Asset Management Plan

Bridges

Wakefield Regional Council

19 March 2021

Ref: 200818R006RevE

Adopted 28 April 2021

WAKEFIELD
REGIONAL COUNCIL

Document History and Status

Rev	Description	Author	Reviewed	Approved	Date
A	Initial Draft for Council Comment	LJB	RKE	RKE	20 November 2020
B	Update structure of Plan	LJB	RKE	RKE	3 February 2021
C	Update to include section on Asset Renewal Ratio & adjustment to expenditure	LJB	RKE	RKE	15 February 2021
D	Update following feedback from Council	LJB/TJF	RKE	RKE	18 March 2021
E	Final amendments	LJB/TJF	RKE	RKE	19 March 2021

Contents

Tables

Figures

Appendices

1 Executive Summary

The purpose of this Asset Management Plan (Plan) is to provide a clear strategy in relation to the maintenance, renewal and upgrade of Wakefield Regional Council's bridge network.

In 2020, Council worked closely with the community to develop Wakefield 2030, Council's 10 year community plan. As part of the consultation Council held a series of farmers forums to better understand the needs of this sector in relation to the road network. It became very clear that providing appropriate road access is critical to the growth and future success of the agricultural sector and having bridges suitable for the current and future needs will help deliver on that requirement.

Wakefield Regional Council (Council) is responsible for 11 bridges with a total replacement value of over $7.85M.

Condition assessments undertaken in 2019 identified several bridges that are now in need of capital renewal/replacement work to rectify non-complaint guard rails, structural integrity issues and deal with load limits currently imposed that are out of step with the strategy to provide access to the agriculture sector.

Accordingly, the strategy set out in this plan includes the replacement of 3 bridges with culverts in first 4 years. This includes BR010 Quinlans Bridge, BR004 Adrian Clark Road Bridge and BR001 Kyponga Top Road Bridge. In addition, a replacement of the guardrail system is planned for BR005 Watchman Road Bridge.

The plan also includes renewal of guard rail on BR003 Big Dipper Road Bridge within the first 4 years of the plan and wingwall replacement later in the plan. This is continuing the bridge replacement and guard rail work completed in 2019-20 and 2020-21.

The Bridge maintenance budget of approximately $10,000 per year covers routine inspections and related operational expenses.

The financial projections are shown in the figure below for projected operating (operations and maintenance) and capital renewal. No bridge upgrades have been identified in this plan.

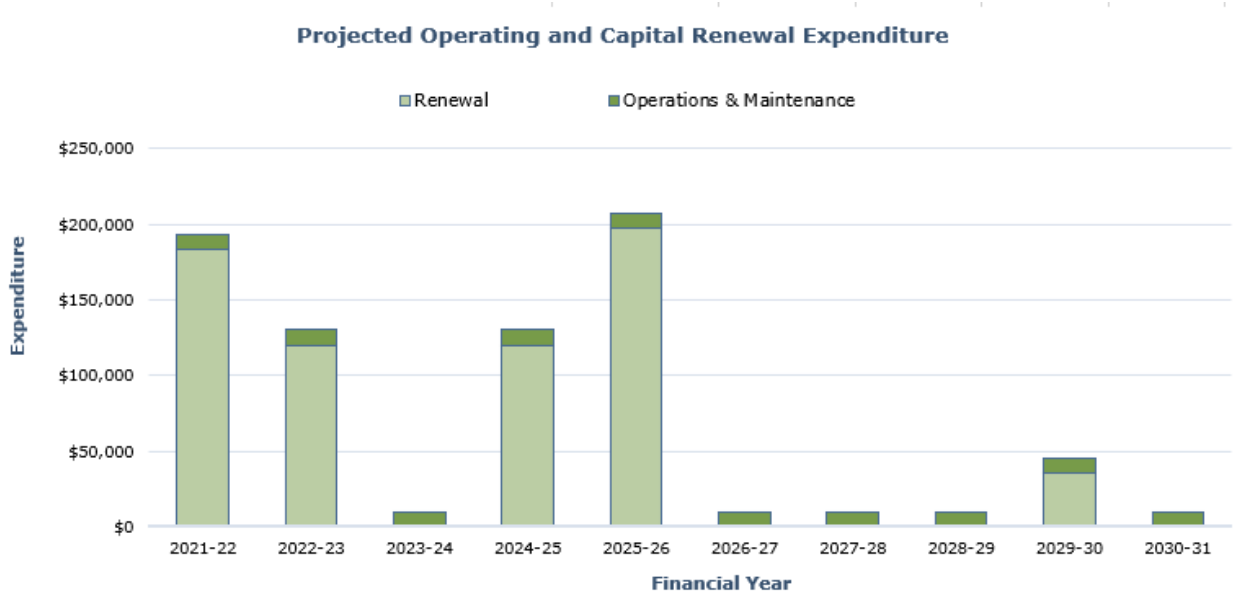


Figure 1 Projected Maintenance and Capital Renewal Expenditure

2 Introduction

2.1 Context

This Infrastructure Asset Management Plan (Plan) is for Wakefield Regional Council (Council) bridge assets and is an update of the 2017 plan. The last bridge valuation was for 1 July 2018 and is still current for this plan. A condition assessment formed part of the previous valuation. Additional investigations have been undertaken by Tonkin following the valuation to highlight bridge deficiencies. The outcomes from the valuation and bridge investigations are detailed in this Plan with specific actions for Council.

This Plan provides Council with an understanding of the current bridge network, its age profile, condition profile and impact on future renewal

2.2 Background

This Plan covers the bridge assets under the control of Wakefield Regional Council. Council have four (4) categories of bridges as shown in Table 1

Table 1 Bridge Categories

Category 1	Arterial or Collector Road Bridge – sealed road approaches and sealed bridge deck (Class Sealed Road) and unsealed high use roads (Class 1 and 2 unsealed Roads)
Category 2	Local Road Bridge – unsealed approaches and unsealed bridge deck Class 3 and 4 Roads)
Category 3	Minor Local Road Bridge– local access only (Class 5 and 6 Roads)
Category D	“Decommissioned” – closed to vehicular traffic. Potential for demolition (if required) and not replaced

An overview of the Bridge infrastructure assets covered by this Plan is shown in Table 2, reported in Fair Value as of 30 June 2020.

Table 2 Assets Covered By this Plan

No.	Bridge	Details	Category & Load Limit	Bridge Barriers	Bridge Wingwalls and Floor	Bridge Deck	Bridge Substructure	Bridge Superstructure	Structure Culvert / Pipe	Total Fair Value
BR001	Kybunga Top Rd Bridge just off south Muanu Rd	Single span steel girders, with concrete deck	Cat 1 Nil Limit	$17,307	$4,553	$37,746	$38,035	$37,147		$134,788
BR002	Kybunga Top Rd Bridge further south off Muanu Rd	Triple Cell 1800mm pipes bridge	Cat 1 Nil Limit	$21,267	$15,000				$80,762	$117,029
BR003	T Wandels Bridge - Big Dipper Rd just north off T Wandels Rd	Single span steel girders, with newer concrete deck	Cat 2 Nil Limit	$18,009	$35,549	$27,023	$28,976	$9,800		$119,357
BR004	Adrian Clark Bridge - White Well Rd	Single span steel girders, with newer concrete deck	Cat 2 5 Tonne Limit	$6,356	$66,524	$16,901	$121,982	$37,147		$248,910
BR005	Watchman Bridge	3 span, concrete girders and deck	Cat 1 Nil Limit	$197,106	$9,899	$185,912	$831,393	$589,000		$1,813,310
BR006	Dunns Bridge	Steel truss bridge with concrete deck	Cat 1 3 Tonne Limit	$13,979	$107,852	$105,163	$171,538	$253,477		$652,009
BR007	Whitwarta Bridge	2 span concrete girders and deck	Cat 1 Nil Limit	$122,412	$9,034	$253,517	$697,901	$1,706,027		$2,788,891
BR008	Old Whitwarta Bridge	3 span steel girders	Cat D (pedestrian and cyclists only)	$36,501	$16,860	$86,055	$439,460	$92,301		$671,177

No.	Bridge	Details	Category & Load Limit	Bridge Barriers	Bridge Wingwalls and Floor	Bridge Deck	Bridge Substructure	Bridge Superstructure	Structure Culvert / Pipe	Total Fair Value
BR009	Old Blyth Brinkworth Bridge	2 span, steel girders, concrete deck	Cat n Nil Limit	$20,794	$63,865	$90,139	$533,845	$206,740		$915,383
BR010	Quinlans Bridge, Lookout Road	Single span steel girders, concrete deck	Cat 3 5 Tonne Limit	$35,698	$72,122	$12,206	$141,923	$49,994		$311,943
BR011	Jenkins Bridge	Twin Cell 1800 x 600, Precast inlet and outlet headwalls	Cat 1 Nil Limit	$22,322	$12,600				$38,549	$73,471
			Totals	$511,750	$413,858	$814,662	$3,005,053	$2,981,633	$119,311	$7,846,267

2.3 Plan Framework

This Plan is based on the fundamental structure of the Institute of Public Works Engineering Australasia (IPWEA) National Asset Management Strategy (NAMS) 3 - Asset Management for Small, Rural or Remote Communities template.

Wakefield Regional Council provides services for the community and a major part of this is through the provision of infrastructure assets. Over the years, Council has acquired these assets directly through construction by Council staff or contractors or by inheritance from developers or other organisations.

Bridge infrastructures provide a valuable link for roads for regional and local communities across waterways and need to cope with the ever-changing demand for traffic loading.

The goal in managing infrastructure assets is to meet the required level of service in the most cost-effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach
- Developing cost-effective management strategies for the long term
- Providing a defined level of service and monitoring performance
- Managing risks associated with asset failures
- Sustainable use of physical resources.

Key elements of the plan are:

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

This Plan is prepared under the direction of the community's Wakefield 2030 vision and key themes which are as follows:

"Wakefield is a thriving and connected regional community known for its lifestyle, vibrant towns and economic prosperity. The region is growing, supported by quality assets and driven by a strong sense of pride and confidence.

Wakefield is a great place to do business and a great place to belong."

Liveable Communities

Wakefield is a great place to live, work and play. Our vibrant, attractive towns are full of energy and excitement, with places and spaces designed for people to pursue recreation, leisure and fun. Our communities are connected by social events, a sense of pride and belonging and quality infrastructure that serves them well.

Thriving Region

Wakefield is open for business. Our region's economic future is bright as existing businesses thrive and expand, while new businesses and industries put down local roots. Our population is growing as people recognise the affordable, quality lifestyle on offer, with new housing options enticing people to move to the area.

Sustainable Future

Wakefield has a clean, green future. Strong partnerships between Council, the community and other agencies have been formed as we come together to manage our environment in the best possible way. We are seen as a region that respects its natural assets and seeks sustainable outcomes for the community.

In order to deliver on this vision the way infrastructure is managed from planning, budgeting, delivery and maintenance and operations needs to be of a high standard with resources equipped to match the demand that this Plan outlines.

The bridge network enables the community to commute safely between townships and supports industries and farming to continue to operate regionally. This allows the communities to stay connected and supports the economic future of the region. This Plan details the approach Council are undertaking in managing Council owned bridges to provide the community with a safe and reliable network.

3 Lifecycle Management

The life cycle management plan details how Council plans to manage and operate the 11 bridges at the agreed levels of service (defined in Section 5) while optimising life cycle costs.

3.1 Background Data

The age profile of the assets shown by Fair Value (as of 30 June 2020) included in this Plan is shown in the figure below.

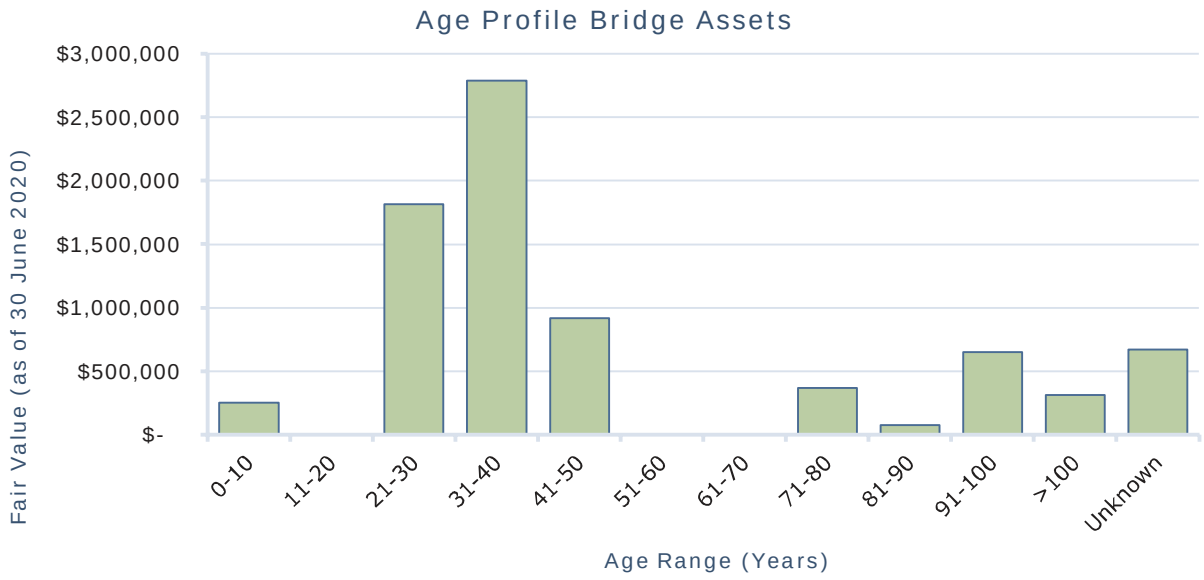


Figure 2 Age Profile of Bridge Assets

Given the value of assets over 70 years of age careful consideration is given to funding bridge replacement and upgrades in the planning period.

3.1.1 Asset Capacity and Performance

Based on the level of inspection undertaken it is not possible to definitively identify which bridges meet current design standards given the range of bridge construction types and dates. Based on the following observations made during the inspections, Council has the following observable capacity/performance issues identified for further consideration.

3.1.1.1 Load Limits

As identified in Section 5.3.1, there are 3 bridges with load limits. The table below addresses Council's plan for upgrading these bridges.

Table 3 Load Limited Bridge Renewal Plan

No.	Bridge	Option
BR004	Adrian Clark Bridge	Council to investigate replacing the structure to a culvert system in 2022-23. Load limit will be addressed subsequent to the investigations.
BR006	Dunns Bridge	Council to restrict to pedestrian and cyclists only - install bollards and minor repairs required. Works to be undertaken in 2021-22.
BR010	Quinlans Bridges	Bridge is currently closed. Council to undertake feasibility study of bridge and review potential upgrade options in 2020-21. Load limit will be addressed subsequent to the investigations.

3.1.1.2 Guardrails

As identified in Section 5.3.2, it was observed that 4 sites require barrier replacements to provide adequate allowance on the approaches, on bridge carriageway and the exit to meet safety requirements. We estimate the following provisions for the guard rail upgrade.

Table 4 Provisional Costs for Bridges Requiring Barrier Renewal Plan

No.	Bridge	Provisional Cost	Financial Year
BR001	Kybunga Top Road	N/A – replacement planned as part of bridge upgrade (see Table 5)	2024-25
BR003	Big Dipper Road	$18,000	2021-22
BR004	Adrian Clark Bridge	N/A – replacement planned as part of bridge upgrade (see Table 5)	2022-23
BR005	Watchman Road	$197,106	2025-26

3.1.1.3 Structural Integrity

As identified in Section 5.3.3, it was observed that 4 sites have poor condition components and the structural integrity of the bridge has likely been impacted. We estimate the following provisions for the bridge renewal.

Table 5 Provisional Costs for Structural Renewal Plan

No.	Bridge	Potential Renewal Option	Provisional Cost	Financial Year
BR001	Kybunga Top Road	Upgrade bridge to culvert system	$120,000	2024-25
BR004	Adrian Clark Bridge	Upgrade bridge to culvert system	$120,000	2022-23
BR006	Dunns Bridge	Restrict bridge to pedestrian and cyclists only - install bollards and minor repairs required	$65,000	2021-22
BR010	Quinlans Bridge	Upgrade bridge to culvert system – undertake feasibility study in 2020-21	$100,000	2021-22

It should be noted that transportation configurations have changed which include vehicles of Higher Mass Limits (HML), Restricted Access Vehicles (RAVs - B-Doubles/road trains) and farming implements which are greater in dimension. These factors need inclusion in any consideration for bridge use and access to protect the structural integrity of each structure.

3.1.2 Asset Condition

Condition data was collected during the inspections in February 2019 as part of the 1 July 2018 Valuation. The asset condition of the bridge components was based on a condition rating between 0 and 6 which was converted to a condition score between 0 and 100, where 0 represents a brand new asset and 100 represents a fully consumed asset that is due for replacement. The condition scores are defined in Table 6.

Table 6 Condition Scores

Score	Type
1	As New Condition
2	Good Condition
3	Mid Way Through Life
4	Nearing End of Life
5	Requires Immediate Replacement

A condition profile of the bridge asset network is provided in the figure below.

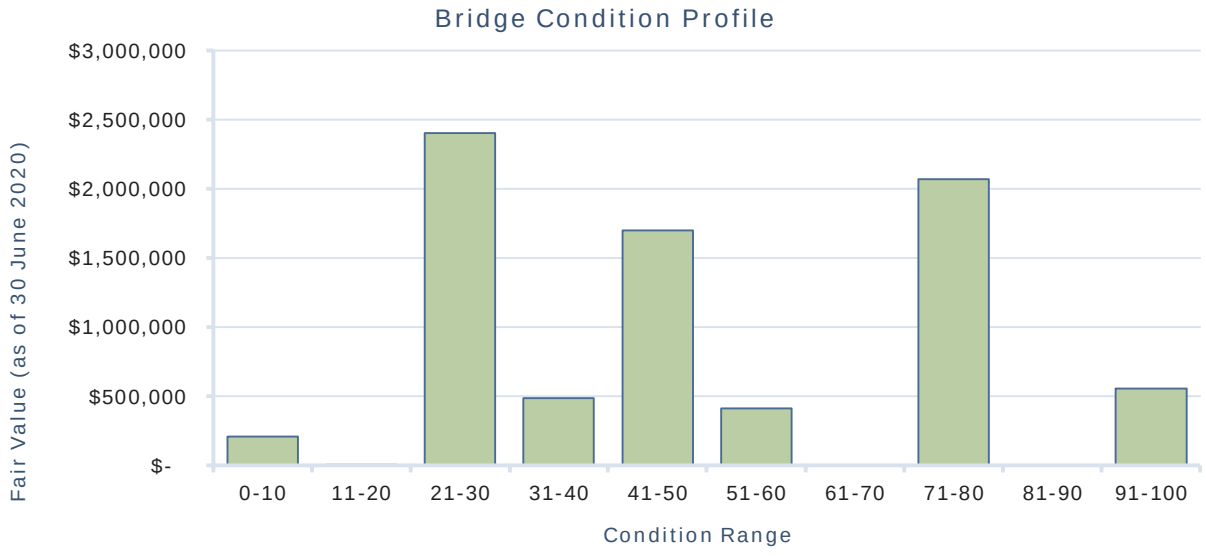


Figure 3 Bridge Condition Profile

3.1.3 Asset Valuations

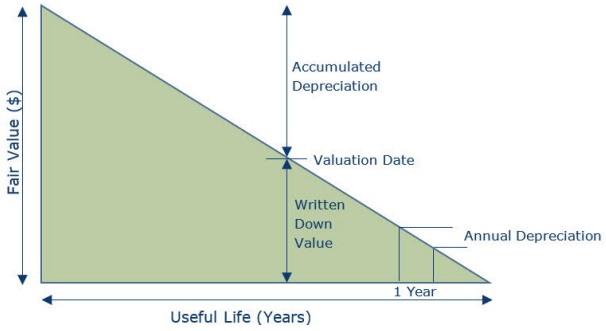
Fair Value 30 June 2020 represents the value of the bridge assets recorded in the asset register as at 1 July 2018 Valuation, plus the capital works undertaken by Council in 2018-19 and 2019-20, and addressed in this Plan is shown in Table 7.

Table 7 Bridge Asset Valuation Summary as at 30 June 2020

Category	Fair Value	Carrying Amount (WDV)	Annual Depreciation (2019/2020)
Bridge Assets	$7,846,267	$3,627,101	$95,239

The Depreciation expense shown is the 2019-20 expense as reported at the 'Bridge Asset Depreciation Report for 2019-20 Financial Year'.

The current rate of consumption (annual depreciation/depreciable amount) for Bridge assets is 1.2%. This indicates that on average, over the life of an asset, 1.2% of the depreciable amount is consumed annually. The translation of this consumption rate into renewals is subject to a decision on funding, service level determination and asset condition.



3.2 Risk Management

A condition assessment was undertaken in 2019 to determine the overall condition of the bridge infrastructure assets, assess defects and highlight non-compliant guard rails. This supported Council's capital renewal plan and guard rail replacement plan.

An assessment of risks associated with service delivery from bridge infrastructure assets is yet to be undertaken. The outcome of a risk assessment will be to identify critical risks to Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develop a risk rating, evaluates the risk and develop a risk treatment plan for non- acceptable risks.

Risks identified during the assessment include, but not limited to, the following:

- Integrity of the Structure
- Adverse Weather / Water Flows
- Traffic in excess of Load Limit
- Traffic Collision
- Vandalism / Terrorist Attack
- Fire / Flood
- Vehicle leaving the surface of a Bridge.

This has been included in the Improvement Plan for Council to implement.

3.3 Required Expenditure

This Plan identifies the projected operations/maintenance and capital renewal and upgrade expenditures required to provide an agreed level of service to the community over a 10 year medium term financial planning period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

3.3.1 Routine Operations/Maintenance

Maintenance expenditure on bridges is minor only relating to signage, guard rail repairs and asset management expenses. Minor bridge maintenance expenditure has been historically charged against road maintenance.

Bridge maintenance budget of approximately $10,000 per year covers routine inspections and related asset management expenses. The assessment of the structures by an engineer is performed every 5 years with the last inspection on the 1 July 2018.

3.3.2 Capital Renewal

The capital renewal plan was initially established based on the condition rating of the various bridge components. The program was further refined following further investigations of the structural integrity issues, non-compliant guard rails and bridge usage.

Appendix A provides a summary of the expected capital renewal over the 10 years of the Plan.

3.3.3 Capital New/Upgrade and Acquisition

It is not expected that Council will acquire new bridge assets from developers. Given the availability of easily developable land around the townships it is assumed that developers will not develop land that requires bridge construction. Presently there is no requirement for the construction of any new bridge in the council area.

3.3.4 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition, or relocation. Council has not identified any bridges to be disposed in the 10 year planning period (medium term).

3.3.5 Financial Projections

The financial projections are shown in Table 8 and Figure 4 for projected operating (operations and maintenance) and capital renewal.

Table 8 Operating and Capital Expenditure

Financial Year	Operations & Maintenance	Capital Renewal
2021-22 (incl. Backlog)	$10,000	$183,000
2022-23	$10,000	$120,000
2023-24	$10,000	$0
2024-25	$10,000	$120,000
2025-26	$10,000	$197,106
2026-27	$10,000	$0
2027-28	$10,000	$0
2028-29	$10,000	$0
2029-30	$10,000	$35,549
2030-31	$10,000	$0
Total	$100,000	$655,655

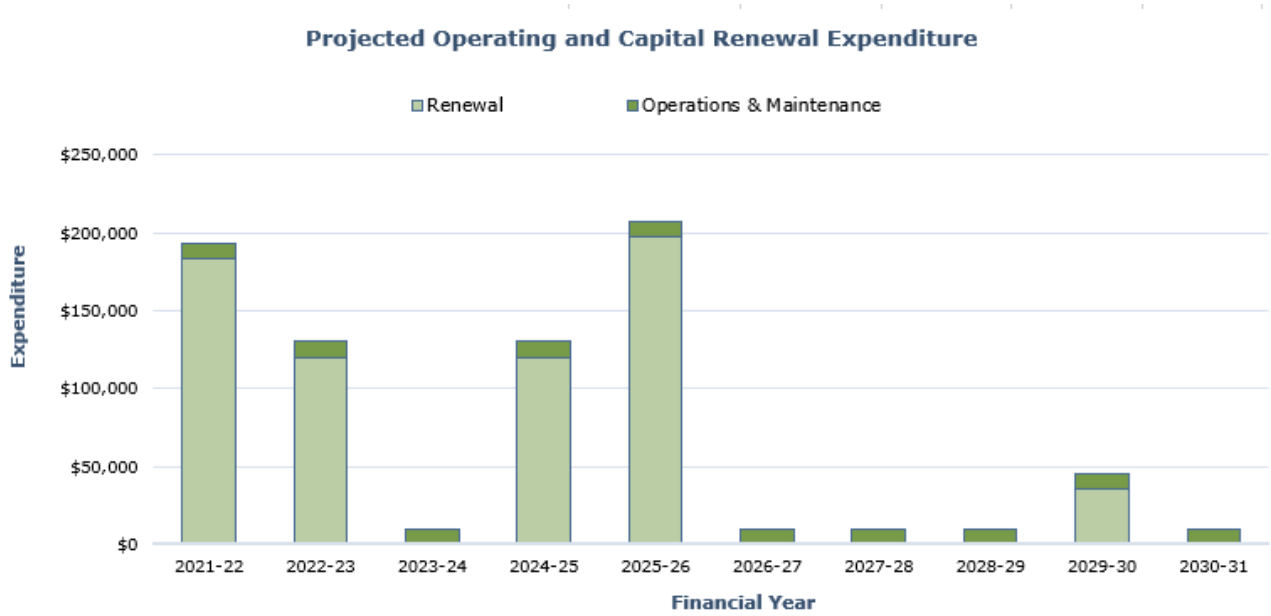


Figure 4 Projected Expenditure for Bridge Infrastructure

3.3.6 Asset Renewal Funding Ratio

No financial restrictions were applied in the development of this plan in an effort to ensure all maintenance and renewal requirements were appropriately captured. Council's Long Term Financial Plan (LTFP) has however delivered a reality check to this approach as there are other financial obligations within Wakefield 2030 Strategic Plan and a commitment by Council to responsibly manage any rate increase.

To ensure an appropriate balance is achieved in relation to strategic objectives, rate increases and asset maintenance and renewal, the LTFP requires an Asset Renewal Funding Ratio of 80% for the first four years of this plan. The ratio will increase to above 100% for the remaining half of this plan to ensure all identified maintenance and renewal requirements are delivered by year 10.

It should be noted that the financial numbers within this plan have not been adjusted down and reflect 100% maintenance and renewal requirements. Numbers will only be adjusted within Council's LTFP and Annual Budgets to ensure the financial integrity of each IAMP is preserved and Council remains within its identified financial targets.

4 Future Demand

4.1 Demand Forecast

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 impact.

For bridge assets Council has managed demands placed on existing bridges through lowering load limits and accepting lower levels of service for barriers or in the event of upgrades, installed alternate structures at individual sites such as pipe and headwalls. Upon these treatments occurring in the future the bridge structure is deleted from this Bridge register and considered as Stormwater, however this will depend on the span of the culvert.

Opportunities identified to date for demand management are shown in Table 10.

Table 9 Future Service Level Demands

Demand Driver	Present Position	Projection	Impact on Services
Inadequate Service Level of Bridges	Both Dunns Bridge (BR006) and Quinlans Bridge (BR010) are considered to be in poor condition with impact to the structural integrity	Potential risk to road users for bridge failure	Decommission bridge or construct new bridge
Non-compliant Guard Rails	Four bridges have non-compliant or poor condition guard rails and may present a risk to road users	Potential risk to road users that lose control approaching the bridge	Develop guard rail replacement program to upgrade non-compliant guard rails

4.2 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Council will determine the ability of the existing systems to manage increased requirements. Opportunities identified to date for demand management are shown in the table below. Further opportunities will be developed in future revisions of this Plan.

Table 10 Demand Management Plan

Service Activity	Demand Management Plan
Inadequate Service Level of Bridges	• Determine if bridge can limit type of traffic – i.e. limit to pedestrian/cyclist only • If load limits are not possible, undertake feasibility assessment to determine upgrade options • Council to review potential bridge options and review the corresponding construction costs. • Council to determine if replacement is financially feasible
Non-compliant Guard Rails	• Council to develop renewal program based on non-compliant guard rails

5 Levels of Service

The community generally expect that Council will provide an effective method for the management and maintenance of bridges. Council has defined service levels in two terms and provides the level of service objective, performance measure process and service target in Table 11 and Table 12.

5.1 Community Levels of Service

Community Levels of Service relate to the service outcomes that the community wants in terms of reliability, responsiveness, amenity, safety and financing.

Table 11 Community Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Quality	Bridges are accessible for road users, provide a trafficable deck and safe all-weather access across watercourses	Number of customer requests from road users regarding the quality of the bridge	Zero complaints per year
Function / Capacity / Utilisation	Bridge has the appropriate load limit Bridges to be built to appropriate carriageway width to accommodate agricultural equipment	Load limit aligns with the vehicular traffic for the corresponding road Minimum width of >11m	All bridges have the correct load limit. Bridges are decommissioned or load limit reduced if not viable to upgrade to meet the requirements. Bridges are upgraded if viable and feasible to do so Bridges to be built to appropriate standard width by 2025-26
Safety	Bridges are safe to access with no hazards for all road users. All bridges to have compliant guard rails	Insurance claims Safety and condition inspections	Zero insurance claims Rectify any safety issues picked up in safety audit

5.2 Technical Levels of Service

Technical Levels of Service support the community service levels and are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the Council undertakes to best achieve the desired community outcomes.

Table 12 Technical Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Operations & Maintenance	Bridges are maintained at standard to enable road users to safely access the bridge with no high risk hazards Bridges have appropriate signage for load limits	Regular inspections of bridges Reactive to customer service requests	All bridges are financially feasible to be maintained at a safe standard with appropriate signage. For bridges that are not viable to maintain, Council to consider decommissioning or changing the load limit depending on usage and traffic routes
Renewal	Bridge components are renewed once the component is at end of life	Undertake condition audit every 4-5 years for all bridges within the network. All components in poor condition to be considered for renewal in the renewal plan	For bridges due for renewal, Council to review bridge usage and determine appropriate replacement that is feasible for the community and financially viable for the Council
Upgrade	Bridges have appropriate load limit and compliant safety components. Upgrade bridge and guard rails were required	Review load limit and traffic logistics of bridge Review guard rails compliance within bridge inspection report and determine if upgrade is required	All bridges to be compliant for load limit and safety

5.3 Known Deficiencies

A condition assessment was undertaken in 2018 as part of the 1 July 2018 valuation. The condition assessment data was used to develop the overall condition of each bridge component to determine the remaining life. An additional inspection was undertaken in 2019 of the Council's bridges deemed to be low-service level. The inspection was undertaken to identify service deficiencies and non-conforming/deteriorated guardrails. The outcomes are detailed in the following subsections.

Council have also implemented load limits on bridges to manage the traffic loading on the structure, this is detailed in the sub section below.

5.3.1 Load Limited Bridges

The bridges that are load limited are addressed in the following table.

Table 13 Load Limits

No.	Bridge	Load Limit
BR004	Adrian Clark Bridge	5 Tonnes
BR006	Dunns Bridge	3 Tonnes
BR010	Quinlans Bridge	5 Tonnes

Image 1 BR004 Adrian Clark Bridge (5T)

Image 2 BR006 Dunns Bridge (3T)

Image 3 BR010 Quinlans Bridge (5T)

5.3.2 Inadequate Guard Rail

The guard rails that are either non-compliant or in poor condition are addressed in the following table.

Table 14 Inadequate Guard Rail

No.	Bridge	Deficiency
BR001	Kybunga Top Road	Guard railing has been damaged by impact and is in poor condition. Guard railing is unlikely to meet current standards and may not be suitable for vehicle impact. See Image 4
BR003	Big Dipper Road	W beams at 40m length, rusting but firmly attached, posts are newer than beam, beam has been re-used. Surface corrosion on beams, particular on back face. See Image 5
BR004	Adrian Clark Bridge	Extension of bridge barrier recommended due to significant the fall height particularly at north west and south east approaches. See Image 6
BR005	Watchman Road	Maintenance is required to address spalling of concrete barrier posts. Wooden w-beam posts require replacement due to significant deterioration and a w-beam termination requires maintenance. See Image 7

Image 4 BR001 Guard Rail (2019)

Image 5 BR003 Guard Rail (2019)

Image 6 BR004 Guard Rail (2019)

Image 7 BR005 Guard Rail (2019)

5.3.3 Low Service Level

The bridges that are deemed to be in structurally poor condition with known service deficiencies are addressed in the following table.

Table 15 Low Service Level

No.	Bridge	Deficiency
BR001	Kybunga Top Road	Deck is spalling mainly along edges isolated areas underside, tension cracking underside approximately mid span between all beams. corrosion to beams, barriers badly damaged and very low on eastern side. See Image 8
BR004	Adrian Clark Bridge	Major cracking in stone abutment. See Image 9
BR006	Dunns Bridge	Bridge is in poor condition and structural integrity of the bridge has likely been impacted. Dunns Bridge has been superseded by a DIT bridge, however the bridge is still open to vehicle traffic (3T Load Limited). See Image 10
BR010	Quinlans Bridge	Bridge 10 was observed to be in a very poor condition. The superstructure and deck were considerably degraded. The bridge deck and superstructure currently pose a safety risk to users as significant degradation has occurred and a safe working limit has not been determined. See Image 11

Image 8 BR001 Kybunga Top Rd

Image 9 BR004 Adrian Clark

Image 10 BR006 Dunns

Image 11 BR010 Quinlans

6 Plan Improvement and Monitoring

The following tasks have been identified for improving future versions of the Plan. Council should assign responsibilities and resources to these tasks as part of the endorsement of the Plan.

Table 16 Tasks Identified for Improving Future Versions of the Plan

Task No.	Task	Responsibility
1.	Streamline the internal recording of maintenance expenditure on bridges so that the future versions of this plan are informed more accurately	Council
2.	Quantify customer service requests and compare against service targets	Council
3.	Undertake feasibility investigation for BR010 Quinlans Bridges and determine appropriate actions	Council
4.	Quantify maintenance requirements for all bridges	Council
5.	Review bridges with non-compliant guard rails and upgrade in line with relevant Australian Standards	Council
6.	Council to implement Risk Management Assessment of bridge infrastructure as described in Section 3.2	Council

This Plan will be reviewed during annual budget preparation and amended to recognise any changes in service levels and/or resources available to provide those services as a result of the budget decision process.

Appendix A Capital Renewal

Bridge ID	Road Name	Proposed Work	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
BR001	Kybunga Top Road	Replace bridge with culvert system	$0	$0	$0	$120,000	$0	$0	$0	$0	$0	$0
BR002	Kybunga Top Road	Bridge upgraded in 2019-20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BR003	Big Dipper Road	Guard Rail replacement in 2021-22. Wingwall replacement in 2029-30.	$18,000	$0	$0	$0	$0	$0	$0	$0	$35,549	$0
BR004	Adrian Clark Bridge	Replace bridge with culvert system	$0	$120,000	$0	$0	$0	$0	$0	$0	$0	$0
BR005	Watchman Road	Guard Rail replacement.	$0	$0	$0	$0	$197,106	$0	$0	$0	$0	$0
BR006	Dunns Bridge	Install bollards and minor repairs required	$65,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
BR007	Whitwarta	Guard rail replacement planned for 2020-21	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BR008	Old Whitwarta Bridge	Bridge upgrade planned for 2020-21	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BR009	Old Blyth Brinkworth Bridge	Guard Rails upgraded in 2019-20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BR010	Quinlans Bridge	Replace bridge with culvert system	$100,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
BR011	Jenkins Bridge, Kybunga Top Rd	Bridge upgraded in 2019-20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Total	$183,000	$120,000	$0	$120,000	$197,106	$0	$0	$0	$35,549	$0