Shire of Kondinin

Transport Network Asset Management Plan

Part 2 - Detailed

Appendices

Author: Ben Symmons – AIM Consultants
Date: June 2019
Contact: ben.symmons@assetim.com.au / 0402 006 300

Appendix A – Legislation, Acts, Regulations & Standards

This section provides details on all legislation, standards, policies and guidelines which should be considered as part of the management practices of the Shire's transport assets.

Legislation, Acts & Regulations

- Local Government Act 1995
- Civil Liability Amendment Act 2003
- Environmental Protection Act 1986
- Environment Protection Act (unauthorised discharges) Regulations 2004
- Aboriginal Heritage Act 1972
- Aboriginal Heritage Regulations 1974
- Native Title Act 1999
- Land Administration Act 1997
- Dangerous Goods Safety Act 2004
- Poisons Act 1964
- Health Act 1911
- Wildlife Conservation Act 1950
- Health (Pesticides) Regulations 1956
- Road Traffic Act 1974
- Main Roads Act 1930
- Dividing Fences Act
- Occupational Health and Safety Act 1984
- OSH Regulations 1996
- Disability Discrimination Act 1992
- Disability Services Act 1993
- Disability Services Regulations 2004

Standards

- Disability Standards for Accessible Public Transport 2002
- AustRoads Guidelines
- WA Department of Planning - Liveable Neighbourhoods Edition 2
- Institute of Public Works Engineering Australia - Local Government Guidelines for Subdivisional Development - Edition 2
- Main Roads WA – Codes of practice, standard drawings etc.
- AASB 5 Non-Current Assets Held for Sale and Discontinued Operations
- AASB 13 Fair Value Measurement
- AASB 116 Property, Plant and Equipment
- AASB 118 Revenue
- AASB 119 Employee Benefits
- AASB 136 Impairment of Assets
- AASB 138 Intangible Assets
- AASB 140 Investment Property
- AASB 1051 Land Under Roads
- AS/NZS 4360: 1995 Risk Management
- AS/NZS 4360: 2004 – Risk Management
- ISO 31000 – Risk Management
- ISO 55000 – Asset Management

Council Policies

- 1.1.10 – Footpath Signs
- 1.15 – Risk Management
- 1.1.16 – Capitalisation of Assets
- 1.1.19 – Purchasing
- 1.1.20 – Asset Management
- 6..1.20 – Clearing Road Reserves – Tree Planting
- 6.1.21 – Outside Workers Safety
- 10.1.2 – Roadside Memorials
- 10.1.4 – Occupational Safety & Health

= 6.1.0 to 6.1.15 – Transport

= 10.1.7 – Record Keeping

Appendix B – AMP Stakeholders and Service Levels

Process for Developing Potential Service Levels

In developing the service levels for the Transport Network, the Shire has generally applied the framework as set out in the IIMM. The process broadly applies five steps, being:

- Identify service attributes important to customers
- Define the delivered customer service levels
- Develop performance measures
- Consult with customers
- Make service level based decisions

Strategic Community Plan (SCP) Drivers

The Shire's SCP contains long term goals for the delivery of services to its community. The SCP was reviewed in order to identify any Strategies that may directly relate to the transport service. The following table outlines those that may influence this AMP's service levels.

Theme	Strategy
Social	1.2.3 – Create aesthetically attractive and vibrant towns within the Shire.
	1.3.2 – Provide a variety of quality sport, recreation and leisure services and facilities for all life stages across the three communities.
Economic	2.2.1 – Support and maintain safe, connected, critical transport infrastructure including rail, road and public transport.
	2.4.2 – Add value to current tourism experiences and facilities as well as creating additional tourism experiences and facilities (fit for purpose tourist facilities).
Environment	3.1.1 – Functional mix of open space

Table 1: Strategic Community Plan Strategies Aligned to the Transport Network

Consideration of the strategies listed above shows that the following transport service areas are of high importance to the SCP. These may then be considered by the final service levels within this AMP:

- Aesthetics (1.2.3)
- Quality (1.3.2 – paths & lighting, 2.4.2 – roads and airstrips)
- Accessibility (3.1.1 – paths)
- Safety (2.2.1 - roads)

AMP Stakeholders

Analysis of the Shire's transport network revealed that there are a number of major stakeholder groups. These stakeholders are identified below and while there may be other minor stakeholders, they have not been specifically considered by this AMP.

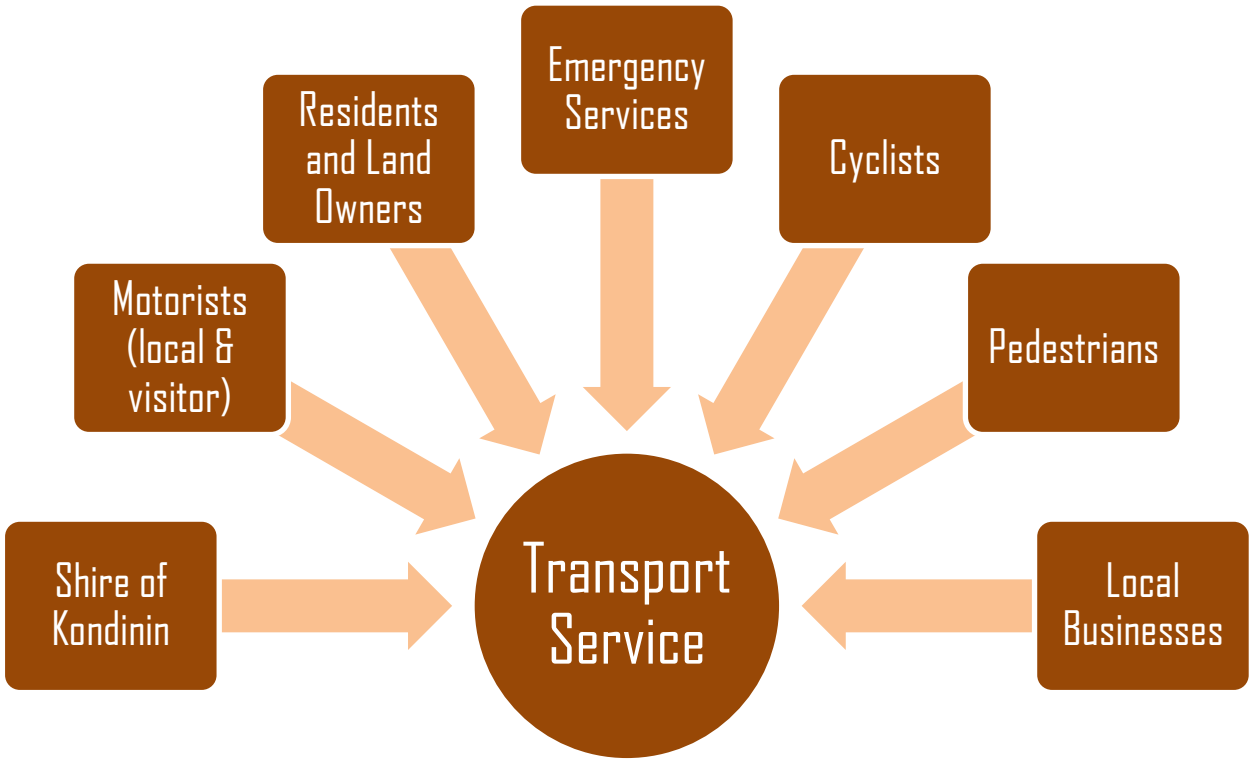

Figure 1: Transport Network Stakeholders

Service Attribute Workshop

During June 2019 Shire staff considered each stakeholder group to identify the service attributes that are most important to them. Those frequently occurring, when combined with the SCP drivers, form the basis of this AMP's service levels. The results from the staff workshop are shown below. In the future, once the Shire is able to consistently monitor service level performance, as well as link this to cost, it intends to undertake stakeholder consultation.

Stakeholder	Top Three Transport Service Attributes		
Shire	Condition	Quality	Safety
Motorists	Accessibility	Condition	Safety
Residents and Land Owners	Aesthetics	Financial Value	Reliability
Emergency Services	Information	Reliability	Safety

Cyclists	Accessibility	Information	Safety
Pedestrians	Accessibility	Condition	Safety
Local Businesses	Accessibility	Flexibility	Quality

Table 2: Important Stakeholder Transport Service Attributes

From the above analysis, the following service attributes have been selected for service levels.

- Safety (5 occurrences)
- Accessibility (4 occurrences)
- Condition (3 occurrences)

Service Level Targets and Performance

By considering the potential service attributes from the SCP and stakeholder analysis, the following KPIs are used to monitor service delivery performance.

KPI	Driver	Level of Service	Asset Group	Performance Measure	Target	Current	Data Confidence
Accessibility	SCP & Stakeholders	Network is accessible to users.	All	Percentage of survey respondents that are at least satisfied with accessibility to the transport network.	TBC	TBC	-
Aesthetics	SCP	Road reserves are aesthetically pleasing	All	Percentage of survey respondents that are at least satisfied with road reserves' aesthetic appeal.	TBC	TBC	-
Condition	Stakeholders	Transport network is maintained at, or above, an appropriate physical condition.	All	Percentage of transport assets above a condition rating of 4, on a 1 (excellent) to 5 (very poor) scale.	TBC	65%	Moderate
Quality	SCP	Transport service is of an appropriate quality.	All	Percentage of survey respondents that are at least satisfied with the transport network quality.	TBC	TBC	-
Safety	SCP & Stakeholders	Ensure effective management of risks to health in accordance with relevant legislation and community needs.	Roads & Paths	Percentage of prequalified blackspot sites investigated by the Shire.	TBC	TBC	-

Table 3: Service Level Targets and Performance

Appendix C – Service Demand

Background

Council's fundamental role is to provide services to its community and stakeholders. These services are often underpinned by assets. Predicting future demand for services (e.g. transport) is important to ensure that the appropriate assets are provided and maintained.

This section of the AMP looks broadly at both historical and future levels of transport demand. Readers should be aware though that as with any demand forecasting, prediction is rarely ever 100% correct.

Historic Transport Demand

To ascertain broad historical influences on transport asset demand, a range of different demand sources have been considered, as follows.

Motor Vehicle Ownership

Analysis of the ABS census data from 2001 and 2016 shows that between these years, there has been a slight fall in vehicle ownership from 368 to 312 households (Figure 2). This represents a decrease of -1% per annum. As such, this may indicate that overall vehicle use on the Shire's road network is falling.

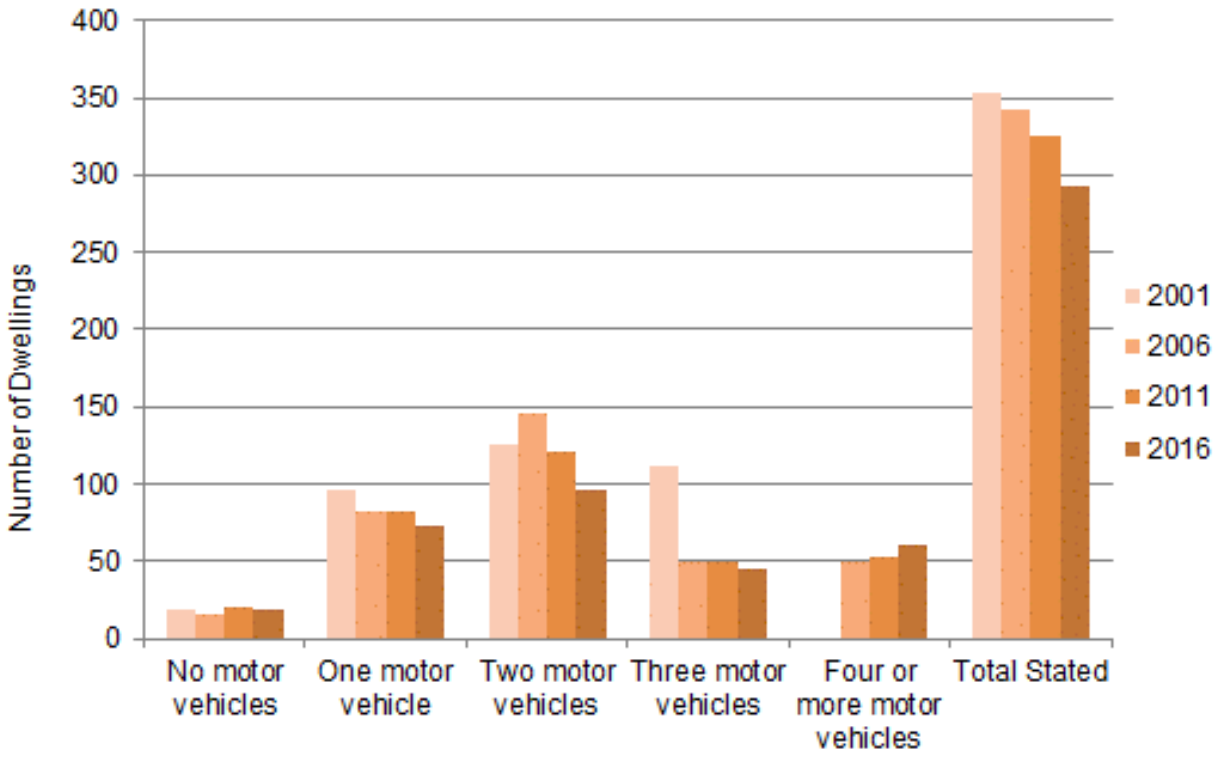

Figure 2: Dwellings with Registered Motor Vehicles (Source: ABS 2019)

Travel Modes to Work

Between 2001 and 2016, the total number of residents travelling to work has increased slightly by 20, or 6%. Of all modes of travel, using a car as driver was the most popular mode of transport. 62% of trips were undertaken using this mode. Walking and 'other' were the second and third most popular modes.

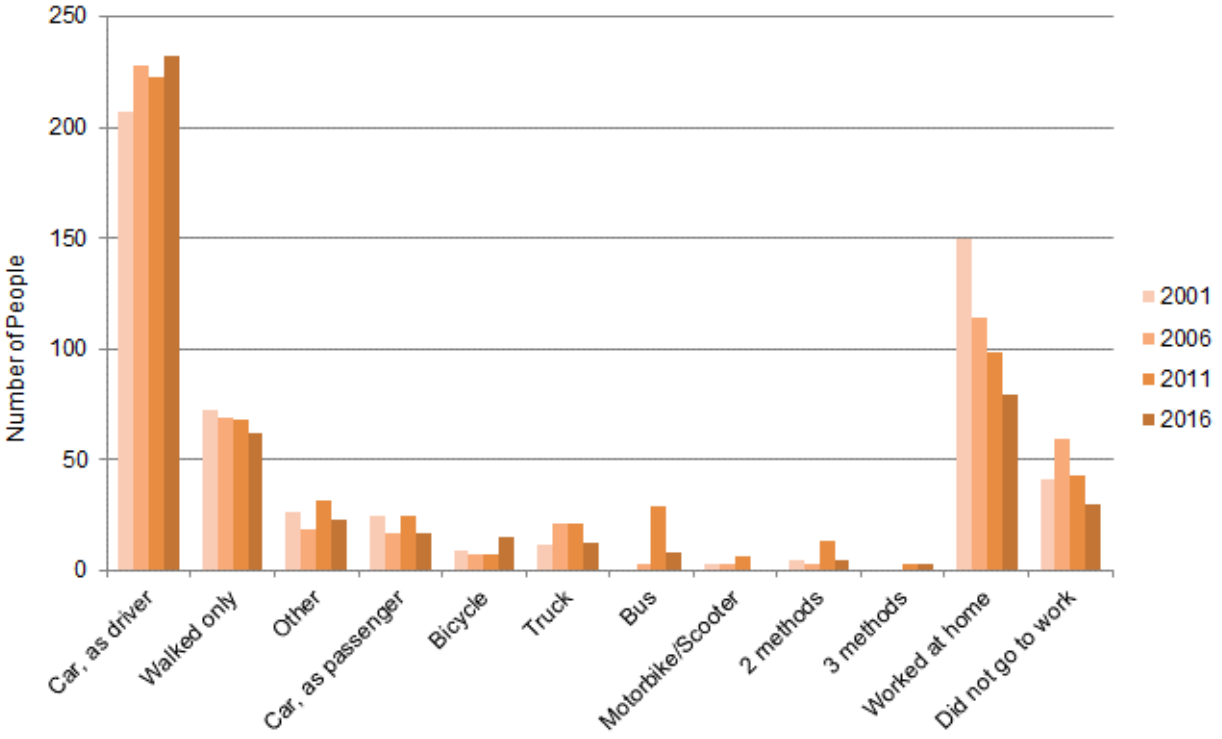

Figure 3: Travel Mode to Work (Source: ABS 2019)

Population & Demographic Change

The overall population of the Shire (Figure 4) between 2001 and 2016 has fallen from 950 to 864. This decrease of 86 people (-9%) suggests that demand for transport services may have also decreased.

Over the same timeframe, the median age has increased from 35 to 43. Growth has occurred in the older age bands, from years 50 plus. Population declines have occurred in all 0-49 year age bands.

With this changing demographic, demand for transport may have also changed. For example, with an ageing population, there may be a shifting demand change away from roads and motor vehicles, and to assets such as paths (e.g. 'gophers').

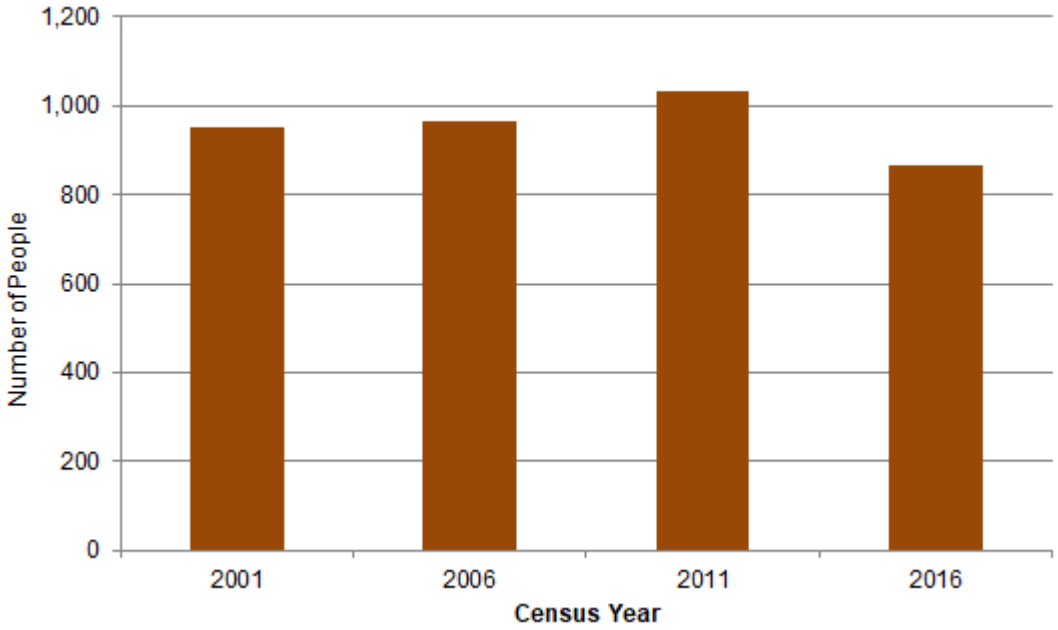

Figure 4: ABS Population – Shire of Kondinin 2001-2016

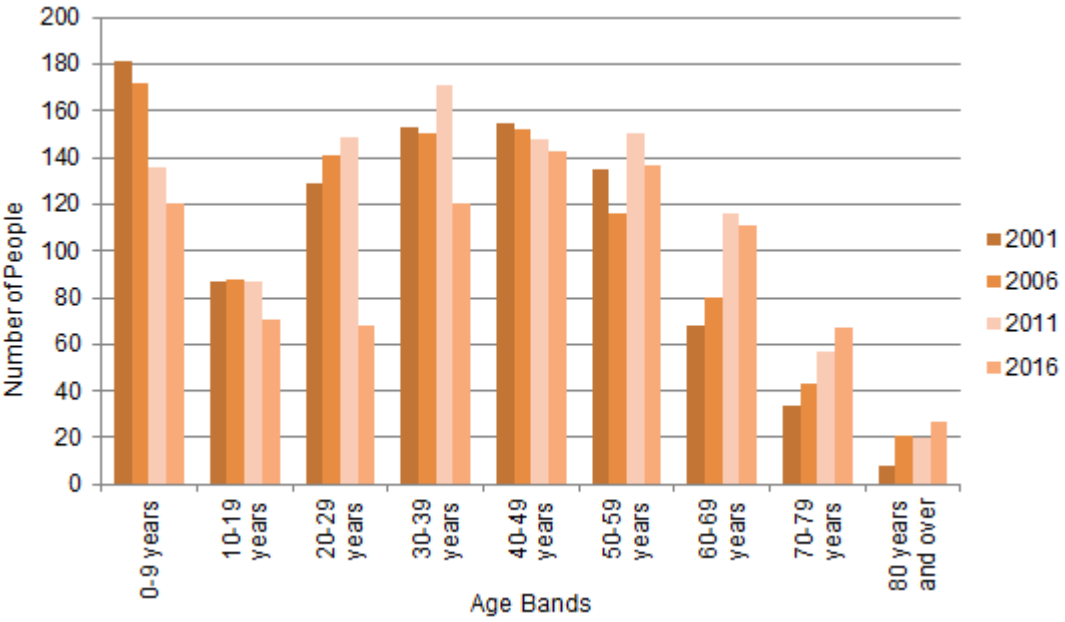

Figure 5: ABS Demographics – Shire of Kondinin 2001-2016

Recreation Participation Change

The ABS Participation in Sport and Physical Recreation Survey was last conducted in 2013-14. Within Australia, walking for exercise remained the most popular activity over time with a participation rate of 19.2%. The second and third most popular activities were fitness/gym (17.4%) and jogging/running (7.4%) respectively. Ensuring that the Shire provides a quality path network upon which people can walk is therefore of a high importance.

Tourist & Visitor Numbers Change

Outside of immediate local demand, there may be potential demand from visitors to the Shire, whether day trippers or tourists. Figures from Tourism WA show that over the past five years, the estimated number of visitors to/within WA have risen from 26.5million in 2013/14 to 32.2million in 2017/18. Figures show that 7% of these visitors go to the 'golden outback' region, within which the Shire sits. As such, the historic growth in tourist numbers may have increased transport demand within the Shire.

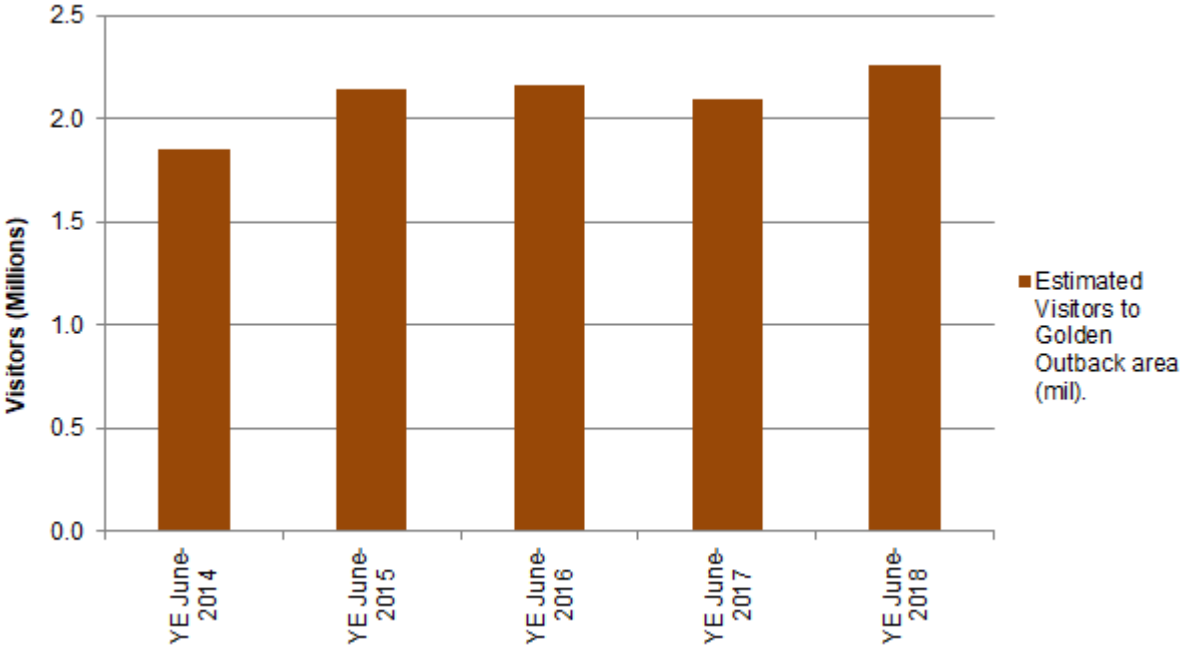

Figure 6: Estimated Golden Outback Visitors (Source: Tourism WA December 2018)

Rainfall Change

Consideration of historical annual rainfall may provide an indication of climate change. Figure 7 shows the annual total rainfall in Kondinin from 1918 to 2017. It can be seen from the trend line that annual rainfall levels have largely remained the same, which is contrary to the trend typically seen across the WA wheatbelt. This suggests that rainfall has not been a driver of change.

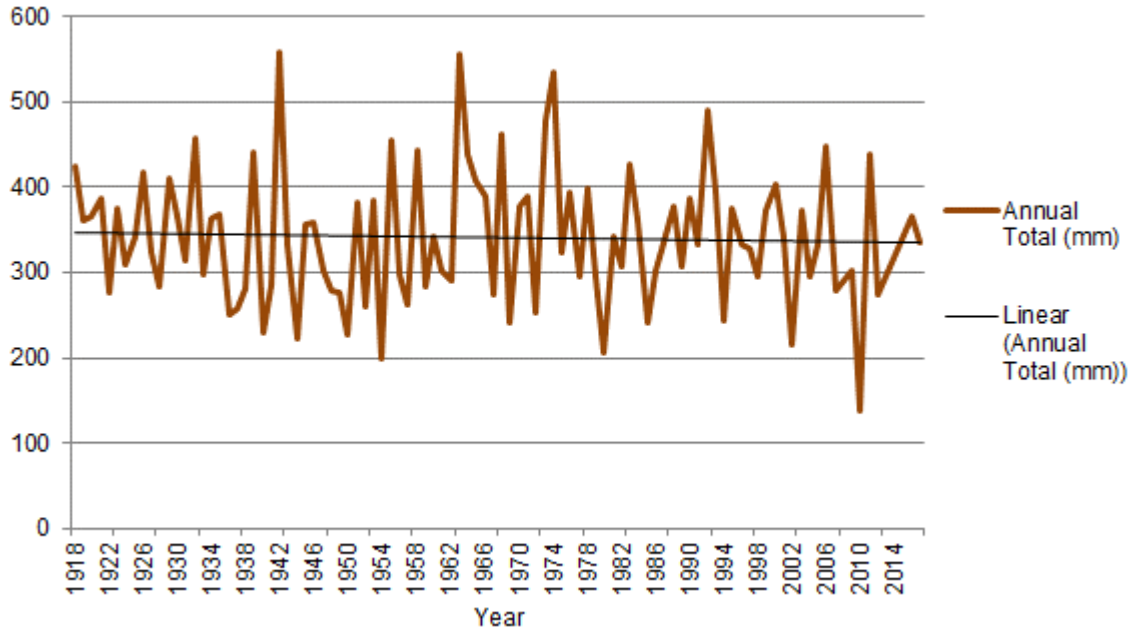

Figure 7: Kondinin Airport Weather Station Historical Annual Rainfall

Temperature Change

A review of the annual mean maximum temperatures shows that between 1949 and 2017, there has been an increase from about 32.6ºC to 33.3ºC. This change suggests that the environment may be experiencing hotter temperatures. Over time, this change may affect a number of transport assets, and their likely achievable maximum lives. If this occurs, then whole of life costs may increase, resulting in additional budgetary demands.

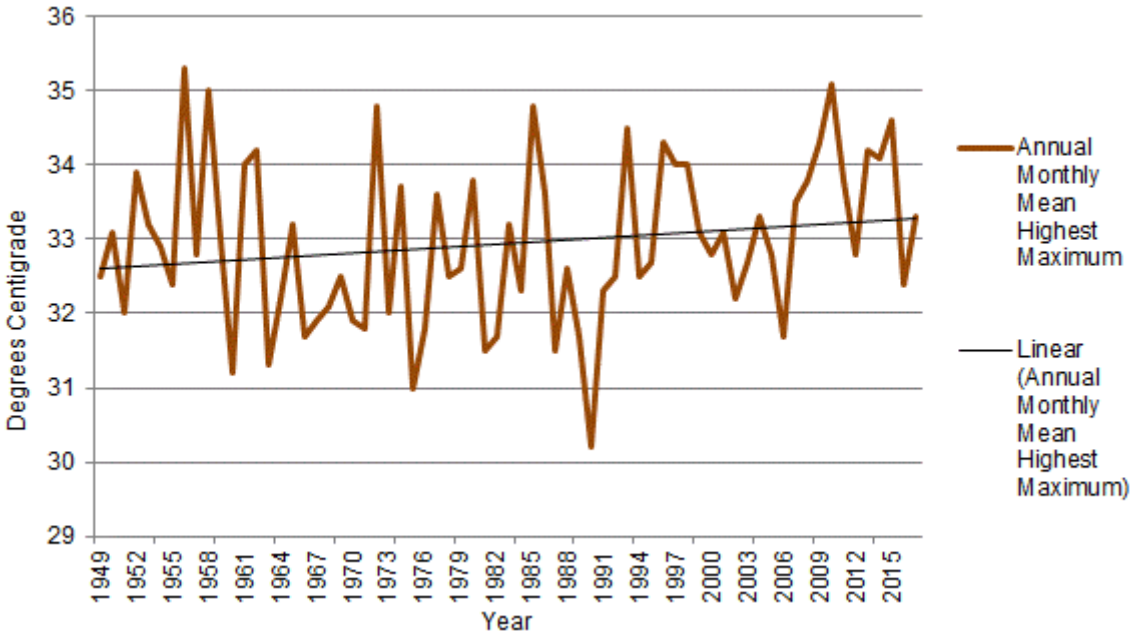

Figure 8: Corrigin Weather Station Historical Annual Monthly Mean Highest Maximum Temperature

Future Demand Drivers

In order to identify future demand pressures on the transport network (both positive and negative), six driver categories have been considered. These drivers may influence actual usage levels, as well as possibly requiring future resources to meet specific service needs or goals. Each of these demand drivers are discussed below and their effect summarised. The exact effects of many of these drivers are difficult to quantify and may also require further study and research.

Political

↑ IPRF - Integrated Planning and Reporting requirements continue to demand improvements to the Shire's asset management practices – Expected to continue to drive improved practices and hence require additional resources, over the medium term.

↔ Policy & Strategy - Council has the ability to change (up or down) the quality of service levels and hence effect costs – Considered unlikely to significantly change.

↑ External Funding - A significant portion of the Shire's annual transport budget is derived from state and federal grant scheme funding. It is thought likely that non municipal income sources will at best be maintained and at worse decrease over the life of this AMP, resulting in proportionally more resources from municipal sources (e.g. rates) – A pessimistic view is currently being taken by the Shire.

↔ Reform - Local government reform continues to occur, with the next major initiatives being the Auditor General taking over responsibility for local government audits from 1 July 2018, as well as the review of the Local Government Act - For now, the effects on service demand are unclear.

Economic

↔ Fuel - Australian Institute of Petroleum data shows that in recent year's Australian petrol and diesel prices have remained fairly stable. They are also amongst the lowest in OECD countries. Looking forward, it is very difficult to predict future fuel prices. Industry commentary suggests that the mass introduction of electric vehicles may limit future petrol and diesel prices, but not until at least 2040. The retail and refining markets remain highly competitive, and with current over production, suggest that prices will be kept low - As a result, transportation cost changes may not be a significant influencer of service demand.

↔ Maintenance & Construction - The Bureau of Infrastructure, Transport and Regional Economics (BITRE) provides economic analysis, research and statistics on infrastructure, transport and regional development issues. The 2018 update shows that while there was a fall in the index from 2012-13 to 2015-16, the long term outlook is for a period of faster growth from 2017-18, followed by growth matching inflation in the 2020s - The net result of this is that road network costs will have to at least increase by inflation to ensure current service levels are maintained.

↔ Financial Sustainability – A review of the MyCouncil ratios shows that the three asset focussed ones have consistently been at or above target bands. However, there are clearly issues with the ratios' calculations, as evidenced by the asset consumption ratio, which is impossibly high. Consideration of transport assets only produces a ratio of 56% - This suggests that there are no immediate financial sustainability concerns.

Social

↓ Population - State forecasts suggest that the Shire's population is likely to fall in four of its five scenarios. With a historical change of -0.6% (2001-16) Band D may be the most likely scenario. This projects a population of 810 by 2031 – Demand likely to fall.

↑ Demographics – If the ageing population (higher median age) trend continues, then it is likely that service demand change will occur. An increase will be expected for better path (e.g. for elderly walkers) and public transport assets/services - Demographics is likely to be a driver of change.

↔ Travel Modes - Historical data shows that the number of people travelling to work rose between 2001 and 2016. Despite this, the modes of travel have generally not changed, with car use (as driver) by far the primary mode - Looking forward, no significant changes to this service demand have been identified due to travel mode.

↑ Tourism - With past figures demonstrating an increase in visitor numbers to the 'golden outback' region of WA, service demand change seems to have occurred. In addition, increasing tourism within WA seems to be a key commitment of the state government. As a result, while the direct change in service demand is likely to be small, there may be a need to further develop specific transport assets that will result in an enhanced experience for tourists (e.g. signage & information, parking areas etc.) – Likely to remain a growing demand source.

Technological

↔ Construction Technology - Although road pavement and seal construction technology is constantly evolving and improving, given the comparatively long life of typical WA roads, it is not thought that significant demand trends exist from road construction technology over the life of this AMP – unlikely to be a change driver.

↓ Robotics & Technology Integration – Uptake/implementation of robotics and software technology into management practices should increase the efficiency of maintenance practices – may possibly reduce lifecycle management costs.

↔ Electric Vehicles - Globally, the manufacture of electric vehicles has gained momentum in recent years, although still remains a long way off of conventional vehicle sales. Within Australia however, the uptake of the technology has been noticeably slower. Some of the constraints to sales includes pricing and access to recharge points. Looking forward over the life of this AMP, there may be future demand for the Shire to provide, or at least facilitate the creation of, electric recharge points for vehicles - Further investigation is required in order to scope the limits of such a project and it has been listed as an improvement action.

Legal

↔ Litigation Change – it is not anticipated that litigation levels will change from currently low levels. The Shire has some 'identify and fix' maintenance programmes, however generally there is room for improvement and greater formalisation - Aside from the normal risks associated with assets, no specific additional legal demand drivers have been identified at this time.

Environmental

↔ Environmental Awareness – Pressure may occur for the Shire to demonstrate that the environmental cost of the transport network is progressively reduced. However, at present there appears to be limited scope in what the Shire can change when it comes to transport assets – Likely a neutral effect at present.

↑ Climate Change – trends suggest that this is occurring and therefore extreme events, hotter and dryer weather are likely. Climatic change will demand improvements to management practices and potentially some assets (e.g. drainage) - Protecting assets from peak weather events may become increasingly more important.

Future Demand Summary

During a workshop in June 2019, Shire staff considered each of the potential sources of service demand change. As a result, the following drivers were considered to be those likely to have the greatest change effect. Demand mitigation tactics (if required) have been identified and are recorded in Part 1.

= Operation, maintenance and construction costs
= State Government
= External funding
= Council
= Legislation and compliance
= Financial sustainability

Appendix D – Network Physical Parameters

Data Confidence

To be able to effectively manage its assets, the Shire collects and maintains a range of data on its transport network. Understanding where gaps in this data exist is important to determine the confidence that we can put in the outcomes (e.g. valuations) that result. Table 5 details the reliability and confidence levels of the current asset data the Shire holds. In assessing the data, the Shire has applied the IIMM confidence framework as detailed in Table 4.

Confidence Grade	Description	Accuracy
Very Good	Accurate	100%
Good	Minor inaccuracies	± 5%
Average	50% estimated	± 20%
Poor	Significant data estimated	± 30%
Very Poor	All data estimated	± 40%

Table 4: Data Confidence Measures

Asset Class	Inventory	Condition	Valuation
Road Seal	Good	Good	Good
Road Pavement	Good	Good	Good
Kerbing	Good	Good	Good
Paths	Good	Good	Good
Drainage	Average	Poor	Average
Car Parks	Average	Average	Average
Street Furniture	Average	Average	Average
Aerodrome	Average	Average	Average

Table 5: Transport Network Data Confidence Levels

Inventory

The following outlines the Shire's transport asset inventory as at 9 May 2019.

Roads

Road Materials

Asset/Component	Length (m)	Area (sq.m.)
Formation	1,336,710	11,379,357
Pavement	1,199,182	9,116,202
Gravel	*900*	*8,100*
Recycled Material	*5,850*	*49,350*
Unknown	*1,192,432*	*9,058,752*
Sealed Surface	202,252	1,304,551
Asphalt	*95*	*950*
Concrete	*10*	*80*
Double Seal	*8,560*	*60,480*
Primer Seal	*2,000*	*14,000*
Rubber Reseal	*690*	*6,810*
Single Seal	*190,627*	*1,220,152*
Slurry Seal	*270*	*2,079*
Kerbing	17,775	
Barrier	*17,775*	

Table 6: Road & Kerb Quantity by Material

Road Cross Section

Cross Section Type	Length (m)	Area (sq.m.)
Unbuilt	4,600	4,600
Unformed	21,640	111,600
Formed	122,632	948,872
Paved	998,656	6,610,491
Sealed with no kerbing	184,292	1,176,681
Sealed with kerbing one side	1,385	12,399
Sealed with kerbing both sides	8,185	74,551

Table 7: Road Quantity by Cross Section

Road Hierarchy

Hierarchy	Length (m)	Area (sq.m.)
Regional Distributor	174,610	1,231,939
Local Distributor	269,200	1,886,961
Access Road	897,530	5,820,244
Unrecorded	50	50
TOTAL	**1,341,390**	**8,939,193**

Table 8: Road Quantities by Hierarchy

Paths

Material	Length (m)	Area (sq.m.)
Bituminous Seal	140	480
Concrete Slabs/Pavers	1,680	3,108
Gravel	7,860	21,780
Insitu Concrete	100	150
Unknown	1,320	132
TOTAL	**11,100**	**25,650**

Table 9: Path Quantities by Material

Drainage

Item	Count	Length (m)
Culverts	1,378	9,386
Pits	2	
Pipes	-	-

Table 10: Drainage Quantities by Type

Car Parks

Item	Count	Area (sq.m.)
Car Parks	8	31,340
Ticket Machines	1	

Table 11: Car Park Quantities by Type

Street Furniture

Item	Count
Advisory Signs	944
Floodways	240

Medians & Islands	1
Parking Bays	10

Table 12: Street Furniture Quantities by Type

Aerodromes/Airstrips

Assets	Count
Airstrips	1

Table 13: Aeronautical Facilities by Type

Condition

The following table outlines the Shire's transport assets' condition as at 9 May 2019.

Asset Sub Type	Condition					
	Unknown	Very Good	Good	Average	Poor	Very Poor
Road Surface	0%	14%	43%	35%	8%	0%
Road Pavement	0%	8%	21%	35%	30%	6%
Kerbing	0%	91%	0%	0%	0%	9%
Path Surface	99%	1%	0%	0%	0%	0%
Culverts	99%	1%	0%	0%	0%	0%
Drainage Pits	100%	0%	0%	0%	0%	0%
Drainage Pipes	100%	0%	0%	0%	0%	0%
Car Parks	0%	11%	23%	33%	33%	0%
Street Furniture	100%	0%	0%	0%	0%	0%
Airstrips	0%	0%	100%	0%	0%	0%

Table 14: Asset Condition Profiles

Valuation

The following table records the current values of transport assets.

Asset Sub Type	Value			
	CRC	FV	ADE	Year
Road Surface	$11,352,062	$5,875,762	$566,348	2018
Road Pavement	$207,750,746	$116,741,369	$2,066,204	2018
Road Formation	-	-	-	-
Road Kerbs	-	-	-	-
Paths	$627,000	$278,800	$22,960	2018

Culverts	-	-	-	-
Drainage Pits	-	-	-	-
Drainage Pipes	-	-	-	-
Car Parks	$1,230,000	$520,387	$78,577	2018
Street Furniture	-	-	-	-
Airstrips	$872,000	$520,387	$78,577	2018
Totals	**$221,831,808**	**$123,993,797**	**$2,769,829**	

Table 15: Asset Valuations

Appendix E – Lifecycle Management Strategies

Background

Lifecycle management encompasses all strategies and practices that the Shire employs to manage all transport assets at the lowest lifecycle cost. This section details all the strategies and practices that are currently employed.

Principles & Definitions

In considering the Shire's Asset Lifecycle Management, the following key principles and definitions must be considered.

Work Category Definitions

The Shire considers the activities it undertakes across six categories as follows.

Activity	Definition
Operation	Continuously required expenditure which enables assets to provide benefits to the community such as utility charges, inspections, cleaning etc.
Maintenance	Regular works to maintain the assets' capability, such as minor repairs, servicing, mowing, painting, crack seals etc.
Renewal	Works to replace existing assets which are worn, poorly functioning or dated with assets of equivalent capacity or performance. For example, the renewal of an internal wall in a building, renewal of an engine in a grader, resurfacing a road (re-sheeting or resealing) or replacing girders on a bridge.
Upgrade	The significant upgrade of an asset to produce a higher service level, such as dualling or widening of a road, extension of a building, installation of reticulation to a dry park etc.
New Work	The creation of a new asset, in a location where that asset type has not existed before.
Asset Disposal	The process of removing and disposing of an asset upon the end of its useful life. For the purpose of this AMP this is only when an asset is not replaced.

Table 16: Activity Categories

Lifecycle Cost Basis

All assets have a lifecycle. This is defined as the time interval that commences with the identification of the need for an asset and ends with the decommissioning of the asset (i.e. disposal but with no replacement). It covers five stages, being conception & design, acquisition/construction, operation & maintenance, renewal and disposal.

Operation & Maintenance Strategy

Often referred to as 'OPEX', operational & maintenance expenditure and works are required to ensure the longevity of assets' lives and the reliability of services. The Shire's approach to meeting OPEX needs is a combination of reactive and short term planned strategies. As described in the figure below, the Shire's strategy to OPEX is:

- Operational costs typically vary with usage. The Shire broadly works on an annual budget planning cycle (12 months), and seeks funding in-line with previous years' budgets, with an allowance for at least CPI.
- Reactive maintenance typically arises from either community requests and/or internal works orders. Works are then scheduled, actioned and completed. Budgeting is based on previous years' allocations, with an increase of at least CPI.
- Planned maintenance programmes exist for an annual budget planning cycle (for the future twelve-month period). Maintenance works are typically identified from either internal staff inspection or by legislative, policy or specification requirements. Budgets are developed based on the programmes and previous years' expenditure, with an increase of at least CPI. However, the planned maintenance programmes are generally not documented. An improvement action has been listed, to document planned maintenance schedules, with associated budgets, for transport assets.

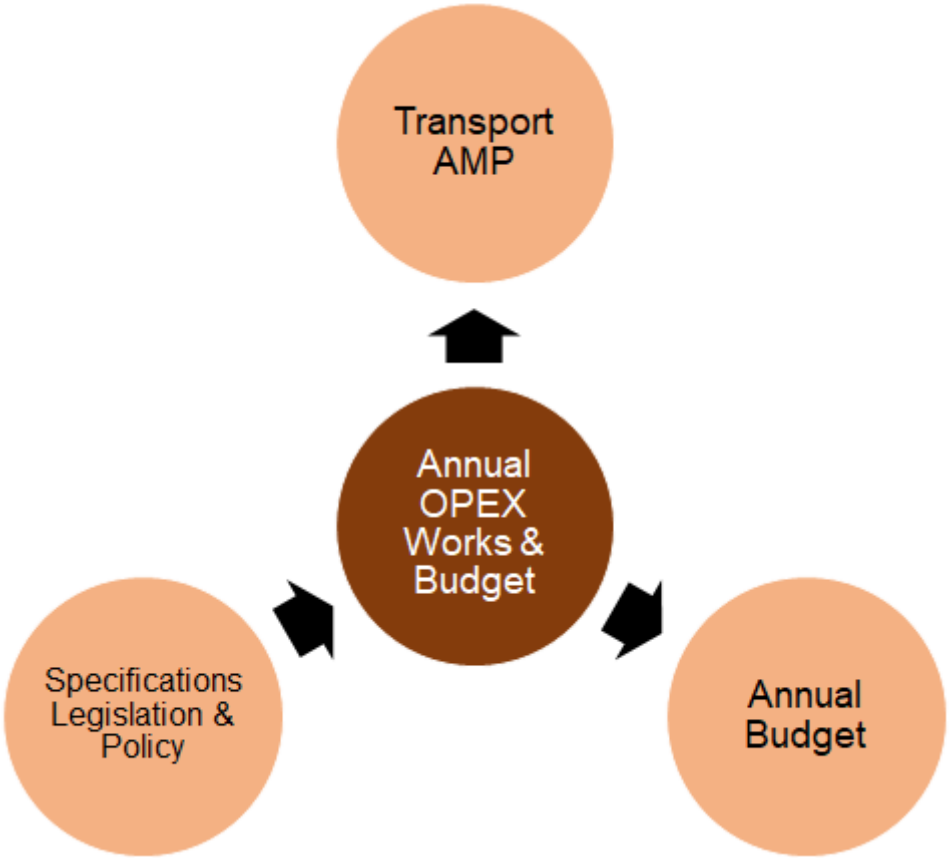

Figure 9: Transport Asset Maintenance Framework

Staff Resources

The overall management of the Shire's transport network falls within the responsibility of the Chief Executive Officer. The Manager of Finance is responsible for overall accounting control of transport assets, and the Manager of Works for engineering based works. The Shire is also assisted from time to time by external contractors.

Software Systems

The Shire currently employs the use of the following software systems to manage asset data.

Software System	Uses
RAMM	RAMM is able to centrally record inventory and condition data for all transport assets. At present through, it is only used for roads, paths, culverts and signs.
SynergySoft	SynergySoft is used to record all transport asset revenue and expenditure, as well as relevant records.
MetroCount	MetroCount is used to process and hold data from onsite road traffic counts.

Table 17: Asset Management Software Systems

Renewal Strategy

The Shire periodically inspects some transport assets to collect critical inventory and condition information. This information can then inform several key outputs (e.g. long-term renewal works programmes).

Renewal Management Model

Condition information can be used to develop models that predict assets' approximate year of renewal. The Shire then scopes and prioritises these renewal projects over the forthcoming period (e.g. 5 years). Further out (e.g. from years 6 onwards), results can help staff to understand the likely amount of renewal expenditure that will be required, even if the exact project details are not yet known. Ultimately, a robust long term (e.g. 15 years) renewal works programme can then be developed, that informs this AMP, and other documents such as the Long Term Financial Plan and Corporate Business Plan.

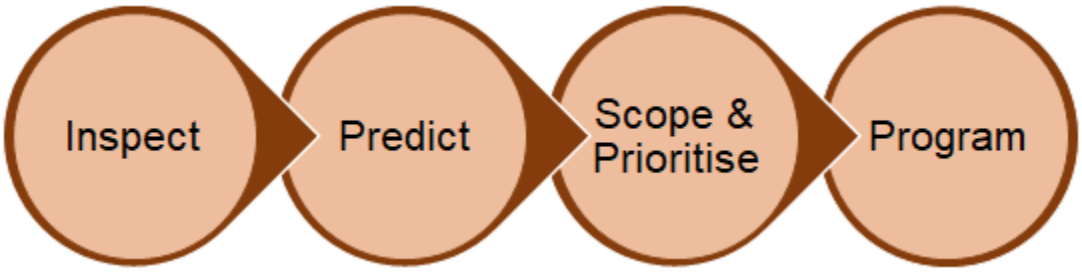

Figure 10: Example Transport Asset Renewal Planning Process

Inspections

Asset Condition Rating Scale

The Shire undertakes the condition rating of many of its infrastructure assets to determine their remaining useful life and fair values. In assessing assets' condition, the Shire has adopted a 1 to 5 scale of rating which allows the overall condition of different asset classes to be compared. Table 18 details the scale applied and what each rating means.

Grade	Condition	Description
1	Very Good	A new or near new asset, or an asset recently rehabilitated back to new condition, with no visible signs of deterioration. The asset or component will have no drop in level of service.
2	Good	An asset in excellent overall condition. There would be only very slight condition decline but it would be obvious that the asset was no longer in new condition.
3	Average	An asset in fair overall condition deterioration in condition would be obvious and there would be some serviceability loss.
4	Poor	An asset in fair to poor overall condition. The condition deterioration would be quite obvious. Asset serviceability would now be affected and maintenance costs would be rising.

5	Very Poor	An asset in poor to unserviceable overall condition deterioration would be quite severe and would be starting to limit the serviceability of the asset. Maintenance cost would be high.

Table 18: Condition Rating Measures

Condition Inspection Frequencies

Transport assets are inspected in line with the relevant Manuals listed in Table 20 to the following frequencies.

Asset	Inspection Frequency
Roads	Sealed – adhoc. Unsealed - adhoc.
Paths	Adhoc.
Drainage	No programme.
Car Parks	Adhoc.
Street Furniture	Adhoc.
Airstrips	Adhoc.

Table 19: Condition Inspection Frequencies

Inspection Manuals

The following manual are employed by the Shire when recreation assets are being inspected.

Asset	Manual
Roads	Maintenance - There is no manual currently used for road safety and maintenance inspections.
	Condition - WALGA Road & Path Visual Condition Assessment Manual – External document.
Paths	Maintenance - There is no manual currently used for path safety and maintenance inspections.
	Condition - WALGA Road & Path Visual Condition Assessment Manual – External document.
Drainage	Maintenance & Condition – There is no manual currently used.
Car Parks	Maintenance & Condition – There is no manual currently used.
Street Furniture	Maintenance & Condition – There is no manual currently used.
Airstrips	Maintenance & Condition – There is no manual currently used.

Table 20: Asset Inspection Manuals

Modelling

By understanding assets' physical condition (or any other performance feature), the Shire can then predict when assets, or their components, may require renewal. Typically, this is achieved by applying total useful lives to different assets or components, and then calculating how long it will take for them to reach a specific trigger.

Asset	Action	Triggers
Roads	Renewal	Condition rating of 4 (poor) or 5 (very poor) for any rating.
Paths	Renewal	Condition rating of 4 (poor) or 5 (very poor).
Drainage	Renewal	Condition rating of 4 (poor) or 5 (very poor).
Car Parks	Renewal	Condition rating of 4 (poor) or 5 (very poor).
Street Furniture	Renewal	Condition rating of 4 (poor) or 5 (very poor).
Airstrips	Renewal	Condition rating of 4 (poor) or 5 (very poor).

Table 21: Asset Renewal Condition Triggers

Upgrade/New Strategy

The Shire occasionally constructs or acquires upgraded and/or new assets. Expenditure on these assets is often considered as discretionary, and ultimately results in either a new or improved service (e.g. road widening results in a safer and/or higher capacity road). The following section outlines the Shire's general approach to upgrade and new projects.

Project Prioritisation/Selection Criteria

The need for either upgraded or new assets is typically identified by Shire staff from a number of potential sources including customer and Council request, strategic plans, poor asset performance and so on. Assets' needs are then investigated by staff in order to determine their potential scope, benefit and costs. Where determined as being required, a formal report may be given to Council for their consideration and approval. Reports may consider different project aspects, such as costs, risk and strategic plan alignment.

Disposal Strategy

At the present time the Shire generally does not frequently dispose of transport assets. Where such a project is identified, then the need and scope is considered by Shire staff and (in some instances) Council.

Appendix F – Financial Model

Projected Expenditure Requirements

Transport Works Programme Summary

Asset Sub Type	Activity Type	Activity Description	Funding Type	Year 1 2018/19	Year 2 2019/20	Year 3 2020/21	Year 4 2021/22	Year 5 2022/23	Year 6 2023/24	Year 7 2024/25	Year 8 2025/26	Year 9 2026/27	Year 10 2027/28	Year 11 2028/29	Year 12 2029/30	Year 13 2030/31	Year 14 2031/32	Year 15 2032/33	Year 16 2033/34
Roads																			
All Components	Maintenance	Road Maintenance	Municipal	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000
Pavement	Maintenance	Winter Grading	Municipal	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
Pavement	Maintenance	Summer Grading	Municipal	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000
All Components	Operation	Traffic Counter Maintenance	Municipal	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
All Components	Operation	Consultant Fees (Valuation & Inspections)	Municipal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
All Components	Renewal	Flood Damage Repair	Ext Funding	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506	$175,506
All Components	Renewal	Regional Road Group Projects (inc 19/20 Blackspot)	Ext Funding	$344,500	$444,851	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500	$344,500
All Components	Renewal	Regional Road Group Projects (inc 19/20 Blackspot)	Municipal	$150,125	$225,836	$173,350	$185,500	$186,500	$191,250	$189,500	$191,550	$195,500	$195,500	$195,500	$195,500	$195,500	$195,500	$195,500	$195,500
All Components	Renewal	Road Construction (Renewal) Council	Municipal	$814,786	$419,901	$500,000	$1,000,000	$1,000,000	$1,000,000	$1,500,000	$1,500,000	$1,800,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000
All Components	Renewal	Roads to Recovery Projects	Ext Funding	$0	$405,133	$405,133	$405,133	$405,133	$405,133	$405,133	$405,133	$405,130	$405,130	$405,130	$405,130	$405,130	$405,130	$405,130	$405,130
ROADS TOTAL				**$2,112,417**	**$2,298,727**	**$2,225,989**	**$2,738,139**	**$2,739,139**	**$2,743,889**	**$3,242,139**	**$3,244,189**	**$3,548,136**	**$3,748,136**	**$3,748,136**	**$3,748,136**	**$3,748,136**	**$3,748,136**	**$3,748,136**	**$3,748,136**
Paths																			
Paths	Renewal	Footpath Maintenance (localised repairs)	Municipal	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Paths	New	Footpath Improvements	Municipal	$50,000	$100,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
PATHS TOTAL				**$70,000**	**$120,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**	**$70,000**
Drainage																			
Stormwater Drains	Renewal	Townsite Drainage	Municipal	$1,700,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Culverts	Renewal	Replacement of Road Culverts	Municipal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DRAINAGE TOTAL				**$1,700,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Car Parks																			
Surface	Renewal	Yeerakine Lodge Car Park	Municipal	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Surface	Renewal	Unallocated General Renewal Allowance	Municipal	$0	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000
CAR PARK TOTAL				**$10,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**
Street Furniture																			
Street Lighting	Operation	Street Lighting	Municipal	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000	$33,000
Street Furniture	Operation	Streetscape/Cleaning	Municipal	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000
Street Signs	Maintenance	Street Signs Maintenance	Municipal	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Street Signs	Maintenance	Street/Traffic Signage	Municipal	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Street Signs	Maintenance	Traffic Signs Maintenance	Municipal	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000
STREET FURNITURE TOTAL				**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**	**$214,000**
Aerodrome																			
All Components	Maintenance	Aerodrome Maintenance	Municipal	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000
AERODROME TOTAL				**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**	**$6,000**
TOTAL TRANSPORT WORKS EXPENDITURE				**$4,112,417**	**$2,668,727**	**$2,545,989**	**$3,058,139**	**$3,059,139**	**$3,063,889**	**$3,562,139**	**$3,564,189**	**$3,868,136**	**$4,068,136**	**$4,068,136**	**$4,068,136**	**$4,068,136**	**$4,068,136**	**$4,068,136**	**$4,068,136**

Key Assumptions

A number of key assumptions are made in preparing forecasts of required transport network expenditure. They are that:

- Transport assets will remain in Council ownership throughout the period covered by this AMP, unless specifically detailed otherwise.
- Standards, Acts and Regulations associated with transport assets will remain essentially the same over the AMP life.
- Expenditure projections allow for no annual inflation.
- Operation and maintenance costs are based primarily on planned programmes where available. Where not available, cost projections are based on historical expenditure trends which are not necessarily a sound indicator of future need, nor are tied to actual activities.
- Renewal programmes have been based primarily on defined works programmes where available. Where not available, programmes are based on either modelling projections, historical cost and/or annual depreciation rates.
- Upgrade, acquisition/construction and disposal programmes are based on defined works programmes.
- Inventory information used in calculations is the latest available at hand, but consideration of overall data confidence levels is critical when using this AMP.
- Unit costs and assumed asset lives are the Shire's but do not necessarily represent actual asset performance.
- Historical expenditure reports split by activity may contain expenditure that was actually expended on different activities.

Accuracy of future financial forecasts may be improved in future revisions of this AMP by the following actions.

- Developing activity based operation and planned maintenance schedules, with associated budgeting.
- Further developing the accuracy of the capital works programme by detailing individual projects, using inputs such as known condition.

Appendix G – Asset Ratios

Background

On an annual basis, each WA local government reports seven key performance indicators (KPIs) (available within the Annual Report). Of these, three KPIs reflect the performance of the Shire's assets. These KPIs are useful in determining:

- the current physical state of the asset portfolio
- how sufficient past renewal expenditure was
- whether sufficient future renewal expenditure is being allowed for

Asset Consumption Ratio

The ratio is a measure of the condition of the Shire's physical assets, by comparing their condition based fair value (what they're currently worth) against their current replacement cost (what their replacement asset is currently worth as new). The ratio highlights the aged condition of the portfolio and has a target band of between 50%-75%. Non depreciating assets (e.g. road formation) should be excluded from the calculation.

$$\frac{\text{Depreciated Replacement Cost (Fair Value) of Depreciable Transport Assets}}{\text{Current Replacement Cost of Depreciable Transport Assets}}$$

Asset	Fair Value	CRC	ACR
Roads (ex formation)	$122,617,131	$219,102,808	56%
Paths	$278,800	$627,000	44%
Drainage	-	-	-
Car Parks	$520,387	$1,230,000	42%
Street Furniture	-	-	-
Airstrips	$577,480	$872,000	66%
Total	**$123,993,797**	**$221,831,808**	**56%**

Table 22: Transport Assets Consumption Ratios

Asset Sustainability Ratio

The ratio is a measure of the extent to which assets managed by the Shire are being replaced as they reach the end of their useful lives. The ratio is essentially past looking, and is based upon dividing the average annual depreciation expense of the transport asset portfolio by the average annual renewal expenditure, for a number of past years (e.g. 3). The ratio has a target band of between 90%-110%.

$$\frac{\text{Transport Asset Renewal Expenditure}}{\text{Transport Asset Depreciation}}$$

Asset	2015/16-2017/18 Average	ADE	ASR
Roads	$1,537,077	$2,632,552	58%
Paths	$44,496	$22,960	194%
Drainage	-	-	-
Car Parks	$0	$78,577	0%
Street Furniture	-	-	-
Airstrips	$0	$35,740	0%
Total	**$1,581,573**	**$2,769,829**	**57%**

Table 23: Transport Assets Sustainability Ratios

Asset Renewal Funding Ratio

The ratio is a measure as to whether the Shire has the financial capacity to fund asset renewal as and when it is required over the future 10 years' period. The ratio is calculated by dividing the net present value of planned renewal expenditure over the next 10 years in the LTFP, by the net present value of planned renewal expenditure over the next 10 years in the AMP. The same net present value discount must be applied in both calculations. The ratio has a target band of between 95%-105%.

$$\frac{\text{NPV of LTFP Planned Renewal Expenditure over the next 10 years}}{\text{NPV of AMP Required Renewal Expenditure over the next 10 years}}$$

Asset	LTFP	AMP	ARFR
Roads			
Paths			
Drainage			
Car Parks			
Street Furniture			
Airstrips			
Total			