

Transport Asset Management Plan 2019-2023



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Executive Summary

The objective of infrastructure asset management is to ensure that assets provide their required levels of services in the most cost effective manner. This Asset Management Plan focuses on the management of the Queanbeyan-Palerang Regional Council's (QPRC) Transport assets. This plan specifies the requirements for effective management of this asset group and the corresponding financial implications. This plan is reviewed annually, with a formal update completed every 4 years.

Effective asset management of the Queanbeyan-Palerang's Transport assets will contribute towards achievement of the following strategic objectives¹ :

- Maintenance of road infrastructure to allow safe and easy travelling through the region; and
- Advocacy for improved public transport.

The contribution towards achievement of these strategic goals and asset management objectives will be achieved by:

- Stakeholder consultation to establish and confirm service standards.
- A regular program of inspections and monitoring activities to assess asset condition and performance.
- Application of a systematic analysis to prioritise renewals and establish the most cost effective works programs.
- Continuously reviewing and improving the quality of Asset Management practices.

QPRC's Transport infrastructure assets comprises of:

- Sealed Roads
- Unsealed Roads
- Bridges & Major Culverts (6m & over in length)
- Paths
- Car-parks
- Kerb & Gutters
- Other Road assets – Road Island, Signage, Bus shelters, Street Lighting² etc.

These assets have a current replacement cost of \$819 Million³.

¹ QPRC Community Strategic Plan 2018-2028

² Only some street lighting controlled by QPRC. The remaining streetlight assets are owned and operated by SP Ausnet

³ QPRC Annual Financial Statements 30 June 2019

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1 Introduction

1.1 Background

The Queanbeyan-Palerang Regional Council's Transport assets support delivery of a safe and reliable road and transport network. These assets must be properly maintained and developed to continue to provide adequate service and benefits for generations in the future. This plan demonstrates Council's responsive management of Transport assets (and services provided through these assets), compliance with regulatory requirements and proposed funding requirements to provide the required levels of service.

This plan demonstrates how Council will achieve this outcome by applying the principles of responsible Asset Management Planning, the object of which is to:

'Deliver the required level of service to existing and future customers in the most cost effective way'.

The key elements of infrastructure asset management are⁴ :

- Taking a life cycle approach.
- Developing cost-effective management strategies for the long term.
- Providing a defined level of service and monitoring performance.
- Understanding and meeting the demands of growth through demand management and infrastructure investment.
- Managing risks associated with asset failures.
- Sustainable use of physical resources.
- Continuous improvement in asset management practices.

1.2 Assets included in this Plan

Transport assets are only incorporated in this plan. Information of other asset classes should be referred the relevant Asset Management Plan.

Under the Transport Service, the following Asset Types are included in this AMP:

- Roads
- Bridges and Major Culverts (6m and above in length)
- Guardrails/Barriers
- Kerb and Gutters
- Pathways including Cycleways
- Bus Shelters

⁴ IPWEA, 'International Infrastructure Management Manual' (IIMM), 2015

- Signage
- Road Islands
- Retaining Walls
- Other road infrastructure not covered above⁵

Some of these assets classes also pertain to other AMPs however, only assets assigned to service of Transport are included in this AMP.

1.3 Strategic and Corporate Goals

This Transport AMP has been prepared under the direction of Council's vision, mission, goals and objectives and is to read with Council's Asset Management Policy, Asset Strategy and the following associated planning documents:

- QPRC Community Strategic Plan 2018 – 28;
- QPRC Delivery Program 2018 – 21;
- QPRC Operational Plan 2019 – 2020;
- QPRC Strategic Directions;
- Integrated Transport Strategy;
- Queanbeyan Car-parking Strategy 2018-2028;
- Queanbeyan CBD Transformation Strategy 2017;
- QPRC Transport Service Review Report 2018;
- QPRC Unsealed Road Maintenance – Grading Policy;
- Local Strategic Planning statement 2020.

1.4 Legislative Requirements

QPRC has to meet many legislative requirements including Australian and State legislation and State regulations. These include:

- Local Government Act 1993;
- Local Government Amendment (Planning and Reporting) Act 2009;
- Environment Planning and Assessment Act 1979;
- Roads Act 1993;
- Civil Liability Act 2002;
- Protection of the Environment Act 1997;
- Work Health and Safety Act 2011;
- NSW Roads Act 1993;
- Fisheries Management Act 1994;
- National Parks and Wildlife Act 1974; and
- Biodiversity Conservation Act 2016

This is not a full and comprehensive list of all legislative requirements Council are required to adhere to in maintaining infrastructure assets. QPRC will exercise its duty in compliance with all legislation to the best of its ability.

⁵ This Plan does not include street lighting which is primarily owned, operated and maintained by Essential Energy.

2 Levels of Service

2.1 Community Levels of Service

Community levels of service typically relate to service attributes such as quality, reliability, responsiveness, sustainability, timeliness, accessibility and cost⁶.

In August 2018, a custom service survey was conducted to:

- Assess resident satisfaction; and
- Better understand the community's priorities with regard to service and facilities.

The results of the survey have been utilised as an indicator of community satisfaction with QPRC's core Transport assets.

QPRC when benched marked against eight other similar sized NSW Council's received an overall satisfaction rating of 3.5/5 compared to an average satisfaction rating of 3.2/5. The bench marking also indicated QPRC was performing at the top end of community satisfaction for all services provided.

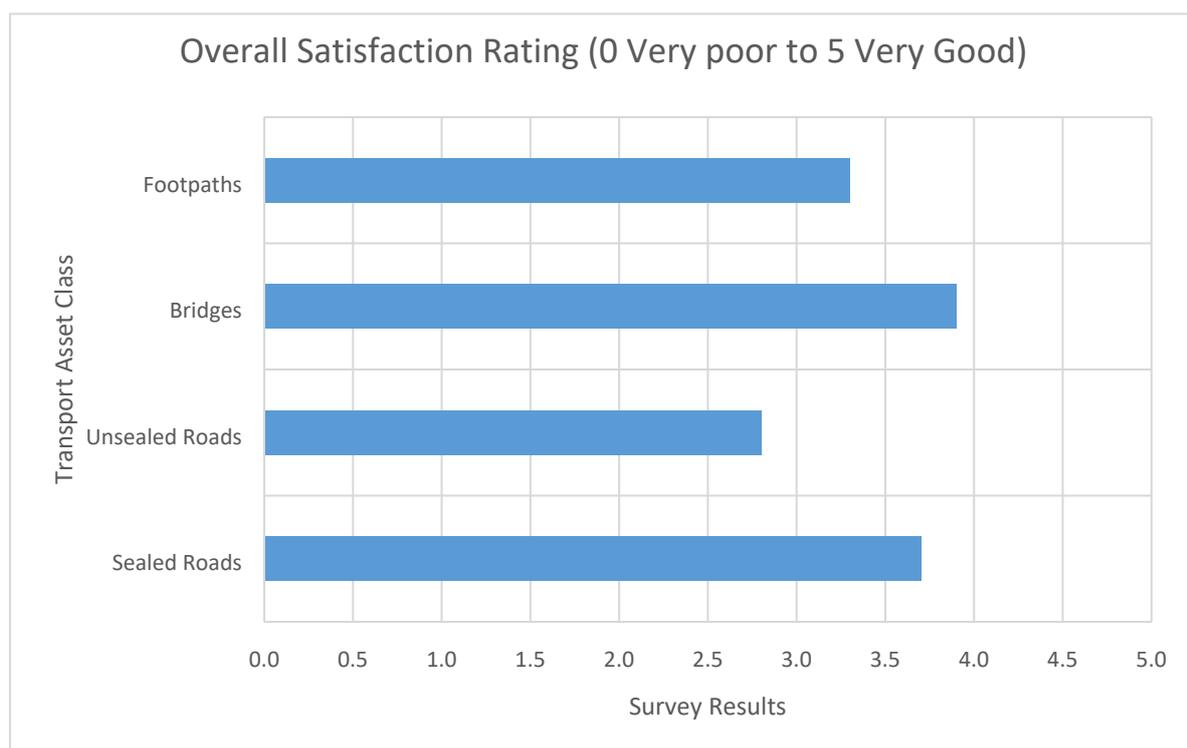


Figure 1 - Customer Satisfaction Survey

Of all the asset classes surveyed, QPRC's unsealed roads rated the lowest satisfaction rating. Unsealed roads also rated low on importance compared to other services provided by QPRC indicating a low desire to commit to large upgrade programs. In comparison with bench marked Councils, QPRC was performing at the top of the rating system.

⁶ IMM 2015 - Level of Service definition, section 2.2

The anticipated community outcomes for transportation assets are:

- An integrated and well maintained transport network via roads and shared paths to support the local community and promote activity
- Council ensures developed infrastructure is constructed in compliance with assessed standards and is 'fit for purpose'
- Safe and well maintained built facilities meet the cultural, recreational tourism and community service needs of all ages and abilities in our community
- Plan and implement effective infrastructure to assist maximising experiences for the Shires' visitors.

Table 1 - Community Service Levels

| Service Attribute | Service Objective | Performance Measure Process | Current Performance | Expected position in 10 years based on current LTFP |
|--------------------------|--|--|---|--|
| Sealed Roads | | | | |
| Quality | Provide smooth and safe travel | Road surfaces resealed on average every <15 years | Current reseat program meets requirements | Reseat and reconstruction program optimised based on condition |
| Function | Meets user requirements for: <ul style="list-style-type: none"> • Accessibility • Traffic Control (safety) • Lighting | Customer satisfaction survey | Survey Result 3.8/5 | Survey Result > 4/5 |
| Capacity/ Utilisation | Capacity is appropriate to service hierarchy | Roads free from speed reductions based on condition, safety or alignment limitations and do not cause undue delays | Data not available | All sealed roads meet hierarchy requirements |
| Unsealed Roads | | | | |
| Quality | Provide smooth and safe travel | Maintenance grading undertaken in accordance with QPRC Policy | 750 km road grades annually | All road regarding maintenance undertaken within 1 month of schedule |
| Function | Meets user requirements for: <ul style="list-style-type: none"> • Accessibility • Traffic Control (safety) | Customer satisfaction survey | Survey Result 2.8/5 | Survey Result > 4/5 |
| Capacity/ Utilisation | Capacity is appropriate to service hierarchy | Roads free from speed reductions based on condition, safety or alignment limitations and | Data not available | All sealed roads meet hierarchy requirements |

| Service Attribute | Service Objective | Performance Measure Process | Current Performance | Expected position in 10 years based on current LTFP |
|---|--|--|---|---|
| | | do not cause undue delays | | |
| Footpaths (footpaths, boardwalks, cycleways) | | | | |
| Quality | Provide even surfaces free from major trip hazards | High risk defects rectified within 7 days of identification | Data not available | > 95% high risk defects rectified within time frame |
| Function | Meets user requirements for accessibility | Customer satisfaction survey | Survey Result 3.3/5 | Survey Result > 4/5 |
| Capacity/ Utilisation | Provided for pedestrian and cyclist demand | New paths and upgrades undertaken based on demand analysis | New paths provided in new development areas as required in design standards | TBD |
| Bridges | | | | |
| Quality | Provide smooth ride | Bridge decks maintained as required | Data not available | < 6 customer complaints /year |
| Function | Meets user requirements for: <ul style="list-style-type: none"> • Accessibility • Traffic Control (Safety) | New and upgraded bridges designed to latest traffic safety standards and are accessible during agreed flood levels | Data not available | 100% bridges meet accessibility requirements |
| Capacity/ Utilisation | Bridge width, height and weight capacity is suitable for road hierarchy | Bridges free from load limits | 5 Bridges currently load limited | No bridge load limited |
| Kerb and Gutter | | | | |
| Quality | Deliver visual amenity free of nuisance and street drainage and ponding | Customer requests relating to kerb and gutter | TBD | Service requests are less than 12/year |
| Function | To pick up stormwater runoff from the road carriageway and adjoining footpaths/properties and channel it to the stormwater system for discharge. Also provides carriageway delineation and road pavement containment | Inspections and customer service requests | TBD | Service requests are less than 1/month |
| Capacity/ Utilisation | Provide safe and suitable roadside | Inspections | TBD | Decrease ponding |

| Service Attribute | Service Objective | Performance Measure Process | Current Performance | Expected position in 10 years based on current LTFP |
|-------------------|---|-----------------------------|---------------------|---|
| | drainage free from hazards - Water ponding on roadside - Mosquito harbour | | | |

2.2 Technical Standards

2.2.1 Design and Construction Standards

The standard of construction of new Transport assets and for enhancing, renewing and refurbishing existing Transport assets will be in accordance with the standards adopted by Council in any particular instance. QPRC has adopted the following two frameworks for the design and maintenance of transport assets:

- Aus-Spec - The requirements to meet this standard is covered in QPRC Development Control Plans which include the following Engineering Design and Construction Specifications:
 - Googong construction specifications
 - Googong design specifications
 - QPRC construction specifications
 - QPRC design specifications
 - South Jerrabomberra construction specifications
 - South Jerrabomberra design specifications

The Engineering Design and Construction Standards take into account the expected community levels of service in the provision of new infrastructure. Aus-Spec applies to all gifted assets provided to council.

- QPRC also follow Transport NSW design and construction standards for the regional road network to comply with funding conditions and maintenance requirements. The Transport NSW specifications are predominantly used for internally delivered transport projects.

2.2.2 Maintenance Standards

Levels of service for maintenance of the Transport assets take into account:

- Industry standards⁷;
- The need to provide a road network that is safe for all users; and
- Ability of Council to fund maintenance activities.

⁷ IPWEA NSW Guidelines and Practice Notes

The technical standards for maintenance activities are defined in the QPRC Transport Maintenance Plan⁸. This document informs QPRC’s EAM on generation of scheduled work orders for asset inspections and routine maintenance activities.

Table 2 - Maintenance Standards

| Asset Feature | Functional Requirements of Maintenance |
|----------------------|--|
| Sealed Surface | <ul style="list-style-type: none"> • Provide safe driving conditions, uniform seal appropriate to classification of the road. • Minimise rate of deterioration of the pavement. |
| Unsealed Road | <ul style="list-style-type: none"> • Provide safe driving conditions and ride-ability appropriate to the classification of the road. |
| Bridges | <ul style="list-style-type: none"> • Provide safe driving conditions and load ratings suited to road classification |
| Drainage | <ul style="list-style-type: none"> • Provide hydraulic capacity (large enough to carry normal storm flows), road structure, structural integrity and clear flow of water away from the road pavement. |
| Signs | <ul style="list-style-type: none"> • Provide clear messages to motorists in day and night conditions and be authentically sound. |
| Guard Fencing | <ul style="list-style-type: none"> • Provide required structural integrity for errant vehicles to minimise accident severity. |
| Traffic Islands | <ul style="list-style-type: none"> • Provide safer travel and traffic calming as required. |
| Footpaths | <ul style="list-style-type: none"> • Provide safe pedestrian travel and minimise trip hazards within acceptable tolerances. |
| Vegetation | <ul style="list-style-type: none"> • Minimise weed infestation, sight distance hazards, fire hazards and over-hanging/encroachment hazards while recognising the importance of environmental issues. |

The following matters have also been taken into account with development of the maintenance standards:

- Routine maintenance standards – routine maintenance, repair functions and standards, intervention levels and actions are based on risk assessment for a particular asset element (eg. road, pathway, bridge) and road type. Standards vary across the road network in line with relevant risk factors such as traffic volumes, composition of

⁸ QPRC Transport Maintenance Plan

traffic, operating speed, the susceptibility of assets to deterioration, the cost effectiveness of repairs, and competing priorities for funding.

- Repair and maintenance works – routine maintenance and repair works are undertaken within a specified reasonable period of time having regard to intervention action priorities, and to specified standards.
- Temporary measures – temporary works to be undertaken to reduce the risk of an incident until such time as maintenance or repair works can be completed. Response times and measures (eg. warning signs, flashing lights, safety-barriers) are determined based on the risk to safety and the type, volume and nature of road usage.
- Emergency works – works required to be undertaken immediately outside routine works programs to ensure the safety of road users and the public as a result of emergency incidents. Emergency works include traffic incident management, responses to fires, floods, storms and spillages.

The Transport Maintenance Plan (Under Development) details all planned and routine maintenance schedules that are in place for transportation asset classes. As QPRC transitions towards a more proactive maintenance planning position, this plan will be amended with additional inspections and routine maintenance work orders documented. It is envisaged that proactive inspections and maintenance activities will be delivered through Councils Enterprise Asset Management system's Mobility platform.

3 Future Demand

3.1 Demand Drivers

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

3.2 Population Change

Queanbeyan-Palerang's population has been growing consistently around 2% per annum in previous years and in 2018 was 59,499. Over the life of this asset management plan, population is expected to continue to grow at a rate of 1.8% per annum.

Population growth will primarily occur in residential developments in Googong, South Jerrabomberra and Bungendore. This increase in population and dwelling growth will contribute to increased demand on the existing Transport assets and public Transport requirements.

3.3 New Technology

Changes in technology may enable QPRC to better understand asset life and operation and maintenance requirements for its Transport assets.

As part of the Smart Cities Project, technologies to be introduced will include smart lighting, car parking sensors, electric charging stations and other technology that could be used to provide residents with better information of traffic conditions and available parking spaces and hence reduce the requirement for establishment of additional parking spaces in the Queanbeyan CBD precinct.

New technology also includes applying alternative treatments that have not been previously used by Council in maintaining its infrastructure assets. Included in this could be the application of Graded Aggregate Total Treatment (GATT) seal on a section of low volume unsealed roads to extend the maintenance life of the asset.

Other technological advances in material science will lead to increased use of recycled material in transport assets including the substitution of extractable resources with crushed glass, granulated rubber and other reusable products for pavement rehabilitation works.

3.4 Climate Change Adaptability and Sustainability

Planning asset management activities will need to make allowances for potential climate change conditions. Some of the predicted impacts of climate change include:

- Lower annual rainfall
- Higher average temperatures
- More severe weather incidents (average v extreme conditions)

Impacts on Infrastructure issues due to climate change include increased risks associated with flooding, bush fire, extreme heat and prolonged drought conditions. Each impact will affect how assets will need to be maintained to meet agreed levels of service. Infrastructure assets will also need to consider carbon emissions minimisation throughout the life cycle and promote environmentally sustainable practices.

3.5 New Transport assets from growth

Significant urban expansion has been planned over the life of this asset management plan that includes:

- Continued development of the Googong Township area
- Development of South Jerrabomberra/Tralee area
- Development of Bungendore

The direct result of the increased population will be an increase in vehicle movements between new developments and places of work/commercial areas. Monitoring of existing capacity of the transport system needs to be regularly undertaken to ensure capacity levels of service can be maintained within community expectations.

The new Transport assets will be acquired from developer contributions and will be delivered directly by Council to ensure the new developments are linked to existing infrastructure. Major transport infrastructure planned to be delivered by Council includes the Ellerton Drive extension, Old Cooma Road upgrade, and the proposed Dunns Creek Road connection to the ACT.

Additional assets will increase the obligation of ongoing maintenance & renewal costs.

Projected additional assets & their maintenance/renewal costs are summarised in Section 4.

3.6 Demand Management

QPRC's Asset Strategy outlines the following objectives that address demand drivers and align with cross border and regional infrastructure strategies and spatial asset planning to:

- Manage asset backlog and risk
- Support connection of communities and health of the community, local economy and environment
- Sustainably cater for population growth and integrational equity
- Integrate with cross border infrastructure and align with regional infrastructure strategies
- Establish affordable and acceptable standards, including intervention levels, gifted assets from developments
- Plan assets spatially taking a corridor/network approach; and to analyse condition and failure.

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures⁹. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

3.7 Asset Program to meet Demand

The new assets required to meet growth will be acquired as “Gifted” assets through developer lead asset creation and through construction of assets through Council’s capital works program. Assets required for the demand projections also include enhancement of existing assets, such as road widening, sealing of unsealed roads and alterations of intersections to cater for increased demands without impacting the agreed levels of service requirements.

The peak in asset creation in 2019/20 is a result of the construction of the Ellerton Drive extension and Old Cooma Road upgrade projects. It should be noted that the demand driven capital works program indicated here will commit QPRC to fund ongoing operations, maintenance and renewal costs for the life of the assets created.

⁹ IPWEA, 2015. IIMM. Table 3.4.1

4 Lifecycle Management

This section outlines asset performance and condition information, and uses Asset Management principles to develop broad strategies and works programs to achieve the required service standards.

It presents an analysis of the available information and the life cycle management plans covering the three key work activities to manage the Transport Asset Classes:

- Operations and Maintenance Plan - Activities undertaken to ensure efficient operation and serviceability of the assets. This will ensure that the assets retain their service potential over the course of their useful life. Included in activities are the inclusion of safety measures required to protect users and QPRC's assets.
- Renewal Plan - Provides a program of progressive renewal of individual assets. Deteriorating asset condition primarily drives renewal needs.
- Enhancement Plan - Provides a program of system enhancements to improve parts of the system performing below target service standards and to develop the system to meet any future demand requirements. Sub-standard asset performance primarily drives asset development needs.

4.1 Physical Parameters

Following are the summaries of Transport assets covered in this Transport AMP:

Table 3: Transport Asset Inventory Summary (as at 30 June 2019)

| Asset Type | Quantity of assets |
|---|--------------------|
| Sealed Road | 905 Km |
| Unsealed Road | 754 Km |
| Bridge | 141 bridges |
| Path | 228 Km |
| Car-park | 99,303 Sqm. |
| Kerb & Gutter | 484 Km |
| Other Assets (Bus shelter, Street furniture, Road island, crash barriers, street lights, smart city infrastructure) | Numerous |

4.2 Asset Age Profile

The age profile of the assets (against depreciable amount only) included in this AMP is shown in the figure below.

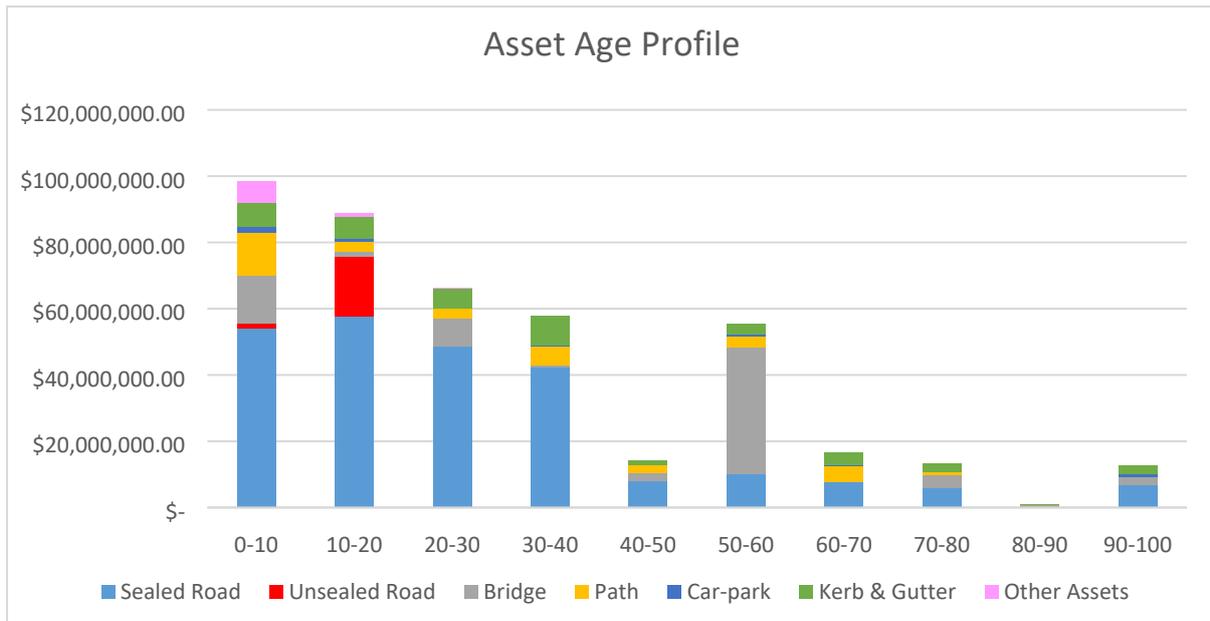


Figure 1: Asset age profile

4.3 Asset Capacity and Performance

Council’s Transport network services are generally provided to meet design standards and level of service.

Locations where deficiencies in service performance have been identified are described within this section of the Asset Management Plan.

Table 4: Known Service Performance Deficiencies

| Asset Class | Service Deficiency |
|-------------------|--|
| Transport Network | The transport network is a combination of urban and rural areas that require different approaches to be provided across the entire LGA. Proximity to the ACT also has impact on transport network. |
| Rural Roads | Majority of rural roads are low traffic volume and are spread out across LGA. Lack of specific safety barriers to minimise incidental accidents through run-off road and animal contact. |
| Unsealed Road | Large unsealed road network that requires regular maintenance to retain customer satisfaction with service. No policy in place to determine if and when unsealed roads should be upgraded and sealed. Gravel is becoming more scarce and harder to source. Lack of adequate road barrier on known accident hotspots. |
| Bridge | QPRC has over 140 bridges and major culverts in the system. The condition of the timber bridge assets will require significant funding to maintain to agreed service levels or to replace with new bridges. A replacement program has been established for timber bridges based on the condition rating. |
| Path | Path widths are variable and have different conditions throughout the LGA. Currently there is no policy in place to determine if and when a path is to be upgraded or the network extended to meet future needs including upgrading to meet disability access requirements. |
| Car-park | Carpark condition is variable across the LGA and demand for future requirements is poorly understood. |

| | |
|--|---|
| Kerb & Gutter | Kerb and guttering maintenance is reactive with no service arrangements in place. Issues associated with old blue-stone gutters in Braidwood need to be resolved. |
| Other Assets (Road island, furniture, crash barriers etc.) | Little information is available within the asset system for this class of assets. Before consideration can be given to management of these assets, a more thorough data review and collection needs to be undertaken. |

The above service deficiencies were identified from technical knowledge and expertise through existing AM systems and staff. Capacity and performance needs to be monitored and adjustments made as it is identified.

Council are also working with Essential Energy to upgrade street lighting to more efficient LED lights.

4.4 Asset Condition

Asset condition has been determined for QPRC's assets based on a combination of inspections, age profile and staff experience with the Asset Condition stored in the Asset Register against each asset. Council is committed to regular condition data collection in order to mitigate risk and to make informed decisions in accessing the whole of life costs for the asset.

Council utilises the IIMM condition rating system of 1 – 5.

Table 5 - Condition Rating Table

| Condition Rating | Description of Condition |
|------------------|---|
| 1 | Excellent – As New |
| 2 | Good – Minor Defects Only |
| 3 | Average – Maintenance Required to Return to Acceptable Level of Service |
| 4 | Poor – Consider Renewal |
| 5 | Very Poor – Approaching Unserviceable and Requires Replacement |

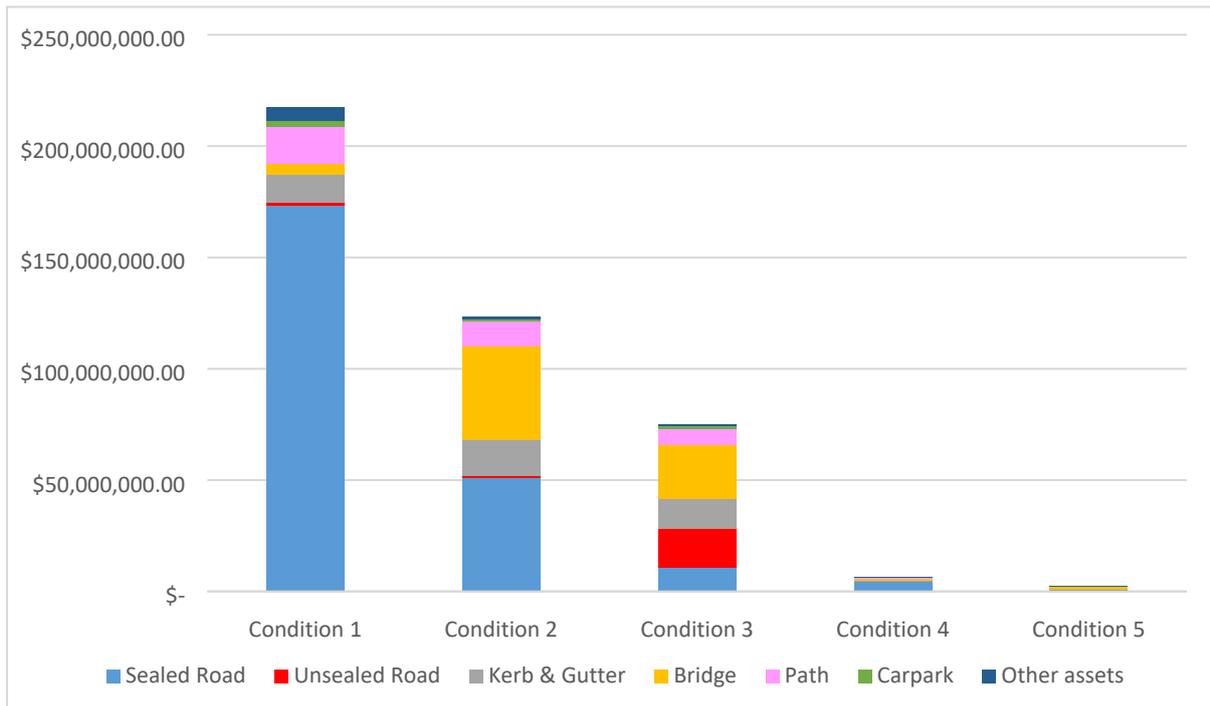


Figure 2 - Asset Condition

Notes: Condition information is not kept for QPRC's unsealed roads due to the changing nature of the surface resulting from environmental factors (weather conditions). An assumption has been made that all unsealed roads will be treated as condition 3.

Road foundation/sub-surface is not depreciable and is not subject to condition rating. It is excluded from this analysis.

4.5 Asset Valuation

QPRC Transport assets were revalued as at 12 May 2016 as part of the formation of the Queanbeyan-Palerang Regional Council. Since the valuation date, additional assets have been realised and capitalised through QPRC's Capitalisation Directive and asset indexations applied according to the Australian Accounting Guidelines.

The \$820 Million transport asset valuations as at 30 June 2019 are as follows:

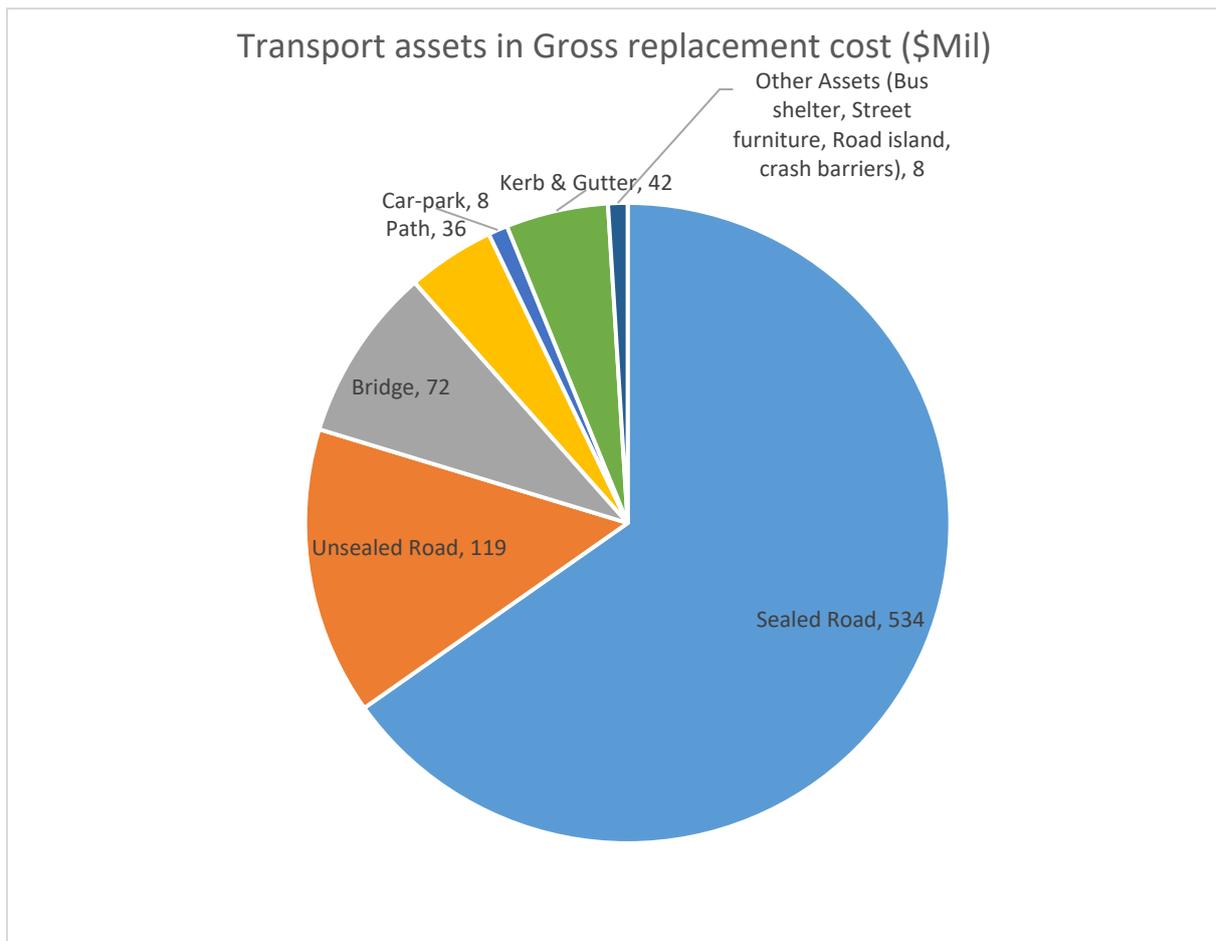


Figure 3 - Current Replacement Cost (\$819 Mil as at 30 June 2019)

4.6 Maintenance Plan

Maintenance planning is required to ensure that council are adequately managing its asset base in an optimal manner. The average expenditure on operational and maintenance activities for the Transport Asset base was **\$11.4M (2.89% of Depreciable Value)**. Due to the current financial accounting system in operation, a reliable breakdown of operational verses maintenance costs is not available. Similarly, a split of maintenance costs for the various asset classes is not fully understood.

Council is moving towards a work-order system that will allow maintenance costs to be more accurately captured directly against the assets which will enable a more transparent view of costs to be provided.

QPRC is endeavouring to improve its asset management practices to include more preventative maintenance activities. This includes developing scheduled inspections and maintenance tasks to reduce expensive reactive repair work. To date, active planned inspections have been developed for:

- Footpaths (Inspection schedules)
- Unsealed Roads (Scheduled grading frequencies)
- Sealed Roads (Scheduled condition reporting)

As the work-order system develops, additional scheduled inspections and maintenance activities will be added further assisting in understanding maintenance requirements and reducing reliance on reactive repair work.

As highlighted in the community satisfaction survey (Section 2.1), the satisfaction rating for unsealed roads was ranked relatively low. Anecdotal evidence indicates the community would like more money and time spent on maintaining unsealed roads however, the survey results indicated this was a lower importance to the overall community. A performance target has been set to grade approximately 175km of the unsealed road network annually which is nearly 25% of the entire unsealed road network. Frequency of grades is determined by traffic volumes as described in the Transport Maintenance Plan and the Unsealed Road Grading Policy.

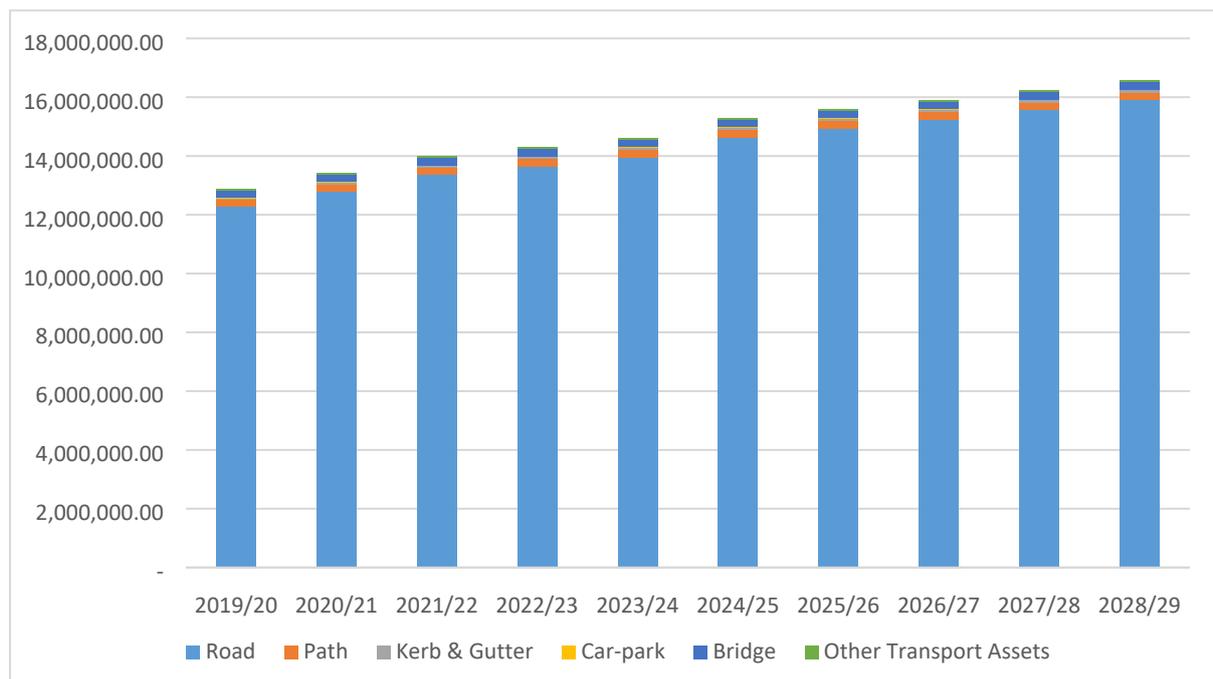


Figure 4 - Forecast O & M Expenditure

Until a holistic picture can be provided on maintenance costs, future maintenance budgets will be increased between **2% - 3%** of depreciable value as a base figure.

If maintenance levels are decreased, there is a possibility that additional asset deterioration will occur and result in increased backlog of rehabilitation and/or replacement requirements to meet level of service requirements.

4.7 Renewal Plan

Renewal expenditure is major work that does not increase the asset’s design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered enhancement or new works expenditure.

Assets requiring renewal are identified from the following:

- Projected from the condition based remaining life calculation.

- Where condition data is not available; age and remaining useful life has been used to calculate.

Prioritisation of the renewal plan is based on an assessment of criticality in terms of importance and related risk. At present, QPRC determines priority based on past experience and knowledge of the asset networks. QPRC's asset strategy states that renewal of assets should not occur unless the condition rating is worse than 4. Therefore, only transport assets that are close to or have failed should be subject to renewals based on condition.

Renewal works may be deferred if the cost (or aggregate cost) is beyond the current financial ability to fund it. This can occur when there are short term renewal profile peaks, or higher priority works are required on other infrastructure asset groups. When renewal works are deferred, the impact of the deferral on the assets ability to still provide the required level of service will be assessed. Although the deferral of some renewal works may not impact significantly on the short-term operation of the assets, repeated deferral will create a liability (backlog) in the longer term, which may impact on QPRC's ability to achieve an overall asset backlog of less than 2%.

Table 6- Renewal Forecasting Method

| Asset Class | Predictive Criteria Used | Model Used |
|--------------------|--|--|
| Sealed Roads | Condition, Age, Maintenance History, Usage | SMEC Australia |
| Footpath | Existing open defects | PCN – QPRC weighting system |
| Bridge | Condition Inspection | BCN – VicRoads Bridge Condition Number |
| Kerb and Gutter | Condition Inspection | Asset Condition and age |
| Car Parks | Condition Inspection | Asset Condition and age |
| All Others | Asset Age Profile | Not Applicable |

Renewal strategies have been determined based on the following scenerios:

1. Renewals based only on asset condtion.
2. Renewals based on asset life spread over 20 years for unsealed roads, 15 years for resealing works and replacement of 1 timber bridge per year.
3. Renewals based on asset life spread over 40 years for unsealed roads, 15 years for resealing works and replacement of 1 timber bridge per year.

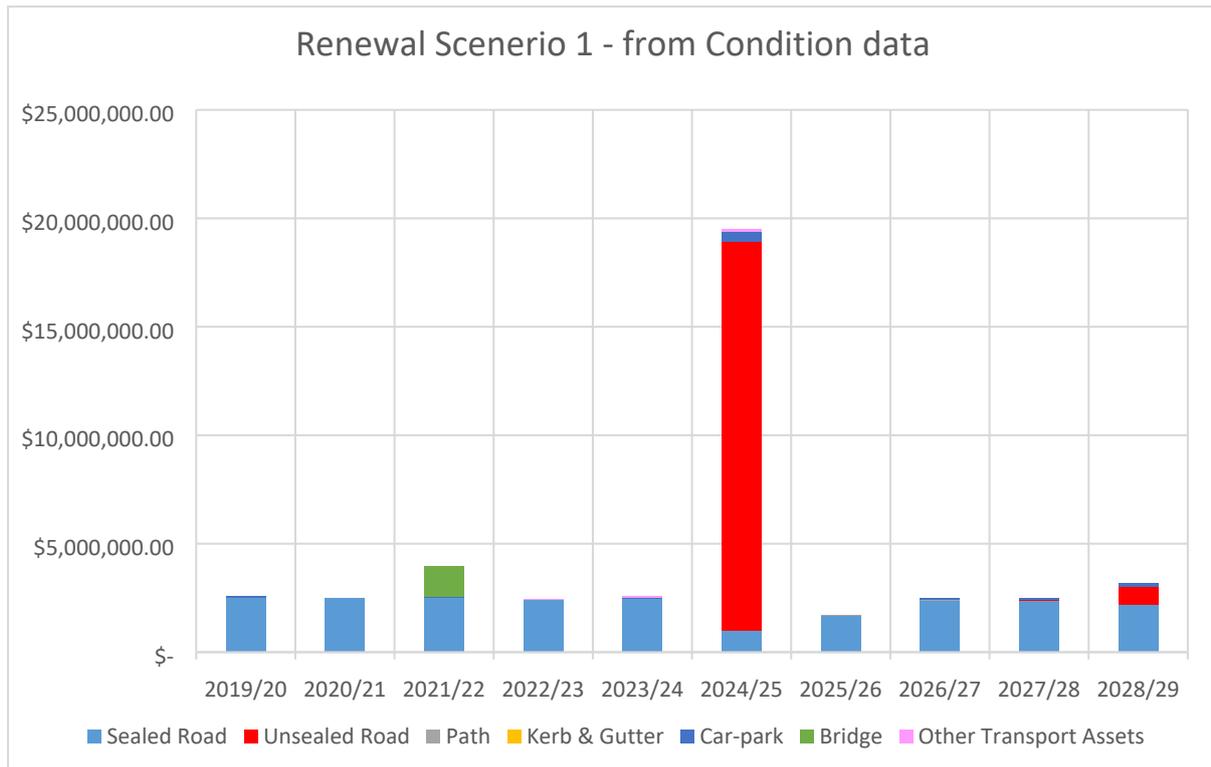


Figure 5 – Scenario 1 Renewal Forecast

Renewal Scenerio 2 - Unsealed base - spread for 20 years (\$1.0 M/Yr);
 sealed surface - spread for 15 years (\$4.0 M/yr); Timber Bridge (1 each
 year)

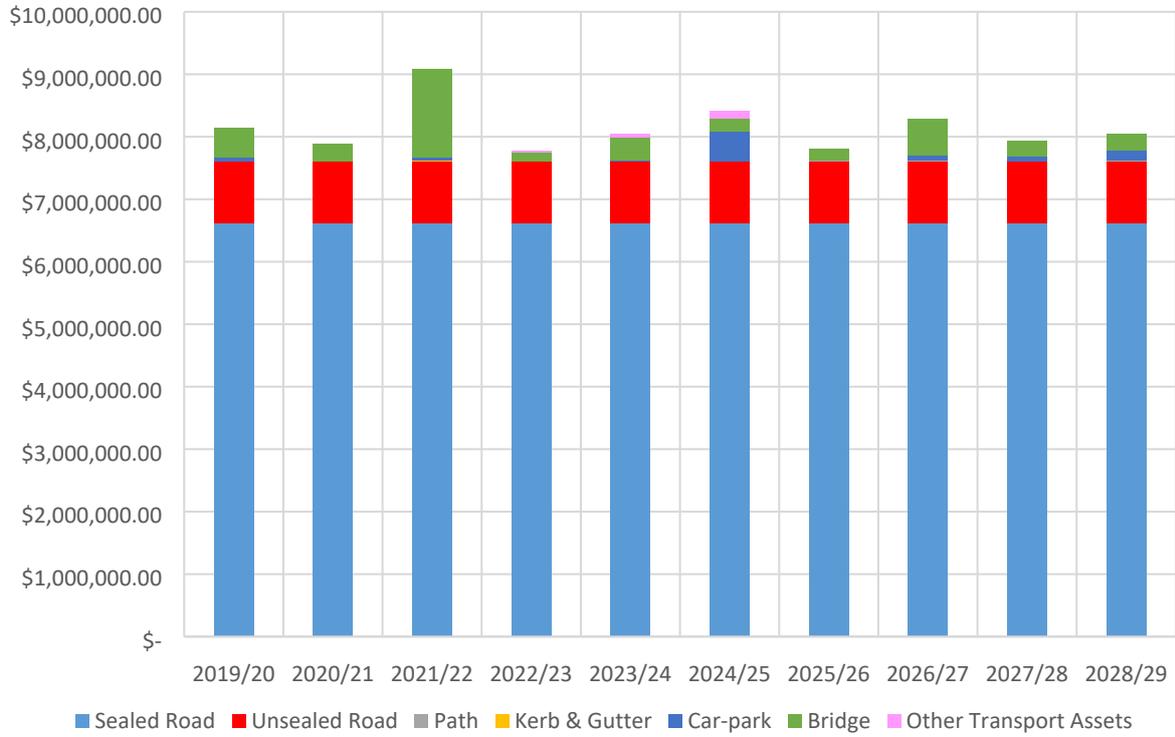


Figure 6 – Scenario 2 Renewal Forecast

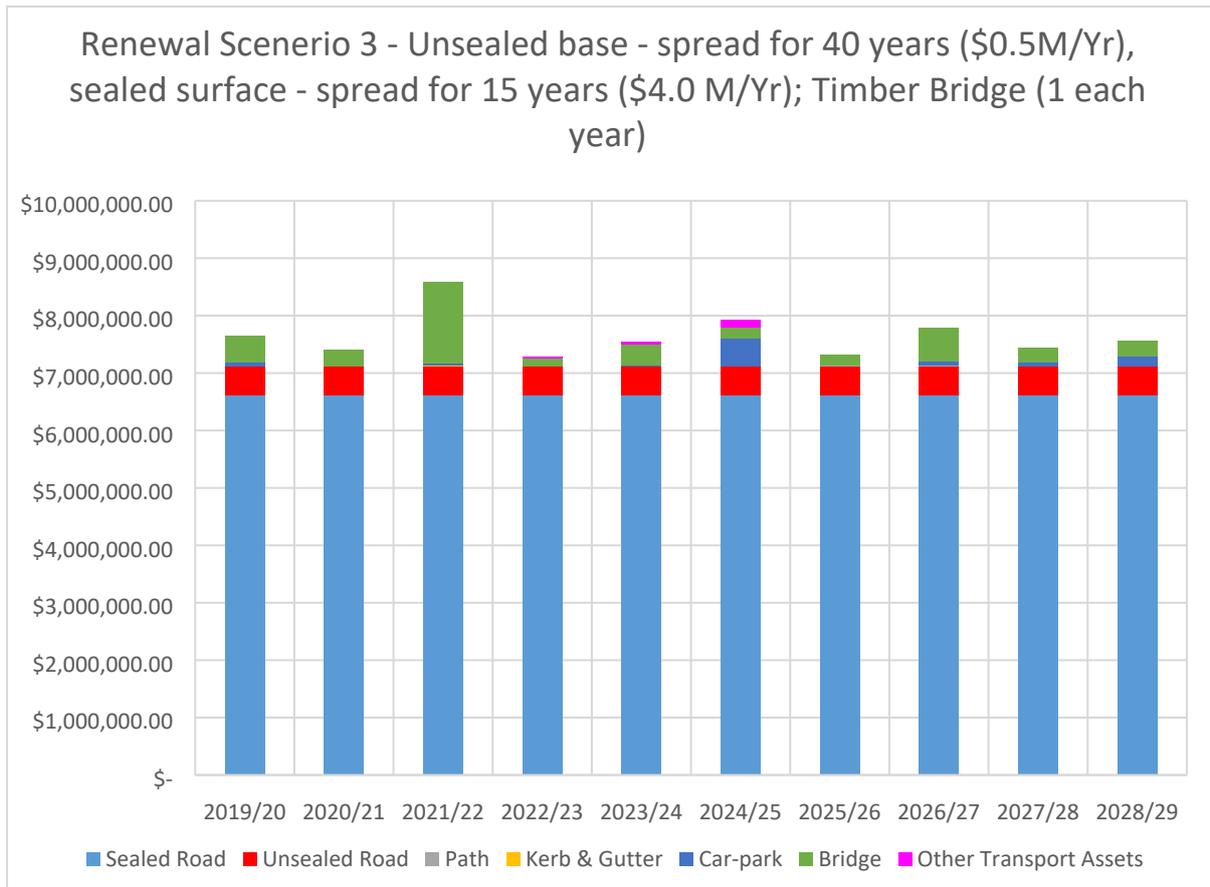


Figure 7 – Scenario 3 Renewal Forecast

Based on minimising peaks in renewal expenditure, scenario 3 will be adopted. This will require unsealed roads to renewed at longer intervals, however, this is expected to be offset by ensuring that maintenance grading activities are undertaken as planned.

A review will need to be undertaken to determine condition rating and the long term suitability of maintenance grade only to enable satisfactory levels of service to be maintained.

Major transport renewal projects identified to occur over the next 4 year period include:

Road Resealing/Rehabilitation

Resealing of roads based on a program of works. Following on from the recent sealed road asset condition survey and modelling that was undertaken using the SMEC Pavement Management System, a works program for the next 5 years has been developed. Modelling of the current sealed road network indicates that the condition of the network will be maintained at or better than the current condition ratings.

The modelling analysis to maintain a similar road condition resulted in an average required reseal/rehabilitation program of \$2.5 Million per year.

Unsealed Road Re-sheeting

Currently, QPRC does not have a formalised unsealed road re-sheeting program. As all unsealed roads are condition rated 3 due to the frequent changes of condition based on

climatic conditions, re-sheeting requirements are determined by inspection and supervisor knowledge.

The lack of a defined condition assessment has been identified in the asset improvement plan.

Timber Bridge Replacement/Rehabilitation

A timber bridge replacement program has been put in place to reduce the number of poor quality timber bridges across the LGA. The replacement program is aimed at reducing the backlog level currently highlighted in the bridge asset class. The replacement program is subject to Government Grant Funding and no discrete funding has been allocated in forward planning for this purpose. Timber bridge replacement is reliant of NSW Government grants for implementation.

4.8 Creation / Acquisition / Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be required at no cost to the organisation from land development, or through 'gifts' provided to Council.

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations.

All new assets created through Capital Project Work must have a business case developed justifying the requirement of the need as documented in QPRC's Capital Project Management Framework.

With the increased "Greenfield" land development that is occurring in Googong, Tralee, Braidwood and Bungendore, the value of new transport assets gifted to Council is expected to be relatively consistent at approximately \$10.8M per year.

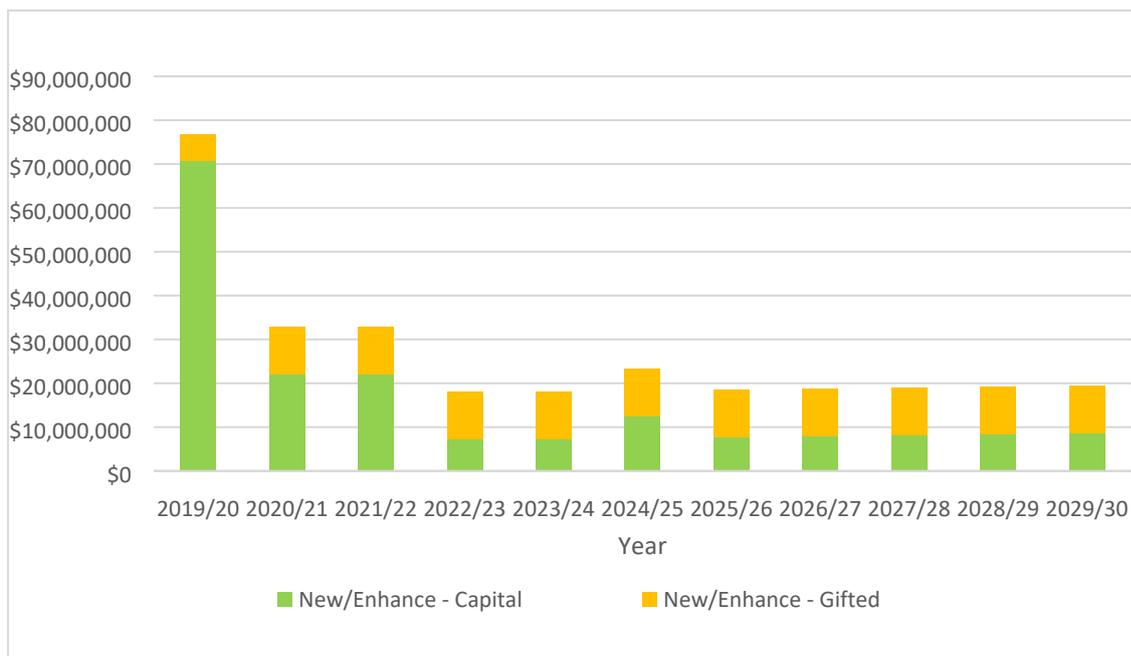


Figure 8 - Demand Driven Capital/Gifted Works Program

4.9 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset, including sale, demolition or relocation. During the course of renewal projects, some assets may be demolished and replaced with a new asset. This occurs during a road rehabilitation project where the surface asset is completely removed and replaced with a new surface asset. At the same time, the base asset may be partially demolished and replaced with other material.

During asset capitalisation, any decommissioned assets or partially decommissioned assets will be identified and the financial values adjusted in-line with the approved accounting practices.

5 Risk Management Planning

5.1 Critical Assets

A critical asset is an asset for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets. Although critical assets have a high consequence of failure, they don't necessarily have a high likelihood of failure. Asset criticality information has been used for prioritising maintenance and renewal work. Mainly asset hierarchy has been considered as criticality ranking for this Transport AMP. A further review of the asset criticality need to be conducted in the future revisions of this Transport AMP.

Table 7 - Transport Risk Management Plan

| Asset Class | Critical Assets | Probable Event | Likelihood of Occurrence | Consequence | Risk Rating |
|-----------------------------------|--|---|--------------------------|-------------|---|
| Arterial Road | Hierarchy 1 – Arterial Roads | Complete failure of road for prolonged period (ie – Flood Damage) | Very Rare | Extreme | High |
| Local Access Road – single access | Hierarchy 5 – Local Access Road (Rural) with one exit. | Complete failure of road for prolonged period (ie – Flood Damage) | Possible | Low | Low to Medium (Critical during fire and flood events) |
| Local Access Road – single access | | Road usable during bushfire | Rare | Extreme | High |
| Timber Bridge | Bridges on the critical sealed/unsealed roads above | Bridge unusable during bushfire | Probable | Extreme | Very High |

5.2 Infrastructure Risk Management Plan

The Transport Risk Management Plan will be developed in future revisions of this Transport AMP.

6 Financial Summary

This section contains the financial requirements resulting from all the information presented in the previous sections of this Transport AMP. The financial projections will be improved as further information becomes available on agreed level of service and current and projected future asset performance. The projections are based on the best available information and are aimed at giving a direction for the Long Term Financial Plan (LTFP).

6.1 Financial Statements and Projections

The financial history and projected expenditures (operation and maintenance, renewal and new/ enhancement) are shown below. Note that all costs are 2018/19 dollar values.

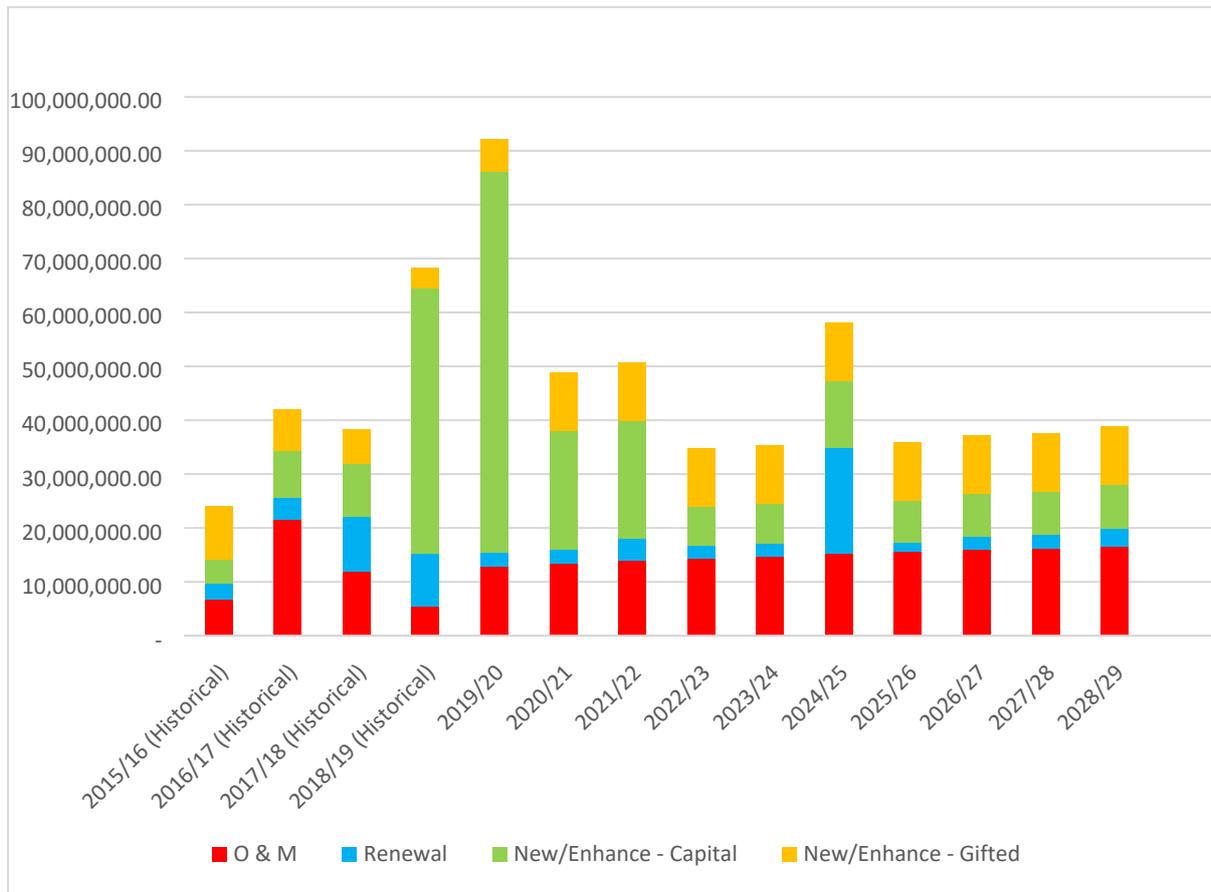


Figure 9 - Asset expenditure & gifted value (historical & predicted)

6.2 Funding Requirements – Asset Replacement

In order to maintain a sustainable asset base, the funding required to replace aging and deteriorated assets should be sufficient to deliver an overall backlog of less than 2%. This will require Council to maintain an asset renewal expenditure ratio of 100% over the 10 year planning period.

Table 8: Renewal expenditure trends

| | Renewal Expenditure (\$ '000) | | | |
|-----------------------------|-------------------------------|---------|---------|---------|
| | 2015/16 | 2016/17 | 2017/18 | 2018/19 |
| Total Renewal expenditure | 2,987 | 4,108 | 10,336 | 9,676 |
| Total Annual depreciation | 5,808 | 8,408 | 8,697 | 9,078 |
| Renewal Expenditure Ratio % | 51% | 49% | 119% | 107% |

Further financial indicators obtained in Special Schedule 7 in the Annual report provide the ratios on any asset funding gaps (backlog) and maintenance ratios.

Table 9: SS7 Reporting

| | SS7 Reporting (\$ '000) | | | |
|--|-------------------------|-------------|-------------|-------------|
| | 2015/16 | 2016/17 | 2017/18 | 2018/19 |
| Estimated Cost to bring to satisfactory standard | 10,781 | 14,780 | 7,903 | 7,983 |
| Net carrying amount | 592,111 | 645,122 | 663,111 | 668,676 |
| Capital Funding Gap Ratio | 1.8% | 2.3% | 1.1% | 1.2% |
| Required maintenance | 6,417 | 35,680 | 4,483 | 6,595 |
| Actual maintenance | 10,173 | 21,557 | 5,436 | 5,855 |
| Maintenance Expenditure ratio | 159% | 60% | 121% | 89% |

QPRC's renewal expenditure has fluctuated as a result of the merger of Queanbeyan City Council and Palerang Council and the different methodologies used to record and monitor renewal costs. Generally, the adopted renewal ratio will be 100%. Renewal ratios will be monitored over the life of this Asset Management Plan and reported annually with the Financial Statements.

6.3 Funding Strategy

After reviewing service levels, as appropriate to ensure ongoing financial sustainability, projected expenditure in section 6.1 need to be accommodated in Council's LTFFP.

Potential funding sources include, but are not limited to:

- Operating revenue;
- Grants;
- Developer contributions; and
- Loans.

6.4 Valuation Forecast

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from asset constructed by land developers and others and donated to Council.

The figure below shows the projected Transport asset replacement cost, depreciated expense and depreciated replacement cost (WDV) for the next 10 years in current 2019 dollar values. The valuation forecasts include developer contributions for Googong, South Jerrabomberra and Bungendore Development. It is anticipated that the asset base will continue to increase in value and as a result, depreciation costs will also increase proportionally.

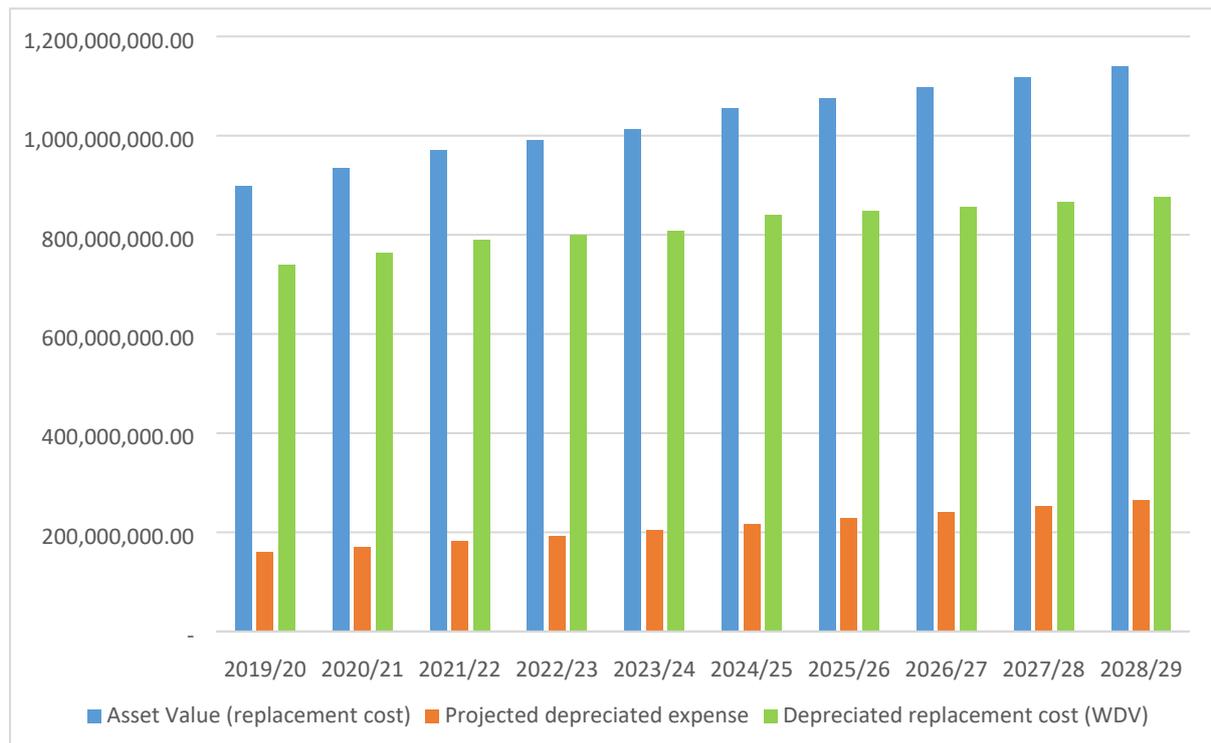


Figure 10 – Projected value, depreciated expense and depreciated replacement cost

6.5 Key Assumptions made in Financial Forecasts

Key assumptions made in the preparation of the financial information in this Transport AMP are:

- All predicted costs stated are in current 2019 dollar values;
- Maintenance forecasts are based on maintaining current level of expenditure
- Renewal forecasts have been calculated based on available asset condition data, remaining life and asset criticality. SMEC software has been used to predict sealed road's renewal program.
- Useful lives have been considered based on industry practice and IIMM guidelines.
- 12 May 2016 Valuation figures were adopted.
- Asset revaluations are next scheduled for completion in 2020/21.

6.6 Forecast Reliability and Confidence

QPRC is a newly formed council from the amalgamation of two former councils. The two former councils had two different asset management information systems. After amalgamation a new asset management information system was installed into which data is being refined and updated as part of a continuous improvement process.

The accuracy of the future financial forecasts may be improved in future revisions of this Transport AMP by the following actions:

- Improve asset condition data;
- Determine asset construction date;
- Refine intervention levels;
- Review and improve asset criticality;
- Implementing mobility system across all transport assets will allow better prediction modelling;
- Revaluation of asset class.

7 Plan Improvement and Monitoring

This asset management plan is to be continually reviewed and improvements made into how QPRC manages its asset base. The following actions have been identified in developing this asset management plan:

Table 10: Transport asset management improvement plan

| Identified gap | Priority (High: 1 – 2 years; Medium: 2 – 4 years; Low: above 4 years) |
|---|--|
| Refine community levels of service including gaining community agreement to standard and key performance measurement | High |
| Review technical standards and ensure the standards reflect service levels, quadruple bottom line decision making and meets asset management requirements | Medium |
| Review business processes and update the Transport Maintenance Plan based on agreed community, technical and maintenance service standards | High |
| Develop a Transport Risk Management Plan and identify critical assets and response times | High |
| Review maintenance activities and develop schedules for inspections/routine maintenance tasks as required and document in maintenance plans. | Medium |
| Review asset register data structure and identify asset attribute data gaps | High |
| Continue to synchronise Asset Registers with GIS mapping functionality. This includes refining and harmonising GIS layers | High |
| Formalise condition assessment/inspection framework for all asset classes. Ensure condition data is less than 4 years old. | Medium |
| Ensure Gifted Assets correctly recorded and valued in Asset Registers | High |

7.1 Monitoring and Review Procedures

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

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

This Transport AMP has a life of 4 years (Council Election Cycle) and is due for revision and updating within 12 months of each Council election.

7.2 Performance Measures

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

- The degree to which the required projected expenditures identified in this Transport AMP are incorporated into council's long term financial plan,

- The degree to which 1-5 years detailed work programs, budgets, business plans and organisational structures take into account the overall works program trends provided by this Transport AMP.
- Sufficient asset renewal funding (ratio with annual depreciation expense to be above 1.0) to target infrastructure backlog ratio of less than 2.0% is maintained.

8 References

IPWEA, 2015, International Infrastructure Management manual (IIMM), Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org.au/IIMM

IPWEA, 2015, Australian Infrastructure Financial Management Guidelines, Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org.au/AIFMG

IPWEA, 2014, 'IPWEA NAMS.PLUS3 Asset Management, eBook Guidelines, Guided Pathway to Asset Management Planning', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org

IPWEA Practice Notes.