The Rural City of MURRAY BRIDGE

Bridge to Opportunity

# Civil & Transport Infrastructure Asset Management Plan

2019-2024

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# 1. INTRODUCTION

The Rural City of Murray Bridge manages a considerable network of Infrastructure. The Civil and Transport Infrastructure Asset Management Plan specifically relates to the management of Council assets located within public road reserves, which are provided to enable safe and efficient movement through the region.

Responsibly funding for the renewal of Council assets over the long term is a key factor in sustainable and equitable asset management.

The focus of this plan is to model, forecast and document the physical and financial performance of Council's Civil and Transport assets and provide a robust management framework that feeds into Council's Long Term Financial Plan.

It is the intent of Council to manage its Civil and Transport Infrastructure network at an agreed level of service while optimising life cycle costs in order to normalise its infrastructure spend over consecutive budgets.

## 1.1 Background Data

### *1.1.1. Asset Details*

The Rural City of Murray Bridge is responsible for the management of a large array of Asset and Infrastructure across a Region that covers 1,832 square kilometers. Assets covered by the Civil and Transport Infrastructure Asset Management Plan and the physical properties of each are detailed in Table 1.

| Asset Category | Description | Quantity |
|---|---|---|
| Sealed Roads | Urban and rural roads with a bitumen surface typically spray seal, asphalt or recycled bitumen. | 473,623,3 m (473.6 km) |
| Unsealed Roads | Roads formed and surfaced with imported granular material. Unsealed roads are mostly rural roads with a limited quantity of urban roads. | 522,385.8 m (522.4 km) |
| Kerbs | Typically constructed from concrete on the edge of sealed roads to formalise the traffic corridor. | 265,225.7 m (265.2 km) |
| Footpaths | Constructed footpaths are typically concrete or brick paved. There is also an extensive network of scalp footpaths. Landscaped and untreated footpaths are excluded from this plan.<br>Scalp and earth footpaths are considered a capital asset however attract no renewal activities. All works are considered maintenance | Constructed: 68,588.8 m (68.6 km)<br>Scalp: 163,564.4 m (163.6 km) |
| Car Parks | On street parking, off street parking, parking infrastructure. | 33 Each |
| Bridges and Causeways | Six vehicular bridges in the Local Government Area.<br>Three of Councils Vehicle bridges are shared with the District Council of Mt Barker.<br>19 Pedestrian Bridges<br>21 Causeways/Culvert Crossings (Floodways) | 6 Bridges (3 at 50%)<br><br>19 Each<br>21 Each |
| Signs and Street Furniture | Inventory covered by this category includes all Road signs such as Regulatory, Hazard and Warning signs, park information, tourist and street name signs, traffic islands, guard rails, white guide posts | Signs: 4831 Each<br>Street Furniture: 860 Each |

**Table 1: Assets Covered by this Asset Management Plan**

The scope of this plan is to provide a management framework for public assets under the care and control of the Rural City of Murray Bridge. Private roads, state government roads and other roads not constructed by or for Council are excluded from this Plan.

### *1.1.2. Asset Capacity and Performance*

The Rural City of Murray Bridge aims to provide and manage its assets and infrastructure to meet design standards, guidelines and best practice principals, where applicable, and align to the expectations of the community. The community measurement of the level of service is, in general, provided in terms of Safety, Quality, Quantity and whether an asset is Fit for Purpose.

Service deficiencies, defects and hazards are identified through customer requests and regular asset inspections undertaken by Council employees.

Civil and Transport Infrastructure is measured using a Road Management Hierarchy that details, at a high level, what could be expected for each different type of road. Attributes

used to measure Capacity and Performance includes: user profile (freight, commuter, tourism), strategic linkages, surface type, pavement width and potential future demand.

Details of Council's road management hierarchy are detailed in Table 2 which forms the framework for the management of Council's Civil and Transport Infrastructure.

| Maintenance (LOS) Class | Road Hierarchy | Road Hierarchy Description | Km |
|---|---|---|---|
| B | Rural Link | Provides direct linkage between significant population centres or regions. Typically carry high percentages of heavy vehicles. Generally a sealed surface but may have unsealed sections. | 106.9 |
| C | Rural Collector | Predominately local users and provides linkage to State or Rural Link roads. Provides access to Rural Minor or Rural Access roads. Generally unsealed but may be sealed. | 191.2 |
| D | Rural Minor | Provides access to Rural Link & Rural Collector roads as well as access to adjoining properties. Little through traffic. Generally unsealed. | 358.0 |
| E | Rural Access | Provides access to properties only. Usually less than 5 properties and/or a no through road. Generally unsealed but may be formed gravel or natural surface. | 147.8 |
| A | Urban Business | CBD. Heavy traffic concentrations and some freight/delivery vehicles. Includes ancillary services to State roads. Typically sealed kerb to kerb, may be Hotmix. | 5.0 |
| A | Urban Link | State roads providing for through traffic. Not under Council care. | 11.2 |
| B | Urban Collector | Provides links to State roads and between suburbs or residential/business nodes. Heavy vehicle use. Sealed road. | 29.0 |
| C | Urban Minor | Primarily provides access to residential or commercial premises. Has some through traffic. Generally sealed but may be unsealed. | 113.3 |
| D | Urban Access | Local access only, no through traffic. Typically Cul-de-sac, Court etc. Generally sealed but may be unsealed. | 32.4 |

**Table 2: Council's Road Management Hierarchy**

### *1.1.3. Asset Condition*

The condition of Council's assets is continually monitored by staff through Asset Defect and Asset Hazard inspections. In addition detailed Network Condition Assessments are conducted on each asset group on a rolling 3-5 year cycle. Each individual asset is given an overall condition score from 0 to 6. Zero (0) being brand new assets, 1 near new, through to 6, which is an asset that has become unserviceable and reached the end of its useful life.

Councils Overall Condition Rating (OCI) can be described as follows:

- OC1-0 – Brand new
- OCI-1 – New or near new
- OC1-2 – Good condition
- OCI-3 – Fair condition
- OCI-4 – Poor condition
- OCI-5 – Very poor condition
- OCI-6 - Unserviceable

The condition of Councils asset categories covered by this Asset Management Plan are shown in the following pie charts.

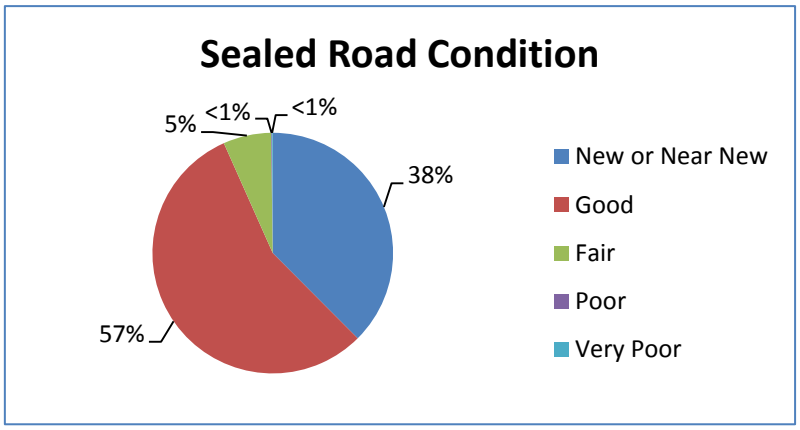


**Figure 1: Condition of Council's Sealed Road Network - 2019**

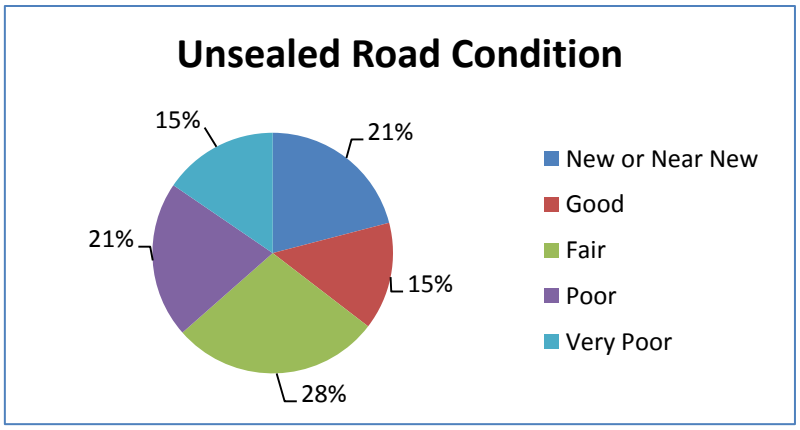


**Figure 2: Condition of Council's Unsealed Road Network – 2019**

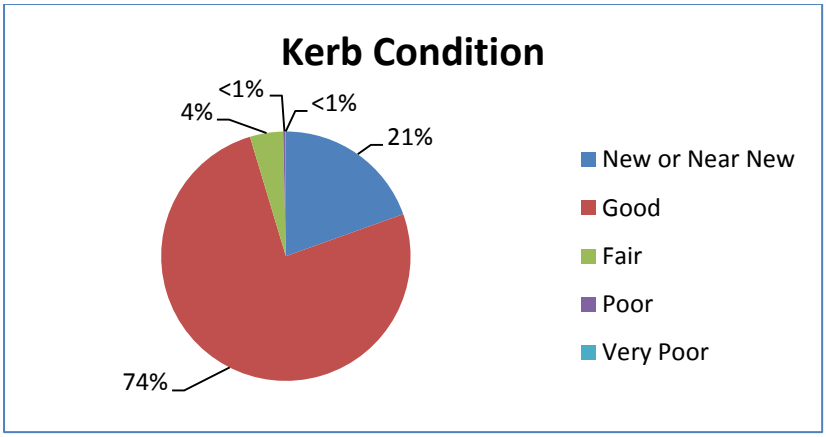


Figure 3: Condition of Council's Kerb Network – 2019

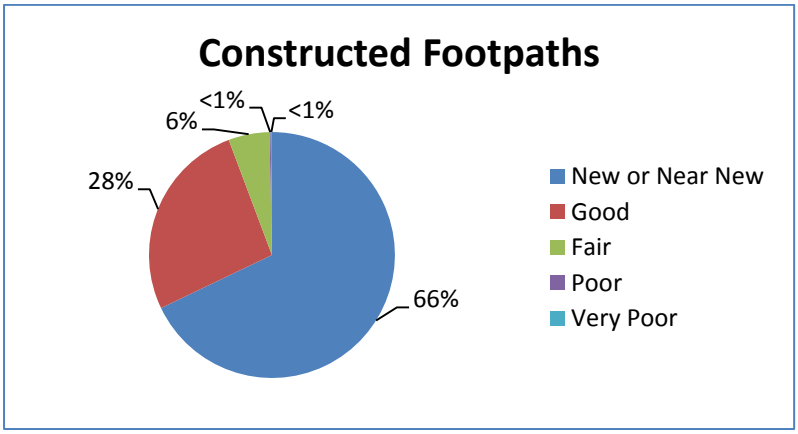


Figure 4: Condition of Council's Constructed Footpath Network – 2019

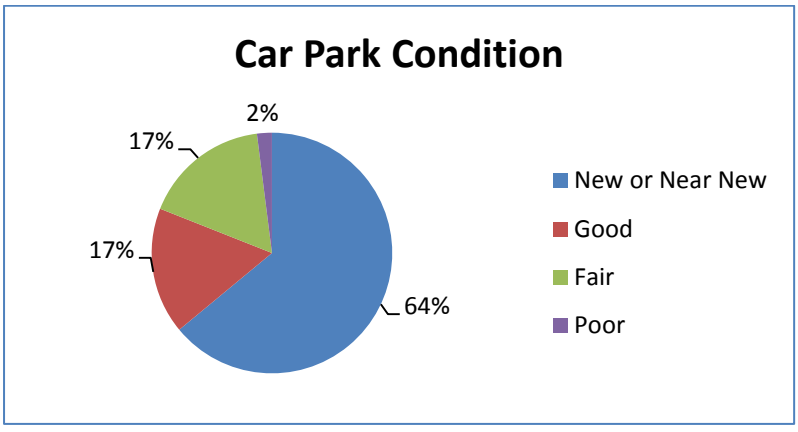


Figure 5: Condition of Council's Car Parks - 2019

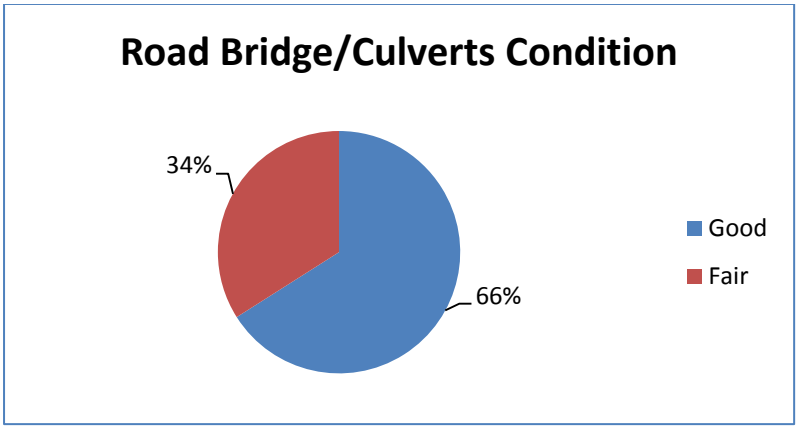


Figure 6: Condition of Council's Road Bridges - 2019

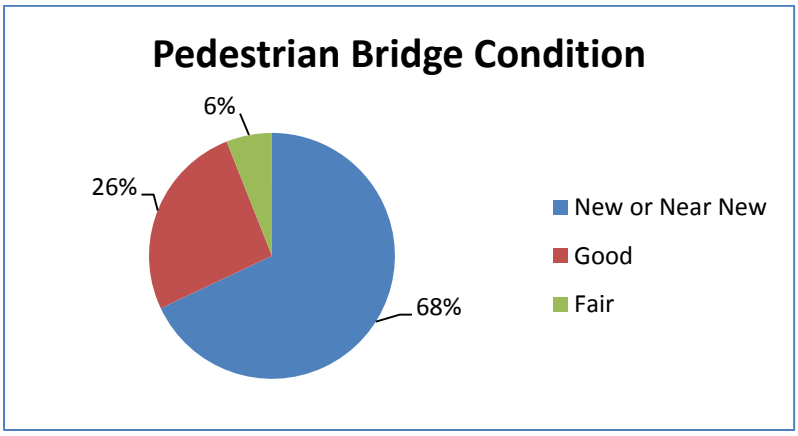


Figure 7: Condition of Council's Pedestrian Bridges - 2019

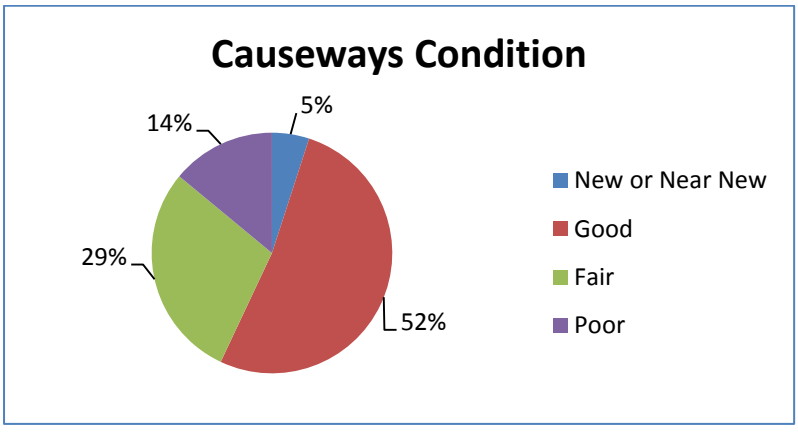


Figure 8: Condition of Council's Causeways - 2019

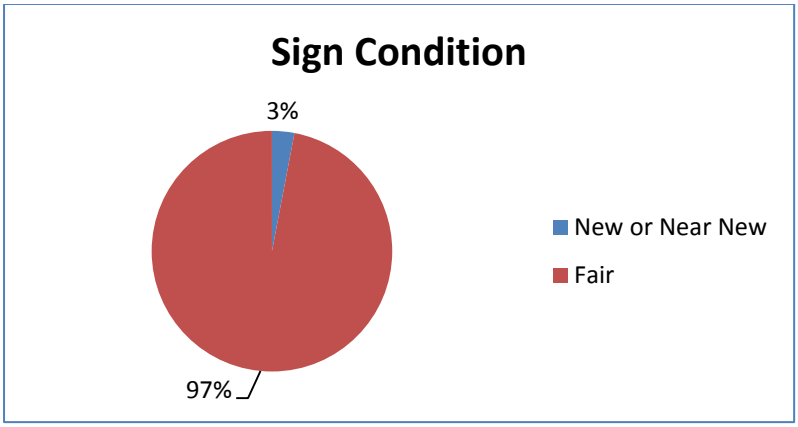


Figure 9: Condition of Council's Signs – 2019

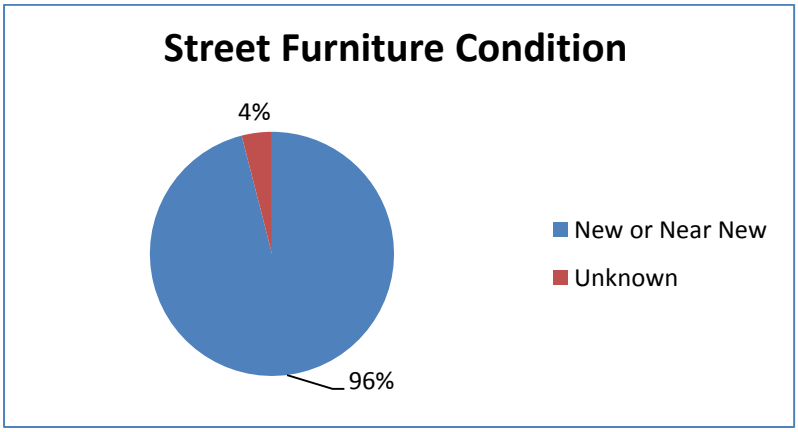


Figure 10: Condition of Council's Street Furniture – 2019

The condition of Council's Civil and Transport Infrastructure assets is considered very good with over 65% of assets in New, Near New or Good condition. However some assets currently require renewal with over 10% in Poor or Very Poor condition.

The 10% of Council's Civil and Transport Infrastructure assets with a Condition index in the Very Poor range will be considered as high priority for intervention in future capital works programs.

As the physical condition of Council's assets varies between Condition Audits, so does the level of confidence in the OCI values for each individual asset. Road surface and pavements, in particular, can deteriorate very inconsistently depending on level of use and environmental factors. The longer the elapsed time between Condition Audits the greater the variance in how condition may have changed. This is why regular defect and hazard inspections, carried out by Council Staff, are critical in the management of Civil and Transport Infrastructure.

Confidence levels in the Council's condition data are:

- **Roads** - very high (network condition assessment plus ongoing 2-monthly hazard/defect inspections)

- **Kerb** – very high (network condition assessment plus ongoing 2-monthly hazard/defect inspections)
- **Footpath** –high (network condition assessment, plus continuous customer and staff feedback due to the nature and frequency of use)
- **Car parks** – medium (network assessments were completed in 2008 and 2013)
- **Bridges** – medium (network assessments were completed in 2008 and 2013)
- **Street Furniture** - low as data is only available for new assets.

## 1.2. Routine Operations and Maintenance Plan

Routine operations and maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular day-to-day work necessary to keep assets operating as intended.

Operations and Maintenance Expenditure is forecast to trend in line with the value of the asset stock and assumes a CPI increase of 2% per annum.

A detailed Operational Management Plan has been prepared by Council administration and is appended to this plan. The Operational Management Plan will assist Council in managing the maintenance of Civil and Transport Infrastructure at the desired level of service and to meet asset renewal targets.

## 1.3. Renewal & Replacement Plan

Renewal expenditure is defined as Capital works that does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Sound asset management dictates that assets are renewed or replaced before they deteriorate to the point where associated assets may be affected or become unserviceable.

All assets are assigned an estimated useful life when they are acquired. This is the length of time Council can justifiably expect an asset to fulfil its intended purpose and provides the level of service that meets agreed levels. Useful lives assigned to assets should be monitored and adjusted as required to ensure the modelling of theoretical asset performance matches as close to practical the physical asset performance. It is Council's responsibility to monitor useful life and program asset renewal to ensure life cycle management is delivered efficiently.

Unit rates are used to calculate an asset replacement value. Like useful life, unit rates must also be reviewed and adjusted where appropriate to ensure Council is not over or under valuing its asset inventory. Adjustments to unit rates must be justified by data Council collects during the undertaking of normal business. This may include actual unit rates (at cost), benchmarking against similar organisations or industry standards.

A combination of useful life and replacement value is used to calculate the depreciation (consumption) rate of asset categories. Depreciation can be modelled in many ways however the simplest model provides for straight line depreciation where the rate in which an asset degrades is equally spaced over its intend life.

In general, most assets do not perform in a straight line fashion. The Rural City of Murray Bridge uses **Assetic MyPredictor** to apply far more mature degradation models to achieve more realistic forecasts for asset performance.

Future Renewal and Replacement Expenditure is forecast to trend parallel to the rate in which the community are consuming the assets and infrastructure provided by Council. For the purpose of this plan all figures are based on 2019 data and no allowance has been made to apply CPI/inflation.

## 1.4. Creation, Acquisition and Upgrade Plan

The construction of new sealed roads, kerbs and footpaths occurs as a response to the development of new land, changes to land use and community demand.

For example, the expansion and upgrading of existing sealed roads occurs as a response to changes in traffic levels and vehicle loads. Major development can play a significant role in the need for the creation or upgrade of infrastructure and it is vitally important that adequate consideration is given to the asset management implications these works can generate.

Upgrading and sealing unsealed roads and car parks have positive benefits for the community through improved durability, ride quality and reduction in annual maintenance expenses. Council's secondary freight routes have been proposed for potential unsealed road upgrades however these remain unfunded and will require external funding to achieve completion.

Secondary freight routes are those roads that are deemed to have intra-regional significance and support the movements of freight from within the region to external markets. Secondary freight routes specifically support economic development by improving freight efficiency for agricultural produces, tourism and communter use for rural communites.

A Council Policy and Management Guideline for the upgrade of unsealed roads will need to be developed and will provide the framework for Council administration to assess and prioritise the upgrade of unsealed roads in a clear and transparent manner.

In accordance with Council's adopted Footpath Expansion Strategy (*item 153.1, Monday 11 September 2017*) Council continues to expand the sealed footpath network with the aim of having a constructed all weather (concrete/asphalt/paved) footpath on one side of every urban road. The creation of new pedestrian linkages provides a positive social benefit to the community through health and fitness as well as improved pedestrian safety.

The creation, acquisition or upgrade of Council infrastructure is considered an Expansion or Enhancement project and needs to be funded in isolation from all other renewal works. The funding of these projects should be achieved through prudent financial management and the generation of operational surplus, the use of third party funding which may come from an external funding body or private developer, or by leveraging Council's financial position and taking out borrowings.

Expansion/Enhancement projects should not be funded at the expense of renewal works unless a robust and detailed justification is provided and a financial plan developed to rectify the renewal backlog caused as a result of under funding.

## 1.5 Disposal Plan and Impairment

The modelling of Council's Civil and Transport Infrastructure as it moves through its life cycle assumes that an asset will be disposed of at the point in time when it reaches the end of its useful life, or at a particular intervention point based on agreed levels of service.

At the point when an asset is disposed of, it is critical for Council to understand the carrying value (written down value) of the asset and calculate the potential loss (or gain) on disposal.

Council must be careful to understand and qualify any variances between the physical condition of an asset and the theoretical condition which is represented by the written down value at a point in time.

As an example;

> ***A segment of road which was designed and constructed to have a useful life of 20 years, and required $100,000 of capital investments to construct. 15 Years into the segment's life Council inspections deem the road is in very poor condition, and failing to a point that requires intervention. The segment has reached the end of its physical life.***
>
> ***Council's accounts would have a written down value of $25,000 as the segment is only 75% through its useful life however in practice the road has fully depreciated and has physical value of $0.00.***
>
> ***The result is that Council has to write off the asset and report a loss on sale of $25,000 as an operational expense impacting on Council's annual profit and loss.***

It is Council's responsibility to ensure its assets are represented by Fair Value and ensure it does not carry assets at more than their recoverable amount. Where this occurs, the asset is described as impaired and Council is required to recognise an impairment loss.

At the end of each reporting period Council should be prudent in assessing the condition of its Civil and Transport Infrastructure and identify any indicators of impairment and make adjustment accordingly within the provision of the Australian Accounting Standards.

## 2. FINANCIAL SUMMARY

Council's financial settings required to deliver positive and sustainable outcomes for Civil and Transport Infrastructure is based on the analysis of data presented in previous sections of this Supplementary Asset Management Plan and testing the sensitivity of various attributes in order to model and forecast the most efficient management strategy.

As Council's data collection methods improve and historical modelling is analysed against true asset performance, Council's financial projections will also improve and the level of Asset Management Maturity will develop.

Council's Civil and Transport Infrastructure Asset Management Plan is fundamentally based on the estimated cost of capital renewal (construction cost) and the length of time an asset is expected to remain serviceable (useful life).

Unit rates for all Civil and Transport Infrastructure assets are determined through actual cost, industry standards and benchmarking or first principal estimations and applied to measured quantities to determine the asset valuation or replacement cost.

An asset's useful life is determined through known intervention periods, design life calculations and industry standards and together with replacement cost is used to determine the annual depreciation of an asset.

The following table provides details of the unit rates and useful lives applied to Council's Civil and Transport Infrastructure assets used to model and forecast the expected annual renewal investment Council is required to make and ensure a consistent level of service is provided to the community.

| Asset Type | Useful Life (years) |
|---|---|
| **Roads** | |
| Sealed Road – AC Surface | |
| Rural Light: Minor and Access | |
| Sub Base | 160 |
| Base | 100 |
| Surface | 30 |
| Rural Heavy: Link and Collector | |
| Sub Base | 160 |
| Base | 80 |
| Surface | 30 |
| Urban Light: Minor and Access | |
| Sub Base | 160 |
| Base | 100 |
| Surface | 30 |
| Urban Heavy: Business, Link and Collector | |
| Sub Base | 160 |
| Base | 80 |
| Surface | 30 |
| Sealed Road – Spray Seal Surface | |
| Rural Light: Minor and Access | |
| Sub Base | 160 |
| Base | 100 |
| Surface | 20 |
| Rural Heavy: Link and Collector | |
| Sub Base | 160 |
| Base | 100 |
| Surface | 15 |
| Urban Light: Minor and Access | |
| Sub Base | 160 |
| Base | 100 |
| Surface | 20 |
| Urban Heavy: Business, Link and Collector | |
| Sub Base | 160 |
| Base | 100 |
| Surface | 15 |
| Sealed Road – Special Pavers (Sixth St) | |
| Sub Base | 160 |
| Base | 80 |
| Surface | 50 |

| Asset Type | Useful Life (years) |
|---|---|
| Unsealed Road (Sheeted) | |
| Link and Collector | |
| Sub Base | 160 |
| Base | 20 |
| Minor and Access | |
| Sub Base | 160 |
| Base | 25 |
| **Kerbs** | |
| Kerb and Gutter | 80 |
| Spoon Drain | 60 |
| **Footpaths** | |
| Brick | 75 |
| Concrete | 55 |
| Asphalt | 30 |
| Spray Seal | 20 |
| Scalp | 200 |
| **Car Parks** | |
| Sub Base | 160 |
| Base Sealed | 80 |
| Base Unsealed | 10 |
| Seal – Spray Seal | 20 |
| Seal - Asphalt | 40 |
| Concrete | 50 |
| **Bridges and Causeways** | |
| Road Bridge | Component useful lives vary |
| Pedestrian Bridge – Timber, Recycled Plastic, Modwood | 50 |
| Pedestrian Bridge – Steel, Concrete | 100 |
| Causeway | 100 |
| **Signs and Street Furniture** | |
| Sign | 30 |
| White Posts, Guard Rails | 25 |

**Table 3: Asset Useful Lives**

## 2.1. Financial Statements and Projections

### *2.1.1. Asset Valuations*

| Asset Category | Current Replacement Cost | Depreciable Amount | Written Down Value | Annual Depreciation Expense |
|---|---|---|---|---|
| Sealed Roads | 121,079,508.02 | 121,079,508.02 | 78,305,487.00 | 2,148,103.72 |
| Unsealed Roads | 38,706,471.84 | 38,706,471.84 | 28,194,139.84 | 932,791.93 |
| Kerbs | 37,230,344.71 | 37,230,344.71 | 30,463,826.22 | 468,447.09 |
| Footpaths | 14,699,198.60 | 14,699,198.60 | 12,510,537.01 | 226,865.82 |
| Car Parks | 1,745,868.33 | 1,745,868.33 | 1,098,095.96 | 34,357.37 |
| Bridges | 9,873,188.72 | 9,873,188.72 | 8,020,686.65 | 119,429.79 |
| Signs | 970,773.03 | 970,773.03 | 538,163.44 | 32,359.10 |
| Street Furniture | 433,594.06 | 433,594.06 | 406,981.40 | 12,433.06 |
| **TOTAL** | **224,738,947.32** | **224,738,947.32** | **159,537,917.52** | **3,974,787.88** |

**Table 4: Asset Valuations at 30 June 2019**

The Depreciation expense associated with Council's Civil and Transport Infrastructure is calculated through applying a "straight line" model and using the condition of each asset to determine its remaining useful life. Pedestrian bridges have been excluded from this model as there is insufficient condition data; as such the age of the bridge has been used to determine financial information.

## 2.2 Funding Models

As previously stated in this plan, the Rural City of Murray Bridge uses **Assetic MyPredictor** as a tool to assist in the modelling of funding requirements and future works programs.

The tool, through the implementation of asset degradation curves, current asset condition and asset hierarchy, produces a list of candidates (proposed projects) that are likely to be required in future financial periods.

The level of accuracy and confidence Council places in the list of candidates produced reduces the further into the future the prediction are and therefore Council's approach is not to adopt and proceed with projects without first determining the need and scope of works on an annual basis.

In order to develop a funding model Council first needs to understand the Level of Service the community desires as well as what is practical and financially responsible. A balance between the aspirational and realistic goals of the community, as well as the time the community are prepared to wait is a matter that requires careful management and consultation.

Council's road network, which consists of 474km of sealed and 522km of unsealed road, have a current measured Overall Condition Index (OCI) of 1.79 and 2.84 respectively.

This represents a level of service being provided by Council's sealed road network as being Good to Very Good and an unsealed road level of service being considered Average to Good. In order for Council to provide a level of service the community expect, clearly the condition of Council's unsealed road network needs to improve.

A realistic position for Council to aim for is to provide a level of service represented by an aspirational OCI of 1.5 for the sealed road networks and 1.75 for the unsealed road network.

### *2.2.1 Sealed Road Network*

The gap between Council's Current Level of Service and its aspirational Level of Service (LOS) is relatively small (1.79 to 1.5) and therefore only minor adjustments are required to achieve a trend towards a desired OCI of 1.5.

In order for Council to model its sealed road performance over time and to determine a funding model to achieve the desired outcome three management scenarios were tested.

#### *Unrestrained Budget*

An unrestrained scenario is designed to deliver a works program and funding model based on only intervening on assets when the degradation model predicts they will reach the end of their useful life.

By applying this form of scenario assets will only be included in a works program when they are fully depreciated and therefore any loss on sale of assets will be minimised. In its purest form, this is the most efficient management strategy however it does not account for variances in condition. In addition is does not provide a consistent annual works program and therefore prevents Council from providing its staff continuous meaningful work.

By implementing an unrestrained budget over a 25 year period, the model yields the desired outcome of an overall condition index of 1.4 with an average capital expenditure of $2.1M which is consistent with Council's annual estimated depreciation expense of $2.15M for the sealed road network.

It is clear from the graph below that fluctuations in annual spend resulting from an unrestrained model, represented by the blue trend line, would provide challenges for Council's operations with years 11 to 14 requiring significant additional resources and conversely years 15 to 19 having inadequate works to occupy staff.

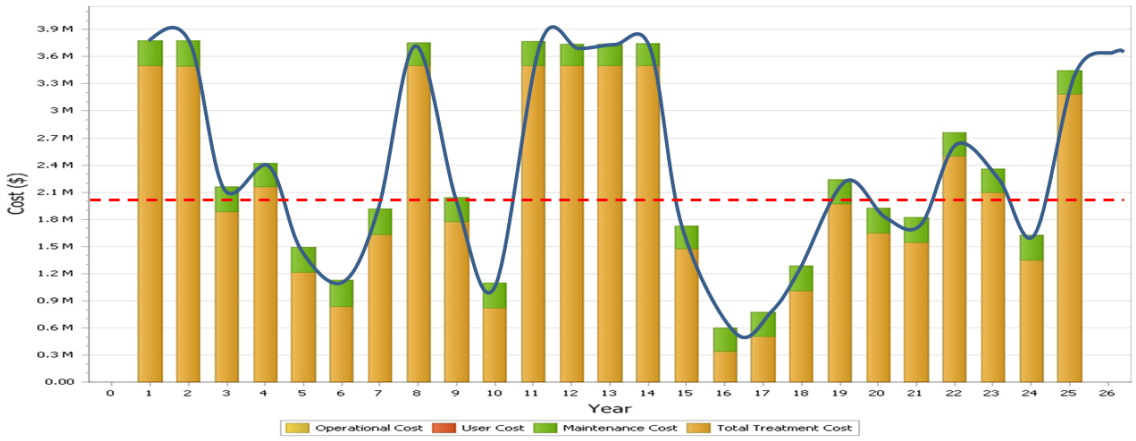


**Figure 11: Sealed Roads Unrestrained Budget Model**

### *$2.6M Capital Spend Limit*

Similar to an unrestrained budget, a scenario with an upper limit of $2.6M is intended to normalise the annual spend and provide a more consistent work flow for Council Staff.

While a capital expenditure budget of $2.6M is far higher than Council's annual depreciation expense ($2.15M) the scenario provides very little variance from the unrestrained model over a 25 year period. After 25 years this scenario yields an overall condition index of 1.42 with an annual average expenditure of $2.04M.

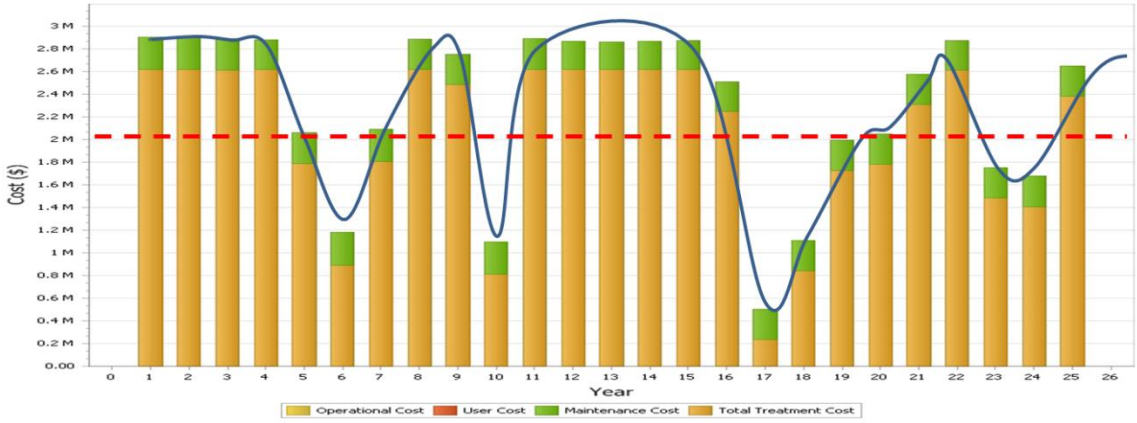


**Figure 12: Sealed Roads $2.6M Budget Model**

### *$1.9M Capital Spend*

The intent of implementing a model with a capital expenditure limit less than Council's annual depreciation expense is to force the model to allocate 100% of funds provided each year and generate a consistent annual budget.

Interestingly by implementing this scenario over a 25 year period the overall condition index generated is extremely close to those generated by the unrestrained budget scenario and $2.6M capped scenario.

This scenario yields an overall condition index of 1.43 with an average capital expenditure of $1.9M

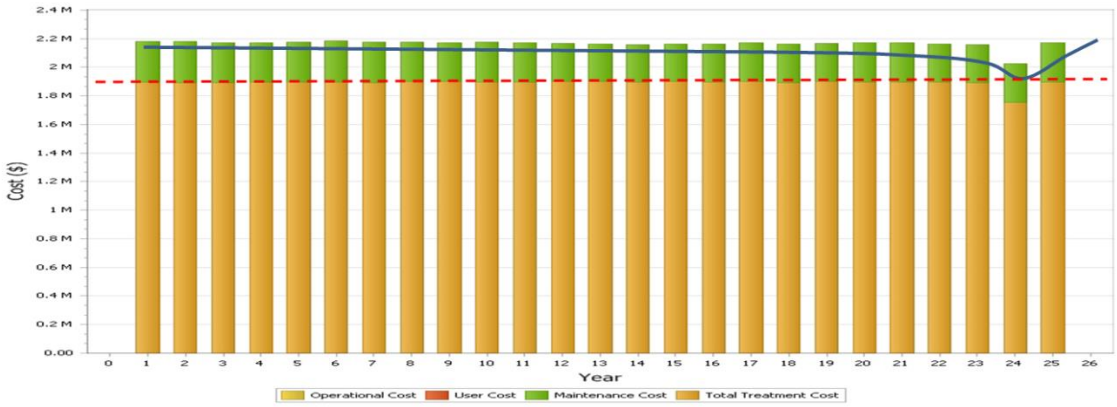


**Figure 13: Sealed Roads $1.9M Budget Model**

### *Proposed Funding Model*

Based on the scenario testing detailed in section 2.2.1 of this plan, it is clear that the adoption of a normalised model:

- Does not affect long term Level of Service
- Provides Generational Equity
- Enables a consistent approach to Work Force Management
- Allows for a consistent long term capital budget allocation
- Provides improvement in the network condition in a sustainable manner.

Based on Council's annual sealed road depreciation expense and the predicted works program generated by Council's asset management software an annual capital expenditure budget of **$2.1M** is required. This provides an average asset sustainability ration (ASR) of 98% which is consistent with Council's goal of achieving an ASR of 100%.

### *2.2.2 Un-Sealed Road Network*

Identical scenario testing was undertaken on Council's unsealed road network in order to close the gap between the current OCI (2.84) and the desired outcome of (1.75).

The management of unsealed networks is far more flexible than sealed networks as condition can change rapidly due to weather and rectification works can occur at a significantly lower cost than those required to renew a sealed road.

As such there is far less confidence in the modelling of unsealed road networks and funding models generated must be checked regularly to ensure the network condition is trending as intended.

### *Unrestrained Model*

By applying an unrestrained model a similar outcome to the sealed road network occurred. Over a period of 25 years an average annual spend of $1.25M and OCI of 1.56 was forecast however there are several years with an estimated spend greater than $3M and less than $300K.

This again highlights significant fluctuations that would pose operational challenges for Council.

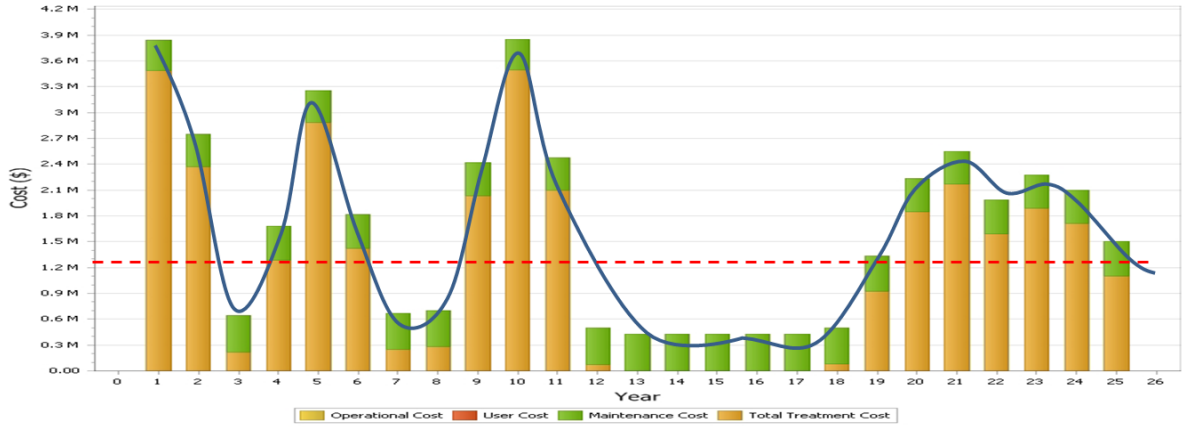


**Figure 14: Unsealed Roads Unrestrained Budget Model**

### *Normalised Model*

A normalised model based on a Capital Expenditure ceiling of $1.2M was tested to determine how the OCI would trend over a 25 year period. A figure of $1.2M was adopted to account for Council's estimated annual depreciation of $932K, plus an allowance for expansion works where an unsealed road would be sealed.

An average annual expenditure of $1.07M and OCI of 1.78 is generated through the implementation of this model.

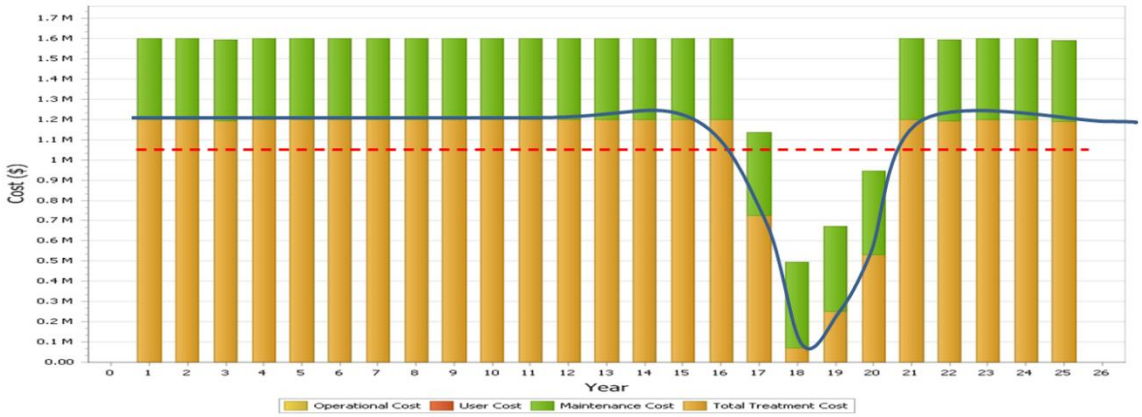


**Figure 15: Unsealed Roads Normalised Budget Model**

This scenario provides the desired consistent level of work however a reduction in the need of capital funding from years 17 to 20 is evident in the above graph. This reduction is a function of unsealed pavements having an estimated useful life of 20 years and it is anticipated that this "dip" in the model will move along as years progress and remain 17 to 20 years into the future; however this needs to be monitored on an annual basis.

### *Proposed funding Model*

Like the sealed road funding model, a normalised approach based on Council's annual depreciation expense is recommended.

This model generates an annual capital expenditure budget of **$932K** and an average asset sustainability ration (ASR) of 100% which is consistent with Council's goal of achieving an ASR of 100%.

Provided Council continues to upgrade and seal unsealed roads using external funding such as Roads to Recovery and Special Local Roads a desired overall condition index of 1.75 will be achieved.

## *2.2.3 Kerbs & Footpaths*

Council's kerb and footpath inventory is in a satisfactory condition and since 2016 a significant focus has been placed on expansion of infrastructure rather than renewal.

Throughout the Rural City of Murray Bridge there are many roads that do not have concrete kerbing or an all weather constructed footpath. As such Council identified the need to make a significant investment towards the expansion of both the kerb and footpath and in September 2017 adopted its footpath expansion strategy which provides the framework for the prioritisation and funding of the footpath network. Currently Council is funding kerbing and footpath expansion in the order of $250,000 and $500,000 per annum respectively.

Council's kerbing has a current replacement value of $37.2M and an Annual Depreciation Expense of $470,000. These figures are based on the premise the kerbing has a useful life of 80 years which is an evidence based, industry benchmarked assumption.

It's worth noting that as the quality control regarding the production of concrete, including testing and post cure strength guarantees, as well as the introduction of machine laid/extruded kerbing, it is anticipated that the useful life of kerbing and other concrete products will increase.

In lieu of asset renewal and the genuine need to expand the kerbing network for drainage performance, localised flooding control and township aesthetics, it is recommended to temporarily adopt an asset sustainability ratio of 50% for the life of the plan (30 June 2023) and continue to expand the network until completed.

This approach will have a minimal impact on the overall lifecycle management of kerbing assets and will improve the overall condition performance of the kerbing network as there will be a higher percentage of brand new kerbs in the network. In addition, the annual

depreciation expense will increase by only 2% (excluding inflation) through the expansion of the kerbing network. This is considered immaterial.

| Asset Category | Current Replacement Cost | Annual Depreciation Expense | Renewal Expenditure | Expansion Expenditure |
|---|---|---|---|---|
| Kerbs (2020) | 37,230,344.71 | 468,447.09 | 234,425.00 | 234,425.00 |
| Kerbs (2023) | 38,168,044.00 | 477,100.55 | 477,100.55 | 0 |

**Table 5: Proposed Kerb Funding 2020 vs 2023**

Similarly, Council's constructed, all weather footpath network is undergoing a significant period of expansion where Council has funded $500,000 per annum over and above renewal expenditure which aligns to the adopted Footpath Expansion Strategy.

Council's constructed footpath network has a replacement value of $14.7M and an annual depreciation expense of $229,000. These figures are based on the premise the footpath has a useful life of 55 years which is an evidence based, industry benchmarked assumption.

Like kerbing, as quality control regarding the production of concrete, and construction techniques including the use of steel reinforcement, it is anticipated that the useful life of footpaths will increase.

Council's current level of investment for expansion is more than twice the annual depreciation expense and therefore the percentage of new footpath in the network will continually improve the overall condition performance. During the period where Council's focus is on expansion the investment required to renew Council footpath assets can temporarily reduce and an asset sustainability ration of 50% be adopted for the life of this plan.

| Asset Category | Current Replacement Cost | Annual Depreciation Expense | Renewal Expenditure | Expansion Expenditure |
|---|---|---|---|---|
| Footpaths (2020) | 14,699,198.60 | 226,865.82 | 112,500 | 500,000** |
| Footpaths (2023) | 16,699,198.60 | 256,910.75 | 113,500 | 500,000 |

*** $450,000 allocated to footpath expansion and $50,000 allocated to roundhouse footpath upgrade*

**Table 6: Proposed Footpath Funding 2020 vs 2023**

## 2.3. Projected 10-Year Funding Requirements

The 10-Year funding requirements for the renewal of Council's Civil and Transport Infrastructure Network are set out in Table 5.

The funding requirements are calculated using theoretical base models. Factors outside of Council's control including but not limited to extreme weather events, increased heavy vehicle traffic and population changes greater than or less than projections may change the required funding needs from time to time. These factors have been ignored for the purpose of developing a projected 10 year works program, however Council will undertake analysis and check proposed models prior to confirming each annual works program.

Council's level of funding directly relates to the level of service the community expects and the level of sustainability Council wishes to manage its assets at.

Asset Sustainability Ratio is a measure by which Council compares the level of funding made available to renew its asset inventory versus the rate in which assets are being consumed by the community.

Each asset category needs to be managed differently as there can be significant variations in how performance varies and how sensitive an asset category may be to underfunding.

Inert, long life assets, such as footpaths and kerbs depreciate very slowly. Underfunding these assets during periods of their useful life, provided the overall average is consistent, will not have an adverse effect on asset performance and level of service.

Conversely, assets that are fluid, where condition can change rapidly, such as unsealed roads, require a far more consistent and structured level of funding and neglecting these assets for short periods of time can result in adverse and irreversible deterioration and early impairment.

As such the level of funding to sustain Council's Civil and Transport Infrastructure over a 5 year period will be based on setting both a desired level of service, measured by Overall Condition Index (OCI) and a measure of Asset Sustainability Ratio. The remaining 5 years of the 10 year model (years 6 to 10) will be simply based on current depreciation figures however these will be reviewed annually as expansion projects increase Council's total asset replacement value.

| | | | | 2019/20 Budget | | 2020/21 Forecast | | 2021/22 Forecast | | 2022/23 Forecast | | 20223/24 Forecast | | 20224/25 Forecast | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asset Category** | **Annual Depreciation** | **Current OCI** | **Goal OCI** | **ASR** | **Budget** | **ASR** | **Budget** | **ASR** | **Budget** | **ASR** | **Budget** | **ASR** | **Budget** | **ASR** | **Budget** |
| Sealed Road | $ 2,148,103.72 | 1.79 | 1.5 | 88% | $ 1,894,000.00 | 99% | $ 2,117,804.26 | 96% | $ 2,061,865.02 | 97% | $ 2,079,762.76 | 97% | $ 2,078,570.74 | 98% | $ 2,102,915.63 |
| Unsealed Rd | $ 932,791.93 | 2.84 | 1.75 | 100% | $ 935,000.00 | 100% | $ 932,791.93 | 100% | $ 932,791.93 | 100% | $ 932,791.93 | 100% | $ 932,791.93 | 100% | $ 932,791.93 |
| Kerb | $ 468,447.09 | 1.7 | 1.5 | 50% | $ 234,000.00 | 50% | $ 234,223.55 | 50% | $ 234,223.55 | 50% | $ 234,223.55 | 90% | $ 421,602.38 | 100% | $ 468,447.09 |
| Footpath | $ 226,865.82 | TBC | 1.5 | 96% | $ 217,500.00 | 50% | $ 113,432.91 | 50% | $ 113,432.91 | 50% | $ 113,432.91 | 50% | $ 113,432.91 | 50% | $ 113,432.91 |
| Car Parks | $ 34,357.37 | | 1.75 | 0% | | 70% | $ 24,050.16 | 80% | $ 27,485.90 | 90% | $ 30,921.63 | 100% | $ 34,357.37 | 100% | $ 34,357.37 |
| Bridges | $ 119,429.79 | | 1.5 | 50% | $ 60,000.00 | 100% | $ 119,429.79 | 100% | $ 119,429.79 | 100% | $ 119,429.79 | 100% | $ 119,429.79 | 100% | $ 119,429.79 |
| Signs | $ 32,359.10 | | 2 | 155% | $ 50,000.00 | 100% | $ 32,359.10 | 110% | $ 35,595.01 | 100% | $ 32,359.10 | 120% | $ 38,830.92 | 100% | $ 32,359.10 |
| | **3,962,354.82** | | | | **3,390,500.00** | | **3,574,091.70** | | **3,524,824.10** | | **3,542,921.67** | | **3,739,016.04** | | **3,803,733.82** |

| | 5 year Average | |
|---|---|---|
| **Asset Category** | **Average** | **ASR (5yr Ave)** |
| Sealed Road | $ 2,055,819.74 | 96% |
| Unsealed Rd | $ 933,159.94 | 100% |
| Kerb | $ 304,453.35 | 65% |
| Footpath | $ 130,777.43 | 58% |
| Car Parks | $ 30,234.49 | 88% |
| Bridges | $ 109,524.83 | 92% |
| Signs | $ 36,917.21 | 114% |
| | **3,600,886.97** | **91%** |

***NOTE:** **An Asset Sustainabilty Ratio (ASR) of 91% is related to renewal projects only.**

**As Council continues to expand its asset inventory, there will always be a component of renewal associated with the delivery of expansion/enhancement project. It is anticipated that the renewal compaoinnet of expansion work will more that account for the 9% shortfall 5 year average ASR reported.**

**Figure 16: Projected Expenditure for the Long Term Financial Plan**

## 3. REFERENCES

*Local Government Act 1999, South Australia*

*International Infrastructure Maintenance Manual*