confidence levels		High (Professional judgement supported by data sampling)	High (Professional judgement with data evidence)

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, there are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

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

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

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

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

Table 3.6 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the forecast activity requirements being recommended in this Asset Management Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Acquire assets that align with Council's core purpose	Number of acquisitions	Council acquires assets generally on availability of external funding (state/federal) or via developer contribution (e.g. new major culvert)	Only acquire assets that align with Council's core purpose and that Council can afford to maintain, operate, renew and/or dispose of (must consider full asset lifecycle costs)
		Budget	*$0 per year*	*$0 per year*
Operation	Keep bridges clear of debris – e.g. remove logs and debris after rain events.	Number of customer service requests	Varying frequency based on a number of factors, but primarily weather.	Current performance is considered adequate based on user feedback
	Provide timely emergency response to assist public and minimise disruption caused by temporary loss of use of asset	Community feedback	User feedback suggests current performance is adequate	Current performance is considered adequate based on user feedback
		Budget	*$8,000 per year (average over next 10 years)*	*$8,000 per year (average over next 10 years)*
Maintenance	Keep Bridge assets serviceable	Frequency of maintenance	Combination of reactive maintenance (weather and	Planned maintenance program based on risk associated with identified

[3] IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
			customer service request dependent) and formal maintenance program.	maintenance requirements.
	Keep Bridge assets safe.	Frequency of maintenance	Reactive minor repairs and minor upgrades are undertaken	Planned maintenance program based on risk associated with identified maintenance requirements.
		Budget	*$45,124 per year (average over 10 years)*	*$45,124 per year (average over 10 years)*
Renewal	Ensure Bridge assets remain in a serviceable condition	Frequency of renewal	Assets are renewed on a priority basis depending on asset condition.	20 year renewal program updated annually.
	Ensure Bridge assets remain in accordance with current standards	Frequency of renewal (including component renewal – e.g. bridge guardrail)	Assets are renewed on a priority basis depending on asset condition and available budget / grants	20 year renewal program updated annually.
		Budget	*$208,000 per year*	*$208,000 per year*
Disposal	Identify assets and activities that do not align with Council's core purpose	Number of assets and activities identified for disposal	No disposals are currently planned	Continue to monitor assets for potential disposals that do not align with Council's core purpose.
	Dispose of assets and activities that do not align with Council's core purpose	Number of identified asset and activity disposals undertaken	No disposals are currently planned	Continue to monitor assets for potential disposals that do not align with Council's core purpose.
		Budget	*$0 per year*	*$0 per year*

Note: * Current activities related to Planned Budget.

** Expected performance related to forecast lifecycle costs.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology growth and customer priorities will change over time.

4.0 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 in Table 4.3.

Population of the Glamorgan Spring Bay Local Government Area was estimated in 2018 to be 4,528 while in 2021 the population had actually grown to 5012. This growth has far exceeded the Department of Treasury and Finance projections and as such no projections are currently available until their modelling has been updated.

Holiday populations to second homes and shacks further increase the overnight accommodation numbers and tourism also adds to the load on assets. At present, no factor is being applied to indicate a need to upgrade infrastructure on a population pressure basis.

It is considered that the existing capacity of the bridge network is sufficient to meet demands over the planning period however, there are some specific concerns for Council at present, these being:

Impact of increased storm and flooding events – the last few years experiencing repeated La Nina weather patterns results in frequent inundation of several bridge assets. These are wooden bridges on Brockley Road, Woodsden Road, Rosedale Road and floodways on Grange Road. The high rainfall events create strains on the existing bridges, buttresses, wing walls and decks and require road closures. There is significant migration of river stone associated with these events as well which requires a higher level of, and cost for, clearing after rain events.

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 (if required). 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 Asset Management Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population	5,012 people in 2021.	TBA	The change is not foreseen to impact services	No impact to services, hence management plan is not required.
Demographic	Median age of 57 years (2021)	Increase in median age to approx. 65 years by 2039	The change is not foreseen to impact services	No impact to services, hence management plan is not required.
Climate change	Experiencing more extreme weather patterns and events	Continue to experience increased frequency and intensity of extreme weather events	Increased maintenance and renewal costs due to flood damage.	Identify list of strategic improvements to reduce the risk of ongoing damage.

Upgrade in bridge guardrail standards	Currently unaudited	Some upgrades required over planning period	Increased renewal costs to meet with current standards	Identify upgrades required to meet with current municipal standards, prioritise these accordingly and include in the planned budget
Tourism	Tourist region (domestic and international visitors)	Tourist visitation expected to increase over planning period	Increased safety, signage and overall standard of road infrastructure	To be monitored over next five years
Development	Multiple new subdivisions	Potential for new footbridges and major culverts	New services created	Monitor impacts

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be supported by grants or council funded. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the Long Term Financial Plan (Refer to Section 5).

4.5 Climate Change Adaptation

The impacts of climate change will have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Plan, climate change can be considered as both a future demand and a risk.

How climate change impacts on assets varies depending on the location and the type of services provided, as does the way in which we respond and manage those impacts.[4]

As a minimum we consider how to manage our existing assets given potential climate change impacts for 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
Increased frequency and intensity of extreme rainfall events	Upgrade to some Bridge assets required on renewal	Increased drainage upgrade and maintenance costs	Prioritise susceptible sites for improvement works to reduce vulnerability
Sea level rise	0.24 m (2050) and 0.92 m (2100) sea level rise (planning allowances)	No material impact on Bridges or culverts	

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

[4] IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

Table 4.5.2 summarises some asset climate change resilience opportunities.

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact on these assets?	Build Resilience in New Works
Bridges	Greater flood risk to bridges	Ensure bridges are renewed allowing for climate change forecasts (increased design flows due to increased intensity and frequency of rainfall events)

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this Asset Management Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council 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 Asset Management Plan are shown in Table 5.1.1.

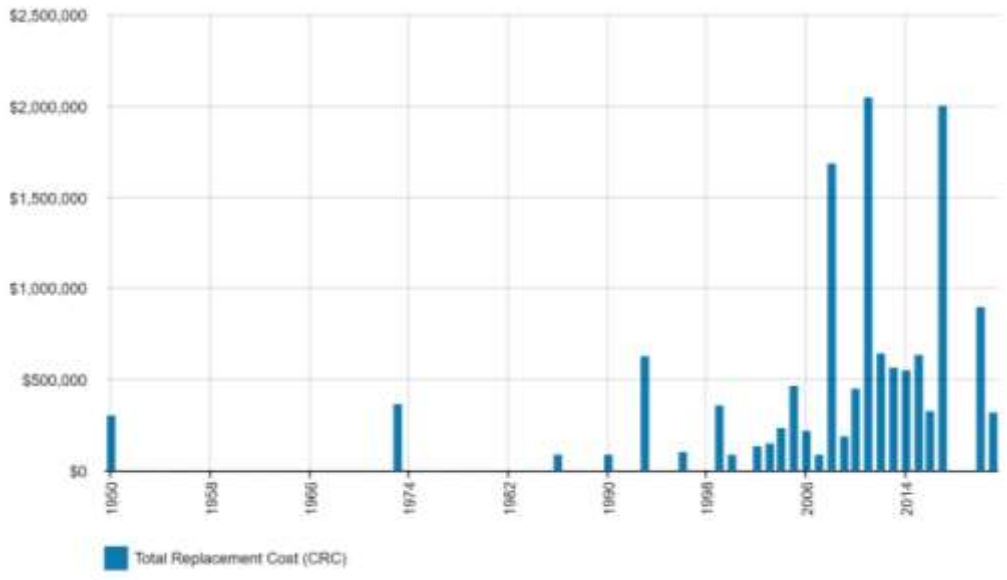
Table 5.1.1: Assets covered by this Plan

Asset Category	Length/Number of Assets	Replacement Value
Bridges	57	**$13,551,133**
Ancillary works to bridge renewal	40% of bridge renewal value	$5,420,453
TOTAL	-	**$18,971,586**

All figure values are shown in current day dollars.

The age profile of the assets included in this Asset Management Plan is shown in Figure 5.1.1. Replacement cycles associated with the bridge portfolio is generally spread out sufficiently for progressive renewal. There are a few years where multiple bridges reach the end of their asset life and these can be spread across years before and after if necessary to minimise financial impacts and to maximise asset life.

Figure 5.1.1: Asset Age Profile



5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there are insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Rosedale Road Bridge	Regular Inundation causing road closure
Glen Gala Road Bridge	Regular Inundation causing road closure
Old Coach Road Bridge	Regular Inundation causing road closure
Grange Road Bridge	Regular Inundation causing road closure
Woodsden Road Bridge	Occasional Inundation causing road closure
Brockley Road bridge (Prosser River), Buckland.	Occassional flooding of bridge and adjacent road, cuts off several properties.

The above service deficiencies were identified from staff knowledge, the recent condition assessment undertaken by *AusSpan* (August 2022) and user feedback.

5.1.3 Asset condition

Council's bridge condition inspection program is undertaken six monthly by *AusSpan,* with all bridges visually inspected, and updates made to the asset register. This is a well-structured and long running inspection program, which has led to the development of a high quality asset register and **87 %** of Council's bridges being in a **'very good'** or **'good'** condition.

Condition is measured using a 1 – 5 grading system[5] as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the Asset Management Plan results are translated to a 1 – 5 grading scale for ease 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 bridge assets is shown in Figure 5.1.3.

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

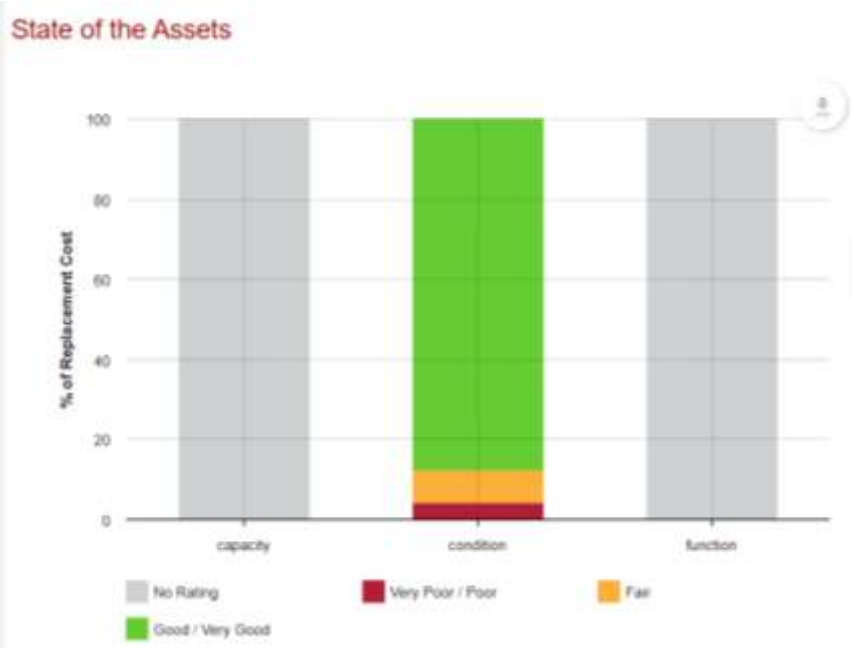


Figure 5.1.3: Asset Condition Profile (Bridges)

Figure 5.1.4 shows **87 %** of Council's total bridge asset value is in **'very good'** or **'good'** condition (refer Table 5.1.3), with only **13 %** in a **'poor'** or **'very poor'** condition.

All figure values are shown in current day dollars.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include asset inspection, and staff costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include minor timber bridge deck works.

The trend in maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget $
2020-21	$23,301
2021-22	$47,038
2022-23	$53,124

Maintenance budget levels are considered to be inadequate to meet projected service levels, which may be higher than or equal to current service levels to effectively mitigate flooding damage. The maintenance budget has been supplemented in recent years by Grant funding which became available in response to high rainfall and flooding events. Where maintenance budget allocations are such that they will result in a lesser level of

service, the service consequences and service risks have been identified and are highlighted in this Asset Management Plan. Reference should also be made to Council's Risk Management Policy and Risk Management Strategy (adopted in June 2020).

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

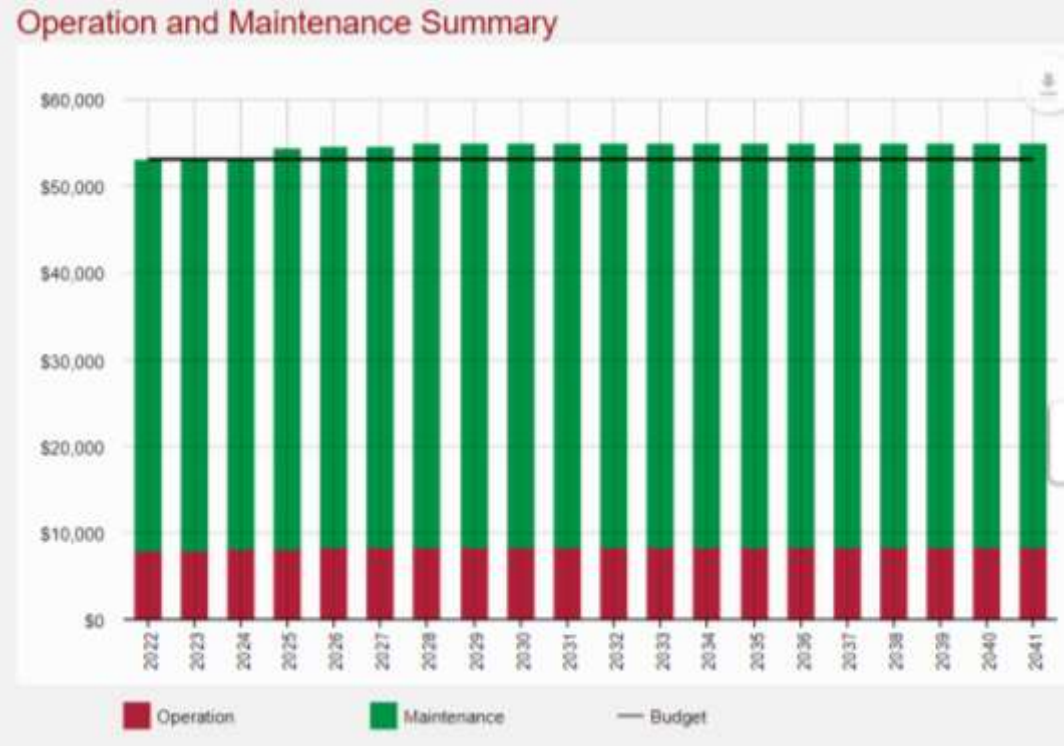
Asset hierarchy

There is no hierarchy associated with Bridge assets. Each asset is as likely as any other to be subjected to the maximum allowable axle loading from heavy vehicles. Council's roads, which feed bridges, generally are not high volume although some rural roads are subject to intermittent log traffic.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

As can be seen in Figure 5.2, maintenance cost forecasts increase a little during the planning period due to projected donation of assets. Figure 5.2 highlights that Council does not currently have sufficient planned budget to undertake forecast operation and maintenance throughout the planning period.

The above budget is based on limited severe weather events where damage to assets is incurred.

Deferred maintenance (i.e. works that are identified for maintenance activities but unable to be completed due to available resources) should be included in Section 6.0 of this plan where this poses a 'high' or 'very high' risk to Council – Refer Table 6.2.

5.3 Renewal Plan

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 considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- 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 in January 2022. It is to be noted that these are typical values and individual values in asset registers vary.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Concrete bridges	50-80 years
Timber bridges	25-40 years
Composite Structures	25 – 80 years

The estimates for renewals in this Asset Management Plan were based on the asset register method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 20 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. to improve the resilience of the structure).

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[6]

The 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
Condition	30 %

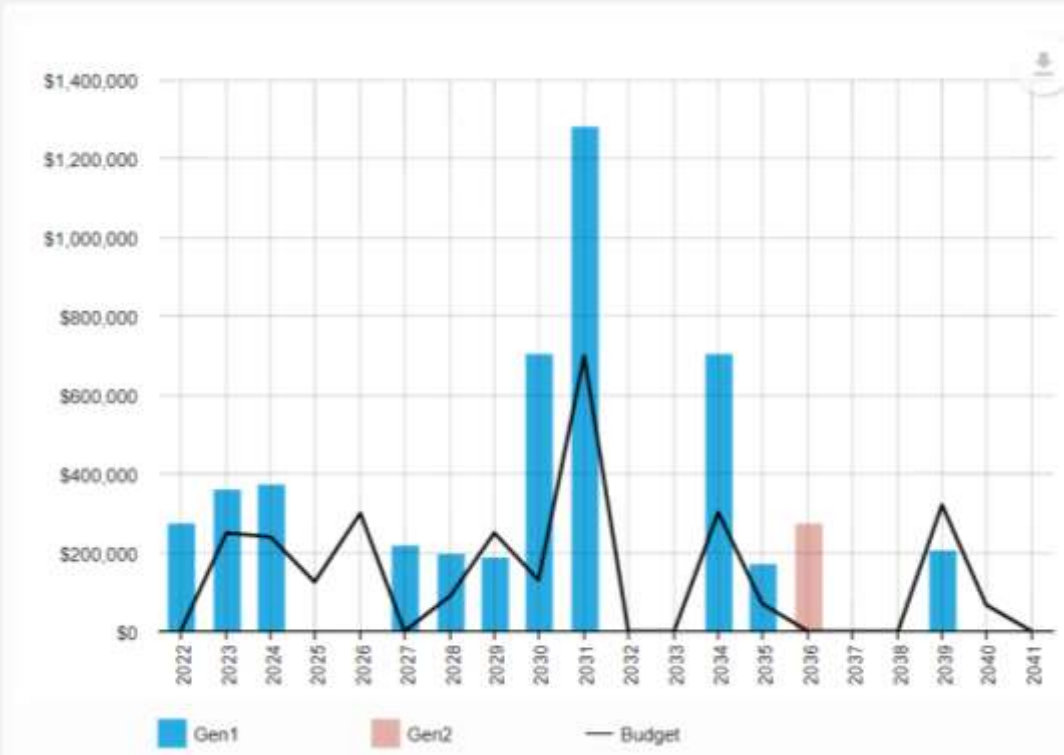
[6] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Criteria	Weighting
Usage/demand	30 %
High maintenance costs that could be reduced significantly by renewal	20 %
Risk/safety/failure consequence	20 %
Total	**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 are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

The forecast renewal costs are greater than the proposed renewal budget over the planning period, this is highlighted in Figure 5.4.1.

The lifecycle forecast is the total foreseen renewal costs over the planning period, shown at the projected year of renewal. 2022 shows a renewal cost with no budget to meet the need which becomes an asset renewal backlog. This asset is 17 Acre Creek Bridge and an application for Federal grant funds to enable the renewal was unsuccessful, hence the budget line at $0.

The disparity between budget values derived from the long-term financial plan and their renewal years is a reflection of review of asset life enabling a year or more additional life from bridge assets near the end of their useful life. The Long-term financial plan budgets will be adjusted to reflect the change.

5.5 Acquisition Plan

Acquisitions are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs.

5.5.1 Selection criteria

Proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests or developments, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to Council's needs. 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 programmes. The priority ranking criteria is detailed in Table 5.5.1.

Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Is the acquisition in line with Council's core purpose?	30 %
Necessity/demand	15 %
Are lifecycle costs known and funds available in planned budget?	35 %
Risk consequence of not providing	20 %
Total	**100%**

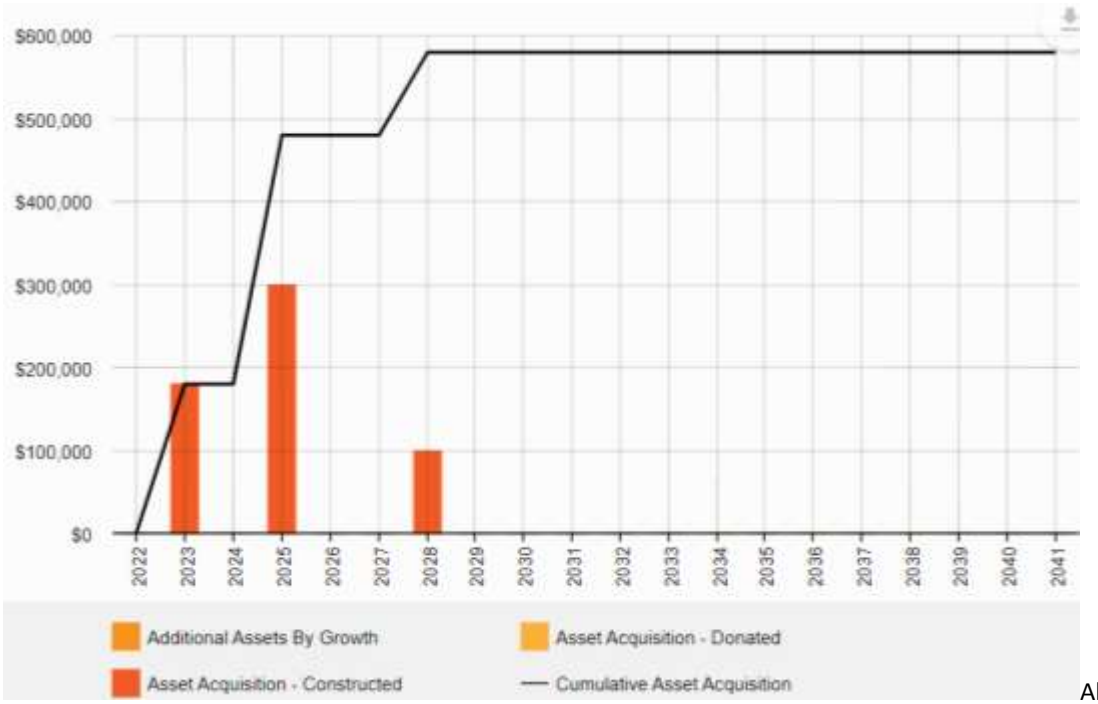
Summary of future asset acquisition costs

There are currently no acquisitions for Bridge assets forecast over the planning period, hence no budget has been assigned to asset acquisition.

When Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must 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 being taken on by Council. The cumulative value of all acquisition work, including assets that are constructed by Council and assets donated by others are shown in Figure 5.5.2.

Acquisitions over the period are limited to the upgrade of Holkham Court culverts which, due to significant size increase, now meet the criteria for major culverts in the bridge asset class. This is funded from existing council capital program. Two other assets have been identified for adoption. The proposed footbridge over the Meredith Bridge and a footbridge within a proposed development off Rheban Road.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current dollars.

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 council funding. Shortfalls are proposed to be met from grants.

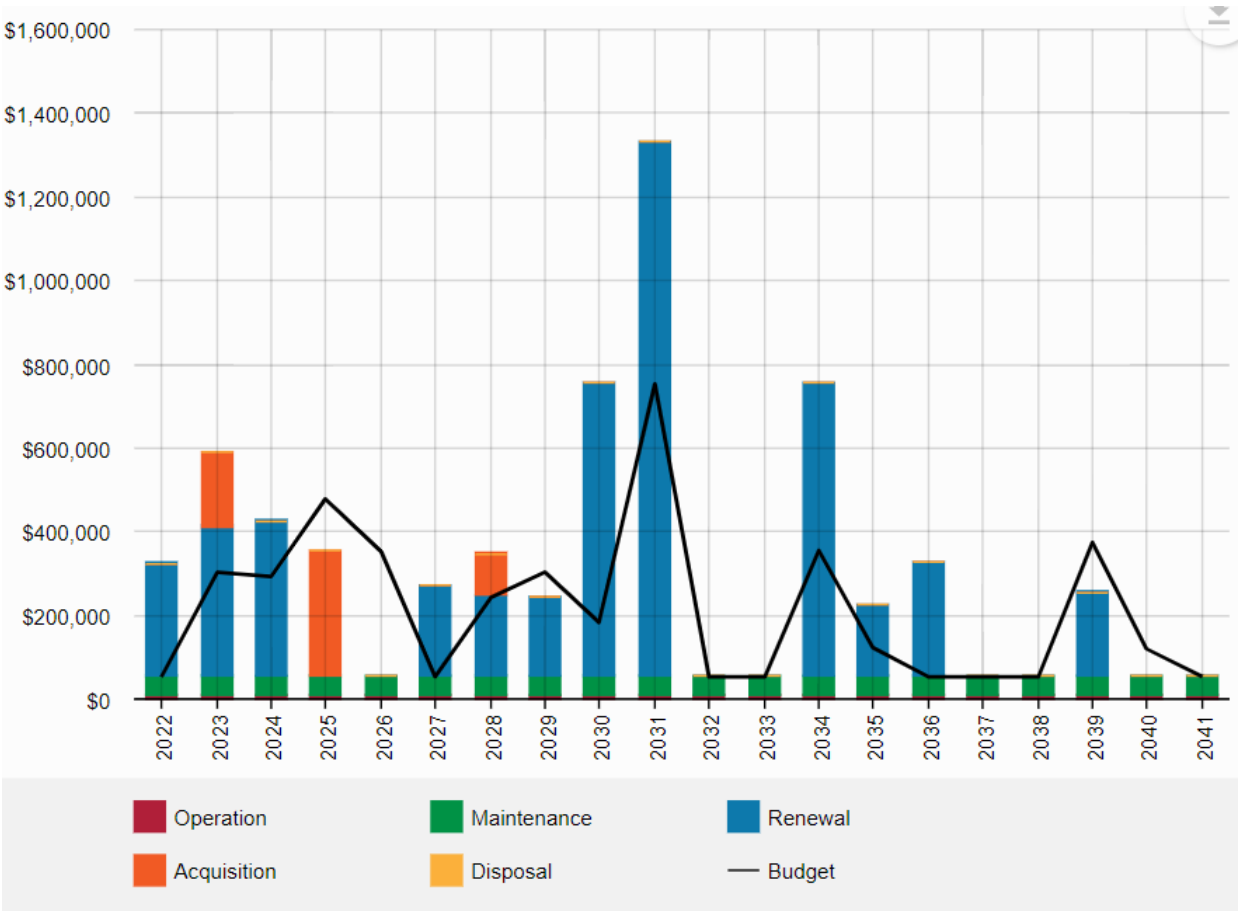
Though not noted in this plan, Council will likely have some 'constructed' acquisitions over the planning period, however these are estimated to mostly be things like upgrade of bridge railing for an existing bridge, (a new component to an existing asset). These acquisition costs are currently unknown however some allowance for this is included in the planned budget for renewals. Once known these forecast acquisition costs (constructed) should be separated out in future revisions of this plan.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. 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 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

As can be seen in Figure 5.5.3, the forecast lifecycle costs exceed the planned budget (black line). The forecast lifecycle costs for renewal is the main reason for the shortfall between the planned budget and the lifecycle costs. Unless grant funds can be accessed in a timely way there will be financial or service level consequences as renewal demand falls due.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. 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
Nil	N/A	N/A	N/A	N/A

6.0 RISK MANAGEMENT PLANNING

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'[7].

An assessment of risks[8] 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(s)	Failure Mode	Impact
Bridges	Flooding, impact, overloading etc.	Essential transport services disrupted

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 below.

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

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

[7] ISO 31000:2009, p 2

[8] Refer GSBC Risk Management Policy and GSBC Risk Management Strategy (June 2020)

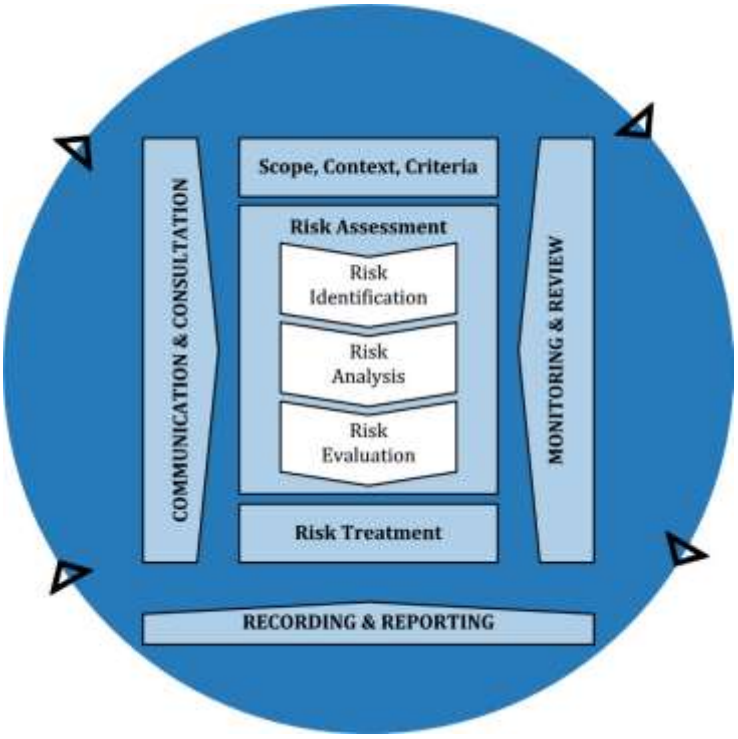


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

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[9] 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 'Extreme' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified. 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 Councilors.

[9] Refer GSBC Risk Management Policy and GSBC Risk Management Strategy (June 2020)

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (E, H,M,L)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Bridges	Loss of key staff/knowledge in consultant or staff	High	Develop a succession plan, document knowledge and improve record keeping	L	N/A
Bridges	Underfunding of renewal and associated upgrades	Extreme	Contingency funding allocation in Capital budget for emergency works	M	$150,000
Bridges	Increased frequency of flood damage to assets	H	Improve vulnerable assets – raise bridges /improve abutment treatments	L	Nominally $2,000,000
Bridges	Council are gifted assets with life cycle costs not accounted for in Long Term Financial Plan	H	Ensure lifecycle costs are considered (and detailed independent engineering report sought) prior to accepting and seek contribution from previous owner where appropriate	L	TBA
Bridges	Lack of strategic plan for maintenance and renewal works	H	Maintain and renew assets based on condition assessments. Develop strategic work plan	L	N/A

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.

From 2016 to the present there has been significant rainfall events which have had a detrimental impact on some bridges. This has resulted in replacement of two bridges with significant increase in capacity for storm flows. There are a number of other bridges which have a similar risk level to the two replaced.

So while the existing “at risk” bridges sustain inundation on a regular basis, their resilience to compromise of structural integrity, or complete failure to provide service, is low.

The majority of the bridge network is resilient to inundation risk while a portion of the network is at risk.

6.4 Service and Risk Trade-Offs

The decisions made in adopting this Asset Management Plan are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

There are some operations, maintenance and capital works (acquisition and renewal) that are unable to be undertaken within the next 10 years. These include:

- We cannot undertake bridge renewals at the rate required to maintain the current level of service without external assistance.
- We cannot fully fund emergency response works to bridge failure.
- We cannot acquire assets where there is no planned budget assigned to service the full lifecycle costs (acquisition, operation, maintenance, renewal and disposal) over the planning period. A recent example of this is the acquisition of Wielangta Road.

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. The service consequences will generally be a reduction in level of service provided.

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 include:

- A reduction to the level of service provided
- Impacts on local producers and tourism
- Reputational consequences

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

7.0 FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management 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 Asset Management Plan for this service area. The two indicators are the:

- 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[10] **58%**

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 58% of the funds required for the optimal renewal of assets.

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 Asset Management 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 **$412,269** on average per year.

The proposed (budget) operations, maintenance and renewal funding is **$261,624** on average per year giving a 10 year funding shortfall of **$150,645** per year. This indicates that **63%** of the forecast costs needed to provide the services documented in this Asset Management 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 Asset Management 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 7.1.2 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 Asset Management Plan (including possibly revising the Long-Term Financial Plan).

[10] AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

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

Forecast costs are shown in 2022/23 financial year dollar values.

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

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2022	180,000	8000	45124	271,592	0
2023	0	8000	45124	359,196	0
2024	0	8108	45124	372,389	0
2025	0	8108	46124	0	0
2026	0	8288	46124	0	0
2027	0	8288	46124	216,470	0
2028	0	8288	46524	192,678	0
2029	0	8348	46524	187,360	0
2030	0	8348	46524	703,172	0
2031	0	8348	46524	1,277,869	0
2032	0	8348	46524	0	0
2033	0	8348	46524	0	0
2034	0	8348	46524	702,741	0
2035	0	8348	46524	170,000	0
2036	0	8348	46524	271,592	0
2037	0	8348	46524	0	0
2038	0	8348	46524	0	0
2039	0	8348	46524	200,760	0
2040	0	8348	46524	0	0
2041	0	8348	46524	0	0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and Long Term Financial Plan.

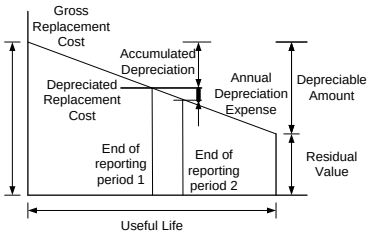
The financial strategy of Council determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of Bridge assets included in this Asset Management Plan is shown below:

Replacement Cost (Current/Gross)	$13,551,133
Depreciable Amount	$13,551,133
Depreciated Replacement Cost[11]	$9,258,523
Annual Depreciation Expense	$315,719



7.3.2 Valuation forecast

Asset values are not forecast to increase over the planning period as additional assets are not expected to be acquired by or vested in Council.

Additional assets will generally 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 Asset Management Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this Asset Management 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 Asset Management Plan are:

- Assume external funding (grants) will continue to be a major source of funding for renewals and major maintenance, noting an anticipated reduction in grant opportunities in the short to medium term of the planning period.
- Financial data used in the development of this plan was from the budget for the 2022-23 financial year and bridges report from January 2022.
- Assume no additional major Bridge assets will be acquired by Council in the next 10 year period.
- No major acquisitions are to be undertaken during the planning period without full condition and detailed lifecycle costing knowledge and allocation in planned budget to meet these costs.
- Professional judgement has been applied in the absence of good quality data, however where applied, it has been noted for improvement in Section 8.0.
- All figures are presented in current day dollars.
- The Bridge asset class is unique in that replacement will generally include upgrade to mitigate climate change and material or standard change improvements resulting in higher cost of renewal as a package incorporating the renewal of the bridge. Budgets for renewal need to consider where this is required.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this Asset Management 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 an A - E level scale[12] in accordance with Table 7.5.1.

[11] Also reported as Written Down Value, Carrying or Net Book Value.
[12] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

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 ± 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 ± 10%
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 substantially complete but up to 50% is extrapolated data and accuracy estimated ± 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 ± 40%
E. Very Low	None or very little data held.

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

Table 7.5.2: Data Confidence Assessment for Data used in Asset Management Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium	Requires Council input, review and acceptance
Growth projections	High	State government provided projections used
Acquisition forecast	High	Unlikely to receive donated bridge assets
Operation forecast	Medium	Best available at present – Storm weather has a dynamic impact on maintenance needs
Maintenance forecast	Medium	Best available at present – Storm weather has a dynamic impact on maintenance needs
Renewal forecast Asset values	Medium	Based on AusSpan bridge renewal estimates.
Asset useful lives	Very High	Based on visual inspection and professional judgement of staff and consultants
Condition modelling	Very High	Based on recent *AusSpan* (bridges) condition assessments
Disposal forecast	Very High	No disposals are currently forecasted over the planning period

The estimated confidence level for and reliability of data used in this Asset Management Plan is considered to be **High** (refer Table 7.5.1).

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[13]

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The source of the data is Council's financial management system XERO.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is generally from AusSpan Total Bridge Management System asset registers.

8.2 Improvement Plan

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

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Develop maintenance and capital works programs for upcoming year. Use to inform Asset Management Plan and Long-Term Financial Plan updates.	Director of Works & Infrastructure, Works Manager, Works Supervisor	DWI, DCC, Works Manager	June 2023
2	Assess yearly performance (budgeted vs. actual costs) and update Asset Management Plan and Long Term Financial Plan accordingly.	Director of Works & Infrastructure	DCC, DWI	Dec 2024
3	Improve processes in financial data use in Long Term Financial Plan and Asset Management Plan – this is foreseen to involve improved recording of acquisition, operations, maintenance, renewal and disposal asset lifecycle activities within XERO (accounting software)	Accountant	Accountant, DWI, Works Manager, Works Supervisor	December 2023
4	Continually improve correlation between Long Term Financial Plan and Asset Management Plan. (Conduct regular meetings of responsible persons)	GM, DCC, Accountant, DWI	GM Accountant, DCC, DWI	Ongoing
5	Increase confidence and maturity of Asset Management Plan	Director of Infrastructure	Internal	Ongoing

[13] ISO 55000 Refers to this as the Asset Management System

8.3 Monitoring and Review Procedures

This Asset Management 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 as a result of budget decisions.

The Asset Management 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 Asset Management Plan has a maximum life of 4 years and is due for complete revision and updating within 6 months of each Council election.

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the Long-Term Financial Plan,
- The degree to which the 1-5 year detailed works programs are implemented,
- 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%).

9.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- '10-year Strategic Plan 2020-2029'
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10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions and Source

A key assumption in the writing of this Asset Management Plan is that no major standalone acquisitions are forecast to be undertaken during the planning period. Given future demand (discussed in Section 4), Council's current financial position and available budget, a strategy of minimising acquisitions (for Bridge assets) over the planning period is recommended.

A.2 – Acquisition Project Summary

Currently unknown – refer to A.1.

A.3 – Acquisition Forecast Summary

Table A3 displays the forecast acquisition value each year over the planning period.

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2022	180,000	0	0
2023	0	0	0
2024	0	0	0
2025	0	300,000	0
2026	0	0	0
2027	0	0	0
2028	0	100,000	0
2029	0	0	0
2030	0	0	0
2031	0	0	0
2032	0	0	0
2033	0	0	0
2034	0	0	0
2035	0	0	0
2036	0	0	0
2037	0	0	0
2038	0	0	0
2039	0	0	0
2040	0	0	0
2041	0	0	0

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions and Source

Gross estimates and assumptions are noted with respect to the ancillary works required for a bridge renewal and or upgrade. This has been noted for improvement in Section 8.0.

B.2 – Operation Forecast Summary

Table B2 displays the forecast operation costs each year over the planning period. Note the 'Additional Operation Forecast' is a percentage of the 'donated' asset acquisitions value forecast over the planning period and this represents additional funds required to 'operate' these acquired assets.

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	8,000	0	8,000
2023	8,000	0	8,000
2024	8,000	108	8108
2025	8,000	108	8108
2026	8,000	288	8288
2027	8,000	288	8288
2028	8,000	348	8288
2029	8,000	348	8348
2030	8,000	348	8348
2031	8,000	348	8348
2032	8,000	348	8348
2033	8,000	348	8348
2034	8,000	348	8348
2035	8,000	348	8348
2036	8,000	348	8348
2037	8,000	348	8348
2038	8,000	348	8348
2039	8,000	348	8348
2040	8,000	348	8348
2041	8,000	348	8348

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions and Source

Several gross estimates and assumptions were required to be made in the maintenance forecast figures due to the quality of financial information currently available (poor tracking of maintenance costs relating to Bridge assets). This has been noted for improvement in Section 8.0.

C.2 – Maintenance Forecast Summary

Table C2 displays the forecast maintenance costs each year over the planning period. Note the 'Additional Maintenance Forecast' is a percentage of the 'donated' asset acquisitions value forecast over the planning period and this represents additional funds required to maintain these acquired assets.

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2022	45,124	0	45,124
2023	45,124	0	45,124
2024	45,124	0	45,124
2025	45,124	1000	46124
2026	45,124	1000	46124
2027	45,124	1000	46124
2028	45,124	1400	46524
2029	45,124	1400	46524
2030	45,124	1400	46524
2031	45,124	1400	46524
2032	45,124	1400	46524
2033	45,124	1400	46524
2034	45,124	1400	46524
2035	45,124	1400	46524
2036	45,124	1400	46524
2037	45,124	1400	46524
2038	45,124	1400	46524
2039	45,124	1400	46524
2040	45,124	1400	46524
2041	45,124	1400	46524

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

The renewal forecast of $261,624 per year is based on the total sum of the forecasted renewal costs averaged over the 10 year planning period. Refer also improvement plan in Section 8.0.

D.2 – Renewal Project Summary

The below table is an extract from the Bridge asset registers and show assets that are forecast for renewal within the planning period (up to 2033). Further professional judgement will be required in prioritising the below renewals over the planning period, refer also Table 5.3.1.

All figures shown are in current day dollars.

10-Year Bridge Renewal Plan

												22\23	23\24	24\25	25\26	26\27	27\28	28\29	29\30	30\31	31\32	32\33
List No.	Classif-ication	Bridge No	River Name	Road Name	Const Year	Deck Type	Deck Area	Sub Cost	Super Cost (adj min cost)	Deck Cost - Timber	Total Cost	This Year	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
1	MBA	111	Back Rv	Stonehurst Rd	2016	CON	22.28	53091	53237		106328											
2	MBA	466	Vicary Rvlt	Triabunna Rd	1993	CON	178.20	196749	425898		622647	0.30										
3	MBA	689	Unemployed Gully	Nugent Rd	2014	CON	58.65	84946	140174		225119	1.20										
4	MBA	814	Ironstone Ck	Cutting Grass	2013	CON	43.17	44721	103188		147909											
5	MBA	827	Griffiths Rvlt	Rheban Rd	2021	CON	85.85	107709	205170		312878	0.40										
6	MBA	844	Swan Rv	Grange Rd	2015	CON	83.30	102018	199087		301105											
8	MBA	1300	Prosser Rv	Levendale Back Rd	2011	CON	53.56	108264	128008		236272											
9	MBA	1374	Jack Gray Ck	Rheban Rd	2016	CON	48.20	103697	115198		218895											
10	MBA	1483	Freestone Ck	Glen Gala Rd	2011	RBC	28.44		121154		121154	1.10										
11	MBA	1583	Bluff Rv	Sand Rv Rd	2012	CON	142.22	185064	339906		524970											
12	MBA	1807	Glen Gala Ck	Glen Gala Rd	2017	CON	29.76	73286	71126		144413	3.20										
13	MBA	2001	Larges Ck	Bresnehans Rd	2012	CON	33.30	35949	79587		115536	36.70										
14	MBA	2028	Prosser Rv	Brockley Rd	2010	CON	60.00	114510	143400		257910	43.30								181.65		
15	MBA	2034	Prosser Rv	Brockley Rd	2011	CON	56.10	106182	134079		240261	33.60									174.94	
16	MBA	2131	Unnamed Ck	Old Coach Rd	2020	CON	29.76	43306	71126		114432											
17	MBA	2260	Glanraven Ck	Strip Rd	2015	CON	51.91	121283	124074		245358											
18	MBA	2416	West Swan Rv	Old Coach Rd	2011	CON	24.64	29391	58890		88281											
19	MBA	2548	Orford Rvlt	Rheban Rd	2020	CON	242.69	197374	580024		777398											
20	MBA	2693	Prosser Rv	Woodsdale Rd	2008	CON	278.87	444091	666499		1110590											
21	MBA	2902	Prosser Rv	Woodsden Rd	2011	CON	51.00	106182	121890		228072	89.86									159.04	
23	MBA	3167	Saltwater Ck	Tarleton Rd	2007	RBC	20.52		87415		87415											
24	MBA	3209	Blindburn Ck	Ferndale Rd	2013	CON	30.49	118483	72876		191359	6.35	118.48									
25	MBA	3264	Two Mile Ck	Rheban Rd	2017	CON	64.80	134914	154872		289786											
26	MBA	3299	Saggy Ck	Rosedale Rd	2008	CON	53.55	88485	127985		216470						250.95					
27	MBA	3301	Apsley Rv	Rosedale Rd	2011	CON	142.80	101758	341292		443050	81.68									578.08	
28	MBA	3304	Wet Marsh Rvlt	Swan Rv Rd	2003	CON	37.25	58754	89028		147782	0.40										
29	MBA	3409	Okehampton Ck	Okehampton Rd	1990	MPC	10.64		85000		85000	2.45										
30	MBA	3590	Mitchelmores Ck	Swanston Rd	2011	CON	45.90	120340	109701		230041	7.68									300.15	
32	MBA	3688	Dunraven Ck	Strip Rd	2008	RBC	13.68		85000		85000											
33	MBA	3860	Earlham Ck	Earlham Rd	2017	CON	51.00	81406	121890		203296											
34	MBA	3871	Unnamed Ck	Hermitage Rd	2005	CON	34.50	57255	82455		139710											
35	MBA	4221	Ravensdale Rvlt	Strip Rd	2010	CON	51.00	70788	121890		192678	0.95						145.54				
36	MBA	4247	Unnamed Ck	Rheban Rd	2000	RCP	25.92		85000		85000											
37	MBA	4497	Sheep wash Bay Ck	Seaford Rd	2011	RBC	16.44		85000		85000	1.80										
38	MBA	4844	Seabyrne Ck	Banwell Rd	2011	CON	40.80	38933	97512		136445	19.18									127.23	
40	MBA	4912	Scrubby Ck	Earlham Rd	1996	RBC	23.36		99514		99514											
41	MBA	5177	Dunraven Ck	Strip Rd	2006	CON	60.00	69400	143400		212800											
42	MBA	5251	Kit Owen Ck	McNeills Rd	2009	CON	45.00	79810	107550		187360								132.27			
43	MBA	5297	Unnamed Ck	Sand Rv Rd	2004	RCP	30.24		85882		85882											
44	MBA	100V	Unnamed Ck	Glen Gala Rd	1950	CON	66.88	137412	159843		297255	46.10								376.55		
45	MBA		Great Oyster Bay Tr	Unnamed Rocky Hills	2013	CON	21.60	173222	51624		224846	0.20										
47	MBA		Griffiths Rvlt	Wielangta Rd	2014	CON	84.15	123879	201119		324998	56.38	50.70									
48	MBA		Prosser Rvr	Off Brockley Rd	1973	STL	105.60	62460	296736		359196	12.40										
49	MBA		Fisheries Crk	Parsons Lane	2015	PPC	16.20		85000		85000											
50	MBA		Orford Rv	Wielangta Rd	1999	MPC	63.86		152625		152625	64.35										
51	MBA		17 Acre Crk	Wielangta Rd	2008	CON	54.40	141576	130016		271592	271.59										
52	MBA		Seventeen Ck Trib	Wielangta Rd	1986	RCP	21.60		85000		85000											
53	MBA		Griffiths North	Wielangta Rd	2002	MPC	55.12		131737		131737	15.50		139.76								
54	MBA		Sandspit Rv	Wielangta Rd	1999	MPC	84.00		200760		200760	3.60										
55	MBA		Sandspit Flood Oper	Wielangta Rd	2005	CON	61.20	94384	146268		240652			255.31								
56	MBA		Sandspit Flood Oper	Wielangta Rd	2005	MPC	8.06		85000		85000	1.20										
57	MBA		Pony Bottom	Wielangta Rd	2017	CON	104.12	163506	248847		412353	0.80										
58	MBA		Sandspit Rv	Wielangta Rd	2017	CON	105.64	142409	252480		394888											
59	MBA		Lady Fern Crk	Wielangta Rd	2017	CON	94.60	328262	226094		554356											
60	MBA		Sandspit Rv	Wielangta Rd	2011	RBC	56.28		239753		239753	20.10										
61	MBA		Saltwater Creek	Footbridge off Esplan	2004	TIM	55.36	53345	94662	35983	148007									187.49		
7	NMBA	989	Cyclone Gully Ck	Stonehurst Rd	1980	TIM	29.40	10143	50274	19110	60417											
22	NMBA	3129	Orford Rvlt	Rheban Rd	1963	CON	31.08	110762	74281		185044											
31	NMBA	3685	Smilers Spring Ck	Mt Pleasant Rd			18.62															

D.3 – Renewal Forecast Summary

Table D3 displays the forecast renewal costs and planned budget each year over the planning period. The renewal forecast is $149,573 (per year) higher than the forecast renewal budget.

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2022	$271,592	0
2023	$168,000	250,000
2024	$395,000	240,000
2025	0	125,000
2026	0	300,000
2027	$251,000	0
2028	$145,000	90,000
2029	$133,000	250,000
2030	$746,000	130,000
2031	$1,340,000	700,000
2032	$0	0
2033	$0	0
2034	$881,000	302,000
2035	$250,000	70,000
2036	$0	0
2037	$0	0
2038	$0	0
2039	$332,000	321,000
2040	$125,000	67,000
2041	$0	0,

D.4 –Renewal Plan

A formal works plan is yet to be developed, however high priority major renewals that are forecast to occur over the next 10 years are:

- Wielangta Road Bridge (17 Acre Creek);
- Blindburn Creek (Ferndale Road
- Brockley Road Bridge (Prosser River) Bridge No#;
- Wielangta Road Bridge (Sandspit Flood Opening);
- Wielangta Road Bridge (Griffiths North);
- Saggy Creek (Rosedale Road)
- Ravensdale Rivulet (Strip Road)
- McNiells Road Bridge (Kit Owen Creek).
- Brockley Road (Prosser River) Bridge 2034
- Unnamed Creek (Glen Gala Rd
- Footbridge off esplanade Saltwater Creek
- Brockley Road (Prosser River) Bridge 2034
- Prosser River (Woodsden Road) Bridge 2902
- Apsley River (Rosedale Rd) Bridge 3301
- Mitchelmores Creek (Swanston Rd)
- Seabyrne Creek (Banwell Rd) Bridge 4844

Appendix E Disposal Summary

E.1 – Disposal Forecast Assumptions and Source
Through discussion with key staff and further analysis of the asset register, no major disposals with foreseen costs to Council are forecast to occur over the planning period.

E.2 – Disposal Project Summary
No major disposals with foreseen costs to Council are forecast to occur over the planning period.

E.3 – Disposal Forecast Summary
Table E3 displays the disposal forecast and disposal budget over the planning period. No major disposals with foreseen costs to Council are forecast to occur over the planning period, hence the zero values shown.

Table E3 – Disposal Activity Summary

Year	Disposal Forecast	Disposal Budget
2020	0	0
2021	0	0
2022	0	0
2023	0	0
2024	0	0
2025	0	0
2026	0	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	0	0
2034	0	0
2035	0	0
2036	0	0
2037	0	0
2038	0	0
2039	0	0

Appendix F Budget Summary by Lifecycle Activity

Several gross estimates and assumptions were required to be made in the development of the planned budget figures shown in Table F1. This was due to the quality of financial information currently available (poor breakdown in planned budgets specifically relating to the below lifecycle activities (acquisition, operation, maintenance, renewal, disposal). This has been noted for improvement in Section 8.0.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	0	8000	45124	250000	0	303124
2023	180000	8000	45124	240000	0	473124
2024	0	8108	45124	140000	0	193232
2025	0	8108	46124	256000	0	310232
2026	0	8288	46124	0	0	54412
2027	0	8288	46124	251000	0	305412
2028	0	8288	46524	146000	0	200812
2029	0	8348	46524	133000	0	187872
2030	0	8348	46524	746000	0	800872
2031	0	8348	46524	580000	0	634872
2032	0	8348	46524	428000	0	482872
2033	0	8348	46524	334000	0	388872
2034	0	8348	46524	681000	0	735872
2035	0	8348	46524	200000	0	254872
2036	0	8348	46524	250000	0	304872
2037	0	8348	46524	0	0	54872
2038	0	8348	46524	0	0	54872
2039	0	8348	46524	332000	0	386872
2040	0	8348	46524	125000	0	179872
2041	0	8348	46524	0	0	54872