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ASSET MANAGEMENT PLAN ROADS AND TRANSPORT

RESOURCING STRATEGY
INTEGRATED **PLANNING AND REPORTING** FRAMEWORK



TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	3
1. INTRODUCTION.....	4
1.1 Fairfield City Plan Link	4
1.2 Scope of this Plan	5
2. LEVELS OF SERVICE.....	7
2.1 Legislative Requirements.....	7
2.2 Adopted Levels of Service	7
3. FUTURE DEMAND	16
3.1. Demand Forecast.....	16
3.1.1 Technological Change	16
3.1.2 Increased demand for asset renewal and maintenance	16
3.1.3 Change in community expectation.....	17
4. RISK MANAGEMENT.....	18
5. LIFE CYCLE MANAGEMENT PLAN.....	24
5.1 Objective	24
5.2 Asset Inclusions and Exclusions	24
5.2.1 Inclusions	24
5.2.2 Exclusions.....	24
5.3 Life Cycle Issues	24
5.4 Hierarchy 25	
5.5 Asset Description	26
5.6 Physical Parameters	27
5.6.1 Asset Capacity and Performance	27
5.6.2 Asset Condition.....	27
5.5 Asset Valuation	32
5.5.1 Asset Useful Life	32
5.6 Historical Expenditure	33
5.7 Life Cycle Activities	33
5.7.1 Operations	33
5.7.2 Maintenance	33
5.7.2.1 Maintenance Standards.....	34
5.7.2.2 Maintenance Strategy.....	34
5.7.2.3 Maintenance Program	35
5.7.2.4 Maintenance Service Provision	35
5.8 Renewal Plan	35
5.8.1 Renewal Strategy.....	35
5.8.3 Renewal Expenditure Forecasts	36
5.9 New/Upgrade Works:.....	40
5.9.1 New/Upgrade Works Strategy.....	40
5.9.2 Fairfield City Council – Capital Works Program and Funding Forecasts	41
6. FINANCIAL FORECAST	43
6.1 20 Year Financial Forecasts	43
6.1.1 Financial Projection Discussions	48
6.2 Key Assumptions	48
6.3 Funding Strategy.....	48
6.4 Confidence Levels.....	48
8. PLAN IMPROVEMENT AND MONITORING.....	50
8.1 Improvement Program	50
Appendix 1 – Maintenance Plan For Road and Transport Assets	51
Appendix 2 –Infrastructure Asset Inspection	61
Appendix 3 – Road Rehabilitation Program 2013/14 to 2016/17	64
Appendix 4 – Footpath Replacement Program 2014/15 to 2017/18.....	79

EXECUTIVE SUMMARY

The Roads and Transport Asset Management Plan (AMP) outlines all the tasks and resources required to manage and maintain Council's road and transport network to an agreed standard. The AMP sets out a detailed overview of all Council's road and transport assets (valued at approximately \$696 million). This AMP forecasts the resourcing required for maintaining the current condition of Council's road and transport assets.

Overall Council's road and transport assets are maintained at an average condition with only a small percentage of the road and transport assets rated in poor condition. In 2011/12 Council invested \$9.94 million in road and transport renewal.

Whilst this is a significant investment of funds by Council it has been calculated that there is a shortfall of \$1.5 million per annum if Council seeks to maintain its road and transport assets at the current condition. Without this funding shortfall being addressed the condition of Council's road and transport assets will deteriorate over time, as identified in this Asset Management Plan.

1. INTRODUCTION

Fairfield City Council is responsible for the management of road and transport assets valued at approximately \$696 million built up over many generations. This presents significant challenges as many assets were constructed many decades ago, some of these are approaching the end of their useful asset life. The cost of maintaining and renewing these depreciating assets is likely to be a significant impact on scarce financial resources over the coming decades.

1.1 Fairfield City Plan Link

The Fairfield City Plan goals and objectives in this Asset Management Plan are:

Broad Theme	Goal	Outcomes	How objectives are addressed in AMP
Theme 1 – Community Wellbeing	Goal 2: Being Healthy and Active we enjoy good health(physical, psychological, social and environmental), have access to high quality facilities and services and contribute to our own wellbeing through a healthy lifestyle	2.1 A healthy and safe environment	Sound asset management practices as set out in this AMP are used to ensure that assets are accessible, safe and fully functional.
Theme 2 – Places and Infrastructure	Goal 2: Buildings and infrastructure meet the changing standards, needs and growth of our community. Our city has activities, buildings and infrastructure to an agreed standard that cater to our diverse needs and future growth	2.1 Infrastructure is planned, managed and resourced to meet community need and service levels	Develop and apply asset management principles to support the maintenance and management of road and transport assets. Provision of adequate funding towards asset renewal to meet adopted level of service.
		2.3 Community facilities and assets including libraries, museums, community accessible and valued by the community	Sound asset management practices as set out in this AMP are used to ensure that assets are accessible where required and fully functional.
	Goal 3: Our City is accessible	3.1 Public transport, footpaths and roads are accessible, safe, efficient, convenient, reliable and affordable and connect people with where to go.	Sound asset management practices as set out in this AMP are used to ensure that assets are accessible, safe, efficient and fully functional. Provision of adequate funding towards footpath construction and renewal
	Goal 1: Our city is a clean and attractive plan where we take pride in our diverse character. Our city takes pride in the diversity of its built	1.1 Quality design, construction and maintenance help preserve our local character and respects the city's heritage and	Provision of assets through quality design (for purpose including whole of life costing), construction of new assets and asset upgrades. Undertake prompt repairs and maintenance of damaged

Broad Theme	Goal	Outcomes	How objectives are addressed in AMP
	environment which is reflected in the quality of new buildings and facilities as well as the care and maintenance of existing places and infrastructure	cultural diversity.	assets and optimise serviceability and useability of the asset network. Ensuring services are delivered at the right price and quality. Provision of adequate funding towards asset renewal.
		1.2 Places, infrastructure and buildings are clean, in good repair and meet important fire, safety, health and environmental standards.	Community focused and technical level of services are established and measured to ensure services are delivered effectively.
Theme 3 – Environmental Sustainability	Goal 3: Supporting Sustainable activities	2.1 Individuals, businesses, industries and government optimize their environmental performance	Use of recycled materials for asset maintenance and renewal where applicable.
Theme 5 – Good Governance and Leadership	Goal 1: We are well represented and governed where all act ethically and in the interest of the community Our City is well led by governments at all levels and efficiently managed by their administrations	1.3 Value for the public money that is spent	Sound asset management practices as set out in this road and transport AMP are used to ensure that assets are accessible, safe and fully functional.

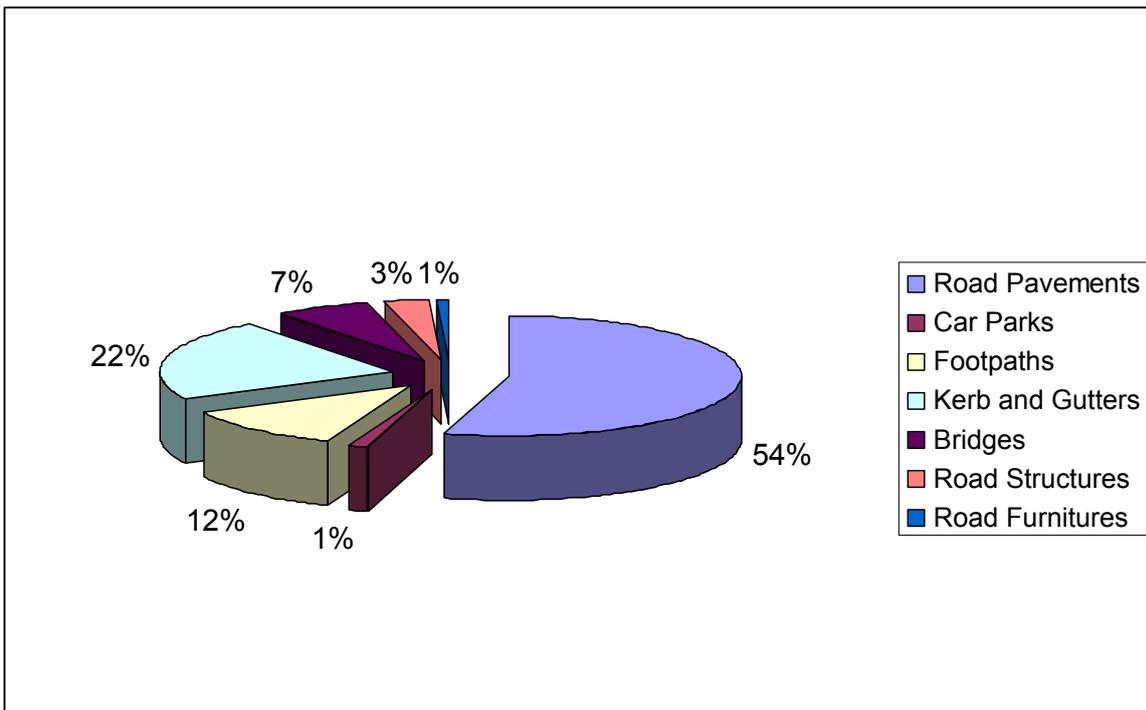
1.2 Scope of this Plan

Fairfield City Council is responsible for the management of road and transport assets as shown in Table 1.1 with a replacement value of \$696 million.

Table 1.1 – Replacement Cost

Asset Category	Quantity	Replacement Cost
Road Pavement	677 km	\$379,134,00
Car Parks	139	\$9,496,000
Footpath	768 km	\$81,110,000
Kerb and Channel	1207 km	\$153,225,00
Bridges and Culverts	87	\$45,653,000
Road Structure	-	\$21,318,00
Road Furniture	-	\$5,569,000
	TOTAL	\$695,505,000

Distribution of road & transport assets covered by this Asset Management Plan (AMP) are shown in Figure 1.1



2. LEVELS OF SERVICE

2.1 Legislative Requirements

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

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
The Australian Accounting Standards	The Australian Accounting Standards Section 27 (AAS27) requires that assets be valued, and reported in the annual accounts, which also includes depreciation value (i.e. how fast are these assets wearing out).
Roads Act	Other issues affecting asset service levels include judicial decisions relating to Council's role as roads authority for local roads as conferred by the Roads Act 1993, and legislative powers granted to public utilities relating to road openings
Environmental Planning and Assessment Act 1979	Sets out guild lines for land use planning and promotes sharing of responsibilities between various levels of government in the state.
Environmental Planning and Assessment Amendment Act 2008	Sets out guild lines for land use planning and promotes sharing of responsibilities between various levels of government in the state.
Protection of the Environment Operations Act 1997	Sets out Council responsibility and powers of local area environment and its planning functions.
Legislative Powers of Public Utilities	A number of state and commonwealth legislative provisions grant public utilities the power to open roads for the purpose of installation and maintenance of utility assets under road infrastructure. Generally Council controls restoration of the surface, however subsurface restoration by utilities or their nominated contractors may result in short and long term risk of failure. Consequently, the ability of Council to meet agreed levels of service is dependent on well co-ordinated utility work practices

2.2 Adopted Levels of Service

The adopted Levels of Service that are considered appropriate to Fairfield City Council are scheduled in Table 2.2.1.

Table 2.2.1

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
Road Pavement	Quality	Provide a smooth ride	Average score of 7/10 or higher for customer satisfaction of the local road system	Unknown	Customer Satisfaction Survey	Undertake regular condition inspection and identify necessary works
	Safety	Safety of road network maintained and improved	Reduction in number of injury and vehicle crashes recorded on local roads with road environment as contributing factor	Unknown	RTA Crash Data	Provide traffic control devices and conduct programmed risk assessment as per specified inspection frequency
	Condition	Average Asset Condition	Average condition of 1.9	Average condition of 1.9	Condition Data Analysis	Undertake regular condition inspection and modelling of the road pavement and prepare the optimal works program
		Overall Asset Condition	6% of roads at condition 4 & 5	5.0% of roads at condition 4 & 5	Analysis of road condition data	Undertake regular condition inspection and modelling of the road pavement and prepare the optimal works program
	Availability	Road available not interrupted by road works	>90 % satisfaction rate	Unknown	Customer Service Requests relating to complaints about road works	Undertake carriageway and other repairs in such a way as to minimise occupation of road space

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
	Function	Meet user requirements for width, accessibility and traffic management	<5 per year	Unknown	Customer Requests Monitoring	Meet design standards
	Environment	Percentage of aggregated volume of construction and demolition waste generated by construction works that is re-used	>90%	80%	Percent of recycled road base used in road renewal & maintenance	Incorporate recycled road base in the pavement design
	Cost Effectiveness	Proactive scheduled maintenance	50% of proactive maintenance activities undertaken	Unknown	Percent of maintenance done by proactive repairs	Undertake regular condition inspection and provide maintenance program and reduce cost
Car Park	Quality	Provide adequate public parking to meet user needs	>70% surveyed customers satisfied with adequacy of public parking facilities	Unknown	Customer Satisfaction Survey	
	Safety	Provide car parking facilities free from hazards	<12 requests/complaints	Unknown	Customer Service Requests	Conduct programmed risk assessment as per specified Inspection frequency

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
	Condition	Average Asset Condition	Average condition of 1.2	Average condition of 1.6	Condition Data Analysis	Undertake regular condition inspection and modelling of the road pavement and prepare the optimal works program
		Overall Asset Condition	No car park at condition 4 & 5	12% of car parks at condition 4 & 5	Analysis of condition data	Undertake regular condition inspection and modelling of the road pavement and prepare the optimal works program
	Environment	Percentage of aggregated volume of construction and demolition waste generated by construction works that is re-used	>90%	80%	Percent of recycled road base used in road renewal & maintenance	Incorporate recycled road base in the pavement design
	Cost Effectiveness	Proactive schedule maintenance	80% of proactive maintenance activities	Unknown	Percent of maintenance done by proactive repairs	Undertake regular condition inspection and provide maintenance program

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
Road Structure	Safety	The provision of safe and functional road structure	80% compliance	Unknown	Risk Assessment	Conduct programmed risk assessment as per specified Inspection frequency
	Condition	Average Asset Condition	Average condition of 2.2	Average condition of 1.2	Condition Data Analysis	Undertake regular condition inspection and modelling of the footpath and prepare the optimal works program
		Overall Asset Condition	Maximum 11% of asset below condition 3	2% of roads are below condition 3	Analysis of condition data	Undertake regular condition inspection and modelling of the footpath and prepare the optimal works program
Road Furniture	Safety	The provision of safe and functional road furniture	80% compliance	Unknown	Risk Assessment	Conduct programmed risk assessment as per specified Inspection frequency
	Condition	Average Asset Condition	Average condition of 3.5	Average condition of 1.6	Condition Data Analysis	Undertake regular condition inspection and modelling of the road fur and prepare the optimal works program
		Overall Asset Condition	Maximum 40% of road furniture at condition 4 & 5	1.1% of road furniture are below condition 3	Analysis of condition data	
Footpath	Quality	Suitable network, with non-slip surface	<5 per year	Unknown	Customer requests	

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
	Safety	Provide network free from hazards and separated from vehicular traffic	<5 per year	Unknown	Customer requests	
			<2 per year	Unknown	Injury and damages claims	
	Condition	Average Asset Condition	Average condition of 2.0	Average condition of 1.8	Condition Data Analysis	
		Overall Asset Condition	Maximum 1.2% of footpaths at condition 4 & 5	1% of Footpaths at condition 4 & 5	Analysis of condition data	
	Function	Network linking with high use areas and of appropriate width and gradient	<10 per year	Unknown	Customer requests	
Accessibility	Footways are clear and accessible for disabled people and those with mobility difficulties	>90% satisfaction rate	Unknown	Annual Community Survey	Maintain footpaths to optimise with due regard with to cost, practicality, and the needs mobility difficulties of other users their convenience of movement for disabled people and those with mobility difficulties	
Kerb and Gutter	Safety	All roads have even and consistent kerb and guttering free from hazards	<10 per year	Unknown	Customer requests	Conduct programmed risk assessment as per specified Inspection frequency

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
	Condition	Average Asset Condition	Average condition of 2.6	Average condition of 1.8	Condition Data Analysis	Undertake regular condition inspection and modelling of kerb and Gutter assets and prepare the optimal works program
		Overall Asset Condition	Maximum 16.4% of kerb and gutter at condition 4 & 5	1.6% of kerb and gutter at condition 4 & 5	Analysis of condition data	
	Function	Barrier provides effective roadside drainage and prevents stormwater from entering properties	<10 per year	Unknown	Customer requests	
Bridge and Culvert	Capacity	Bridges are capable to carry the load of heavy vehicles	90%	Unknown	Data Analysis	Bridge load rating test to be carried out to determine the load capacity
	Condition	Average Asset Condition	Average condition of 2.2	Average condition of 1.4	Condition Data Analysis	Undertake regular condition inspection and modelling of bridge assets and prepare the optimal works program
		Overall Asset Condition	Maximum 11.6% of bridge/bridge components at condition 4 & 5	0.1 % of bridge/bridge components at condition 4 & 5	Analysis of condition data	It is estimated that current funding is sufficient to retain current LOS for the next 20 years
	Quality	Provide reliable and safe access and connectivity	<20 complaints per annum	Unknown	Customer Service Requests in regards to bridges	

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
All Assets	Appearance	Streets and associated assets in clean and presentable condition	>75% customer surveyed satisfied with street furniture and other assets	Unknown	Annual Community Survey	
	Responsiveness	All works relating to road and transport assets are completed with agreed timeframes depending on task and rating as specified in risk register and maintenance plan	90% of work identified completed within designated response times	80%		Rating 1 responds to request within 24 hours and make safe as soon as practical. Repair within 7 work days.
						Rating 2 responds to request within 24 hours and make safe as soon as practical. Repair within 6 months.
						Rating 3 responds to request within 48 hours and make safe as soon as practical. Repair within 6-18 months depending on risk assessment.
						Rating 4 respond to request within 10 workdays, prioritise and program work annually depending on condition rating and availability of resources.
	Financial Sustainability	Road and Transport assets are managed for future generations	Asset Renewal Ratio 87%	Asset Renewal Ratio 90%	Annual Budget Expenditure Review	Target cannot be met with funding shortfall
Projects are delivered within budget		100%	Unknown	Percentage of projects completed within 5% of commit to build budget		

External (Community Based) and Internal (Operations Based-Technical)						
Service Area	Key Performance Indicator	Level of Service	Target Performance	Current Performance	Performance Measure Process	Comments
	Efficiency	Percentage of written enquiries respond to within seven days	100%	80%	Audit of customer service request	

3. FUTURE DEMAND

3.1. Demand Forecast

3.1.1 Technological Change

Table 3.1.1.1 Changes in Technology and Forecast effect on Service Delivery

Technology Change	Effect on Service Delivery
Change in construction methods and the materials used	May increase the life of asset components, reducing the susceptibility to damage, or by reducing the cost of construction or maintenance.
Management Technology	Knowledge of assets, component, lives and costs is continually being improved.
Deep Lift pavements	Potential for greater efficiencies and lower road renewal costs over conventional reconstruction techniques.
Use of PMB interlayer seal before asphalt overlay	Prevent reflection cracking on the newly laid asphalt surface.
Pavement recycling methods	Less reliance on virgin material – resulting in less haulage of material and disposal. Potential for greater efficiencies and lower road renewal costs over conventional reconstruction techniques.

Technological advances will increase the asset inspection efficiencies by minimising double handling of information and better managing our data. This information includes asset physical parameters and condition. Council has already embraced new technology which consists of asset data capture by video inspection and the transformation of this data on to Council’s GIS.

3.1.2 Increased demand for asset renewal and maintenance

The table below indicates that there has been a minimal increase in new road assets from over the past 3 years. These figures have been averaged out to provide some long-term estimates that can be used in determining the likely impact on future, renewal, maintenance and operations costs.

Financial Year	Asset Value ('000)
2008/2009	\$1,300
2009/2010	\$1,500
2010/2011	\$4,973

The above figures indicate an average annual growth rate of 0.2 % for the road and transport assets. Using this growth rate as guide, this predicted growth will add another 4% assets to the current road and transport portfolio in the next 20 years.

As the growth rate is only 0.2%, the additional maintenance cost and operating costs resulting from these new assets are not included in the financial projections.

Further research is required on projections of growth and the possible impact of this growth and change. This will be considered as part of the improvement plan for the total asset management plan. On this basis this plan does not allow for accelerated asset consumption or usage.

3.1.3 Change in community expectation

Demand for new services will be managed through a combination of managing existing assets, upgrading and replacing existing assets as given in the renewal plan. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 3.1.3.1. Further opportunities will be developed in future revisions of this Roads and Transport Asset Management Plan.

Table 3.1.3.1: Demand Management Strategies Summary

Service Activity	Demand Management Strategies
Increased traffic volume on road network due to population growth.	<ul style="list-style-type: none"> • Promote public transport around residential and commercial areas • Improve connectivity of public transport system and develop/improve cycle routes • Introduce new or modified traffic control system at congested places • Upgrade/Extend existing major routes to cope with traffic loading • Allocation of capital expenditure on creation of new assets and upgrade of existing assets
Development of new residential and commercial areas.	<ul style="list-style-type: none"> • Increase in maintenance budget with road network expansion • Ensure adequate capital asset renewal funding in long term financial budget plans
Road use by industries.	<ul style="list-style-type: none"> • Encourage industries to be near state controlled roads or connect the industry to major roads by upgrading local roads • Entry restriction for lower class roads to maintain life cycle cost • Support alternative delivery and access arrangement for local business activities

4. RISK MANAGEMENT

In order to establish those risks that will be covered by the risk management program a table has been developed showing sources of risk, their potential impacts, current controls and action plans (refer to Table 4.1). The risk register has established the responsibilities of the relevant departments (City Assets and City Works) and person.

This table will be further developed, as the sources of risk become better understood.

Table 4.1: Roads and Transport Asset Risk Register (to use this sheet refer to Generic Asset Management Plan - Section 1: Table 4.1, 4.2, 4.3 and 4.4)

Assets at Risk	Hazards	Risk (what can happen?)	Likelihood	Consequence	Risk Score	Current Controls	Are Existing Controls Adequate?	Action Needed	Responsibility
Road Pavement	Pothole	Pothole causes damage/injury	4	3	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Rutting	Rutting causes damage/injury	3	4	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Bleeding, Stripping	Smooth surface and loose stone on roads causing damage/injury	3	4	12	Repaired after receiving request from resident and council staff	No	More quality checks required during construction of bituminous works and regular cleaning of streets	Manager City Works
	Design and construction	Injury caused by poor design and construction	3	4	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Shoving	Shoving causes damage/injury	3	4	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Heavy and Overweight Vehicle	Damage of pavements/bridge/culvert	3	4	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Flooding	Flooding causing damage to road assets	3	4	12		Unknown	Consider suitable design at flood prone areas	Manager City Assets
	Depressions	Depression causes damage/injury	3	4	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Pavement Condition	Poor road condition causes damage and injury	3	3	9	Undertake modelling of the road pavement and prepare the optimal works program	No	Modelling of road pavement to be carried out to predict expenditure required to keep road pavement in current condition	Manager City Assets
	Road Opening	Damage/injury caused by Road opening and delay in permanent restoration	4	4	16	Some restored within three months	No	Monitor road openings. Maintain/introduce records of damage/injury due to road opening	Manager City Assets

Assets at Risk	Hazards	Risk (what can happen?)	Likelihood	Consequence	Risk Score	Current Controls	Are Existing Controls Adequate?	Action Needed	Responsibility
Car Park	Damaged kerb or path or pavement	Trip and injury	2	3	6	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Assets
	Substandard layout	Vehicles may collide more frequently than expected due to substandard design elements	2	1	2	Repaired after receiving request from resident	No	Design of car parks undertaken in accordance with Austroads Guidelines and Australian Standards where designed by Council	Manager City Assets
	Car park renewal	Deteriorate to poor condition	3	3	9	Undertake modelling of the car park pavement and prepare the optimal works program	No	Modelling of car park pavement to be carried out to predict expenditure required to keep road pavement in current condition	Manager City Assets
Footpath	Stepping	Trip and fall	4	4	16	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Concrete footpath is raised, cracked or broken	Trip and fall	4	3	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Overall Footpath Condition		2	5	10	Only asphalt footpath is replaced due to poor condition	No	Replace footpaths in poor condition that are below level of service as specified in AMP	Manager City Works
Footpath and Cycleway	Trips - Path user trips and injures themselves on damaged path surface		4	4	16	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Cracked, broken and damaged path - Path user trips and injures themselves on damaged path surface		3	4	12	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works

Assets at Risk	Hazards	Risk (what can happen?)	Likelihood	Consequence	Risk Score	Current Controls	Are Existing Controls Adequate?	Action Needed	Responsibility
	Overhanging Vegetation	Path user may hit in the upper body by overhanging vegetation	5	2	10	Pruning after receiving request from resident		Implement annual risk inspection program	Manager City Assets
	User Conflict	Use of share paths by cyclists and pedestrians may result in conflict and collision	5	2	10			Signage on paths indicating right of way	Manager City Assets
	Overall Condition	Asset Value decrease at greater than acceptable rate	2	5	10	Replacement of footpath on reactive basis	No	Replace footpaths in poor condition that are below level of service as specified in AMP	Manager City Assets
Kerb and Gutter	Vertical & Horizontal displacement	Damage/Injury	4	5	20	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Cracked or broken bay	Damage/Injury	3	5	15	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Works
	Kerb and Gutter Condition		2	5	10	Kerb and gutter in poor condition only replaced in conjunction with road upgrading works	No	Replace kerb and gutter which is below level of service as specified in AMP	Manager City Assets
Bridge and Culvert	Clean and clearing of debris		3	2	6	The work is carried after receiving request from the resident	No	Annual works program to be prepared from inspection	Manager City Assets
	As per defects defined in Vic Roads Bridge Inspection Manual		3	3	9	The work is carried after receiving request from the resident	No	Annual works program to be prepared from inspection	Manager City Assets
	Bridge Condition	Deteriorate to poor condition	3	3	9	Bridge Asyst software is used to evaluate OBC for each bridge and culvert and found all structures are below target condition	No	Load rating to be carried out to determine the load carrying capacity of the structures	Manager City Assets

Assets at Risk	Hazards	Risk (what can happen?)	Likelihood	Consequence	Risk Score	Current Controls	Are Existing Controls Adequate?	Action Needed	Responsibility
	Drowning	Person falls from jetty or bridge	4	4	16	Appropriate edge protection (rails, kick boards etc) provided. Warning signage erected.	Yes		Manager City Assets
Road Furniture	Damaged road furniture	Trips - Member of the public trips on an item of road furniture and injury results.	2	3	6	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Assets
	Collision	Road user collides with an item of street furniture				Wherever possible frangible street furniture is used. Wherever possible street furniture is located outside of the clear zone	Yes		Manager City Assets
	Vandalism	Street furniture is vandalised	2	3	6	Inspections & Graffiti removal program	Yes		Manager City Assets
	Overall Condition	Asset Value decrease at greater than acceptable rate	2	5	10	Replacement of road furniture on relative basis	No	Replace road furniture in poor condition that are below level of service as specified in AMP	Manager City Assets
Road Structure	Damaged road structures	Trips - Member of the public trips on an item of road structures and injury results	2	3	6	Repaired after receiving request from resident	No	Implement annual risk inspection program	Manager City Assets
	Collision	Road user collides with an item of road structures	2	5	10	Replacement of road structure on relative basis	No	Replace street furniture in poor condition that are below level of service as specified in AMP	Manager City Assets

Assets at Risk	Hazards	Risk (what can happen?)	Likelihood	Consequence	Risk Score	Current Controls	Are Existing Controls Adequate?	Action Needed	Responsibility
All Assets	Inadequate funding	Inadequate funding leading to increasing prevalence of asset failures	4	3	12	Replacement of assets based on current funding	No	Improve asset management & planning and allocate appropriate funding	Executive Manager - CSD
	Poor Design and Construction	Injury caused by poor design and construction	4	3	12	Some design check in place	No	Adopt more rigorous design to ensure that standards are achieved for design and documentation. Implement quality control & quality assurance processes in construction. Establish post construction review with design	Manager City Assets and City Works

5. LIFE CYCLE MANAGEMENT PLAN

5.1 Objective

The principle aim of road and transport assets can be summarised as:

To provide a road network that is suitable for the effective and efficient movement of vehicles and people, having a suitable all weather surface that is appropriate to its location and function in terms of skid resistance, noise reduction and smoothness and has a structure suitable for legal traffic loading requirements

5.2 Asset Inclusions and Exclusions

5.2.1 Inclusions

The assets covered by this plan are shown below.

- Pavements
- Footpaths and Cycleway
- Kerb and Gutters
- Car Parks
- Bridge and Culverts
- Road Structures (ie. Line marking & traffic calming devices)
- Road Furniture (i.e. Bus Shelter, Seats, Bins, Pedestrian fencing, Signs)

5.2.2 Exclusions

- Traffic Lights
- Street Lights

5.3 Life Cycle Issues

Some of the key life cycle issues that affect road and transport assets are:

- Settlement and damage from substandard materials used during construction or maintenance
- Settlement and damage due to expansive sub-grade materials
- Increased traffic volume and load
- Tree roots

- Insect attack
- Vandalism/ terrorism
- Road reinstatement by other organisations
- Occupier misuse or abuse
- Over use
- Poor design
- Weed intrusion

5.4 Hierarchy

Road and transport assets in all hierarchy levels are important to service delivery and must, at the very least, meet all regulatory compliance requirements as well as minimum standards acceptable to the community. A hierarchy has been developed to classify road and transport assets, in recognition of the fact that these assets perform a range of functions and have differing levels of importance. A key objective of creating this hierarchy was to achieve more efficient management of road and transport assets, with potential to allow, where appropriate, different delivery standards to be applied across relevant levels.

The hierarchy has been used to prioritise spending on the audit of Council road and transport assets. Those considered to have a higher level of importance for service delivery were the subject of a more comprehensive audit. Implementation of the recommendations in this plan will allow the hierarchy to be used as one of a suite of tools that inform lifecycle management decisions such as:

- Identifying capital expenditure priorities (renewal, upgrade, disposal);
- Determining the frequency of road and transport inspections; and
- Determining the frequency of routine maintenance activities.

The adopted asset Hierarchy is defined in the following tables:

Road Hierarchy	Length (km)	Description
Regional	69.1	Provides the link between the arterial (State) road and the council road system.
Collector	87.2	Provides both a traffic mobility function as well as a property access function. Generally providing the link between the regional and local road.
Local	424.5	The prime function of the road is access to abutting properties, and minor movements to other properties within a local area.
Cul-De-Sac	92.7	The main function of this road is access to abutting properties and is a no through road.

Footpath Hierarchy	Description
High Usage Paths (H)	These are areas of high traffic surrounding shopping centres, hospitals, bus and train terminals, schools community centres and industrial areas.
Medium Usage Paths (M)	The pathways that link major centres and channel pedestrian traffic from neighbourhoods to community attractions, sporting venues and parklands.
Low Usage Paths (L)	These paths take the pedestrians from their residential streets to major centres. Consists mainly of local pedestrians.

Kerb and Gutter Hierarchy	Length (km)	Description
High (H)	290	These are areas of high traffic surrounding shopping centres, hospitals, bus and train terminals, schools and community centres.
Medium (M)	98	Regional roads and all kerb and gutters in parklands and sporting venues.
Low (L)	823	All other streets and areas.

5.5 Asset Description

Fairfield City Council manages 677 kilometres of road, 1,211 kilometres of kerb and gutter, 800 kilometres of footpath and 77 bridges/culverts. The total replacement value is in the order of \$640 million. Generally road and transport assets have been broken down into the following asset components for condition assessment, maintenance and renewal works and expenditure forecasts.

Asset Class	Roads and Transport						
Asset Group	Road Pavement	Footpath and Cycleway	Kerb and Gutter	Road Structure	Road Furniture	Bridges/ Culverts	Car Parks
Asset Type	Road Pavement	Concrete Footpath	Barrier Kerb	Kerb Blisters	Seat	Footbridge	Off road car park
	Road Surface	Asphalt Footpath	Roller Kerb	Planter Box	Bus Shelter	Road Bridge -Super Structure	On road car park
		Brick Footpath	Kerb Only	Raised Pedestrian Crossing	Sign	-	Building car park
		Gravel Footpath	Dish Drain	Refuge Islands	Guard Rail	Substructure -Foundation -Railing	Open space car park
				Seagull Islands	Fence	Culvert	-Pavement -Surface
				Speed Hump	Bin		
				Thresholds	Retaining Walls		
				Wombat Crossings	Bollard		
					Banner Poles		
					Notice Board		

Asset Class	Roads and Transport						
				Roundabout-Asphalt			
				Roundabout-Concrete			
				Rubber Cushions and Islands			

5.6 Physical Parameters

5.6.1 Asset Capacity and Performance

This information is not currently available and will be included in subsequent AMPs. Testing of road pavement will determine the performance and capacity of the asset over time.

5.6.2 Asset Condition

Results included in the following table were gathered through an audit of the road and transport assets by Council staff.

Condition is measured using a 1-5 rating system as defined in the Table 5.6.2.1 below:

Level	Condition	Description	% Life Consumed
1	Excellent	No work required (normal maintenance)	0
2	Good	Only minor work required	25
3	Average	Some work required	50
4	Poor	Some renovation needed within 1 year	75
5	Very Poor	Urgent renovation/upgrading required	100

Examples of road pavement assets are shown below:

Condition 1:
No work required (normal maintenance)



Condition 2:
Only minor work required



Condition 3:
Some work required



Condition 4:
Some renovation needed within 1 year



Condition 5:
Urgent renovation/upgrading required



Audit results for all road and transport assets are in the condition profile shown below:

Figure 5.6.2.2 –Condition Assessments on road pavements

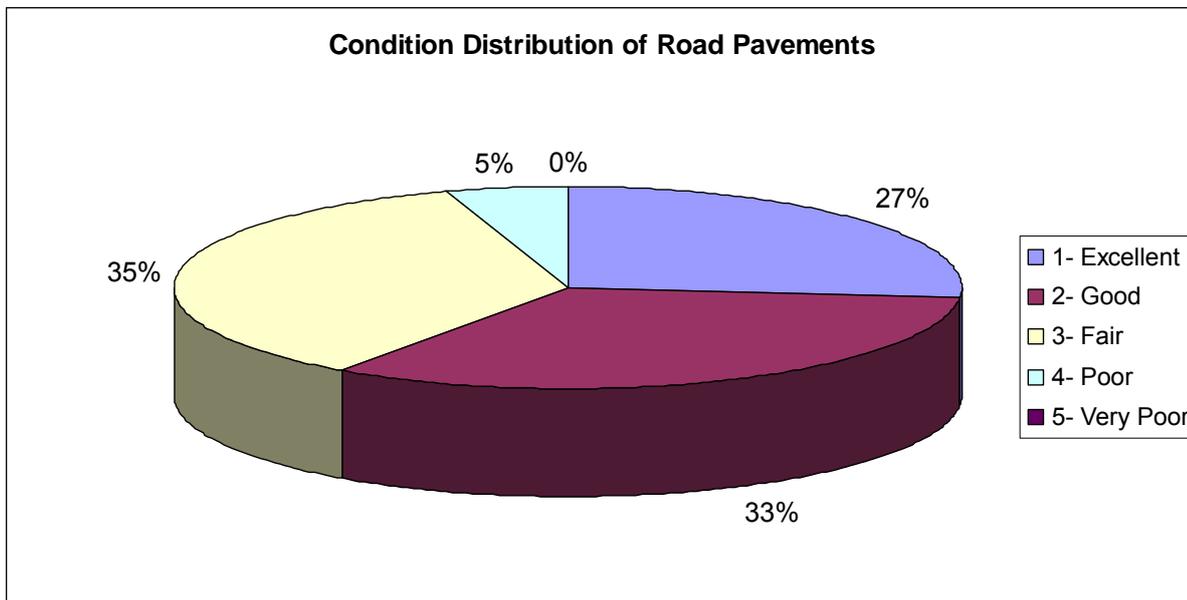


Figure 5.6.2.3 –Condition Assessments on kerb and gutters

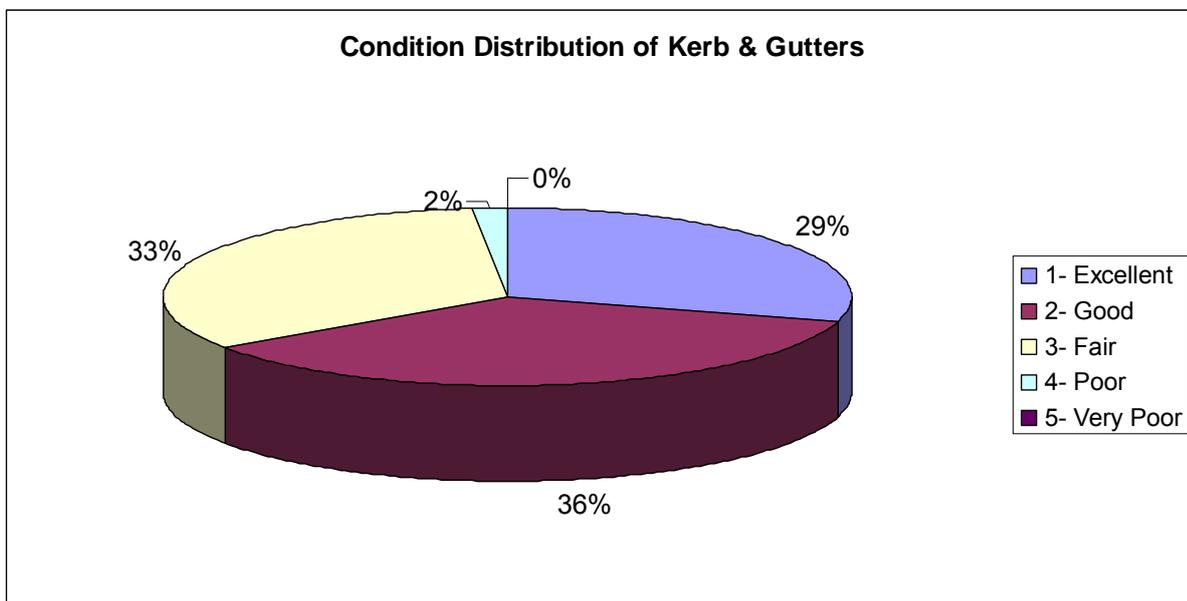


Figure 5.6.2.3 –Condition Assessments on footpaths

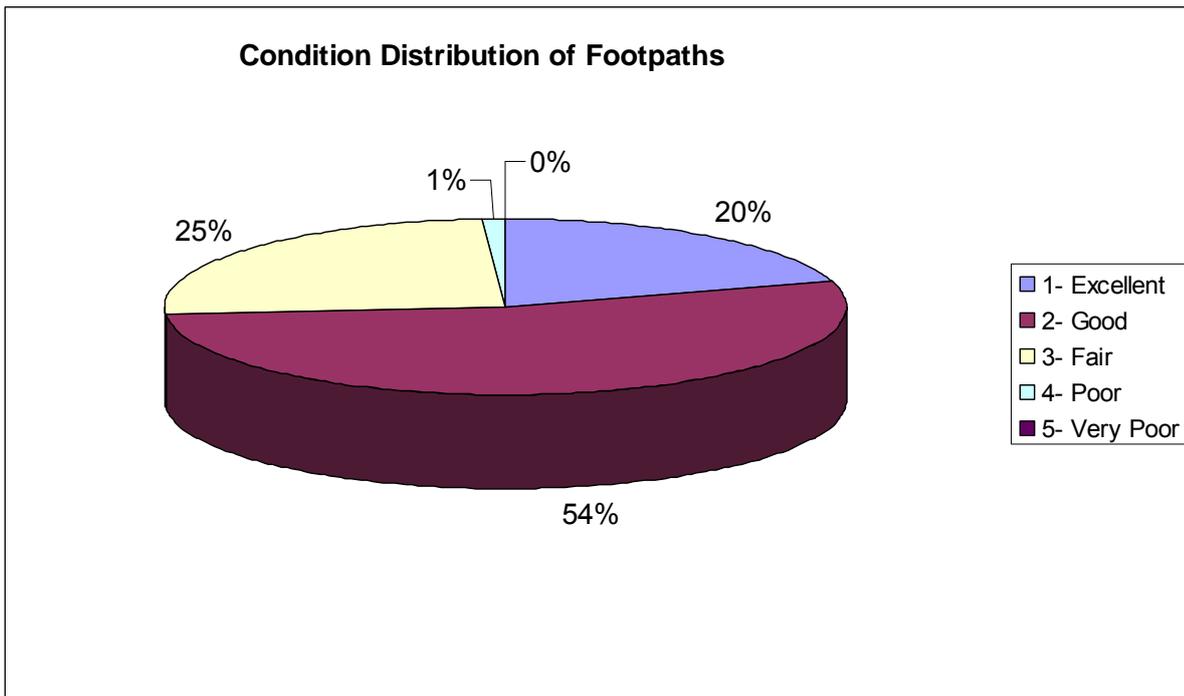


Figure 5.6.2.4 –Condition Assessments on bridges

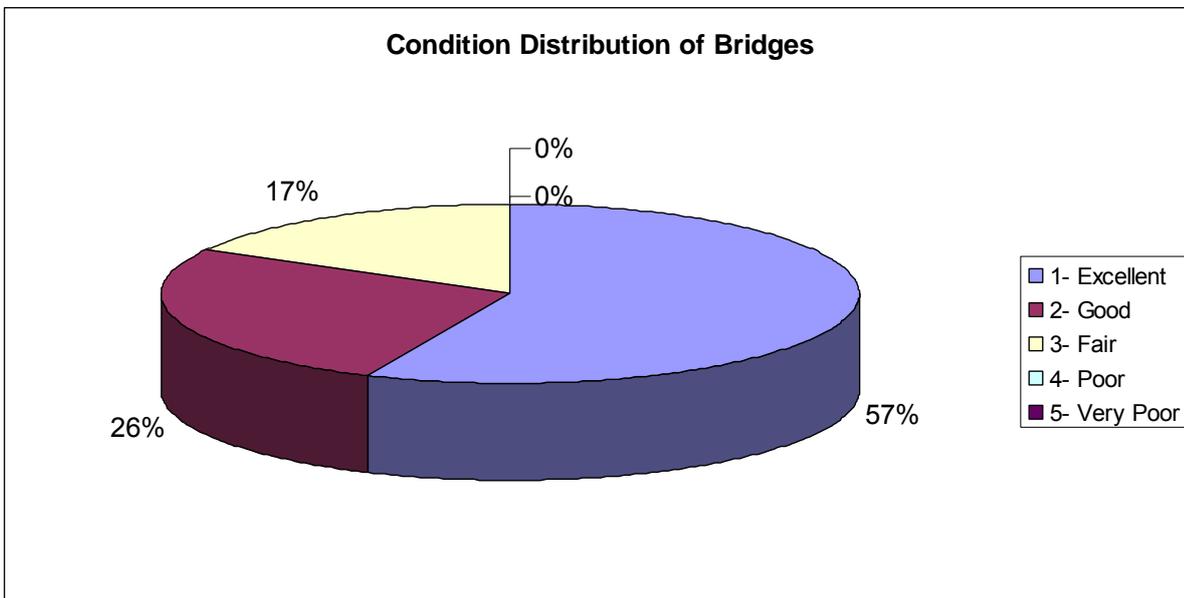


Figure 5.6.2.5 –Condition Assessments on car parks

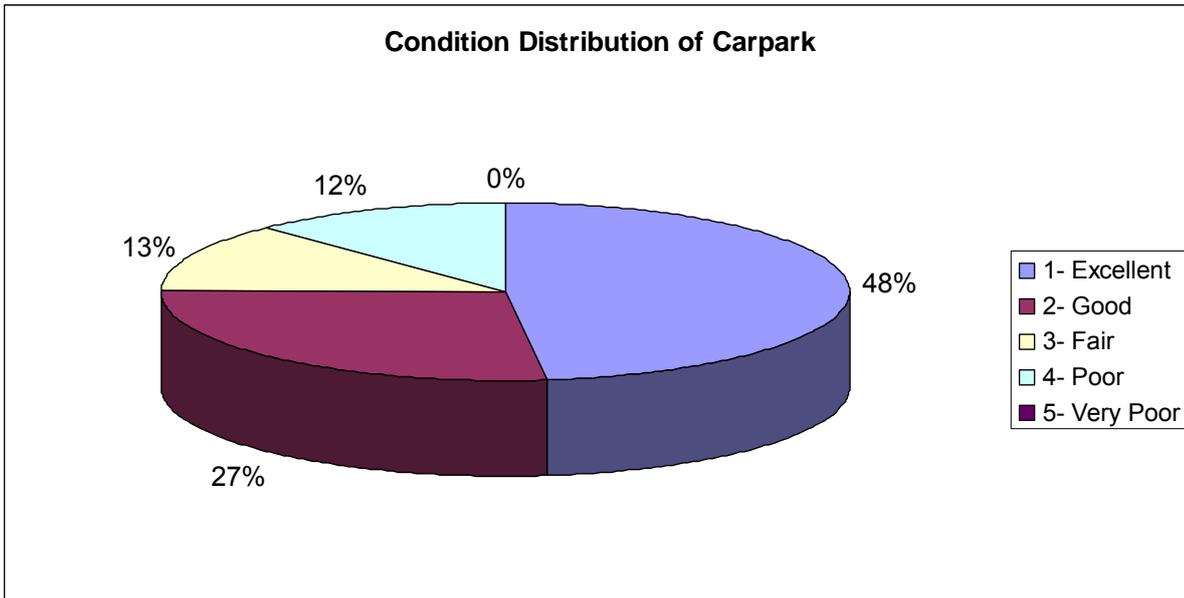


Figure 5.6.2.6 –Condition Assessments on road structures

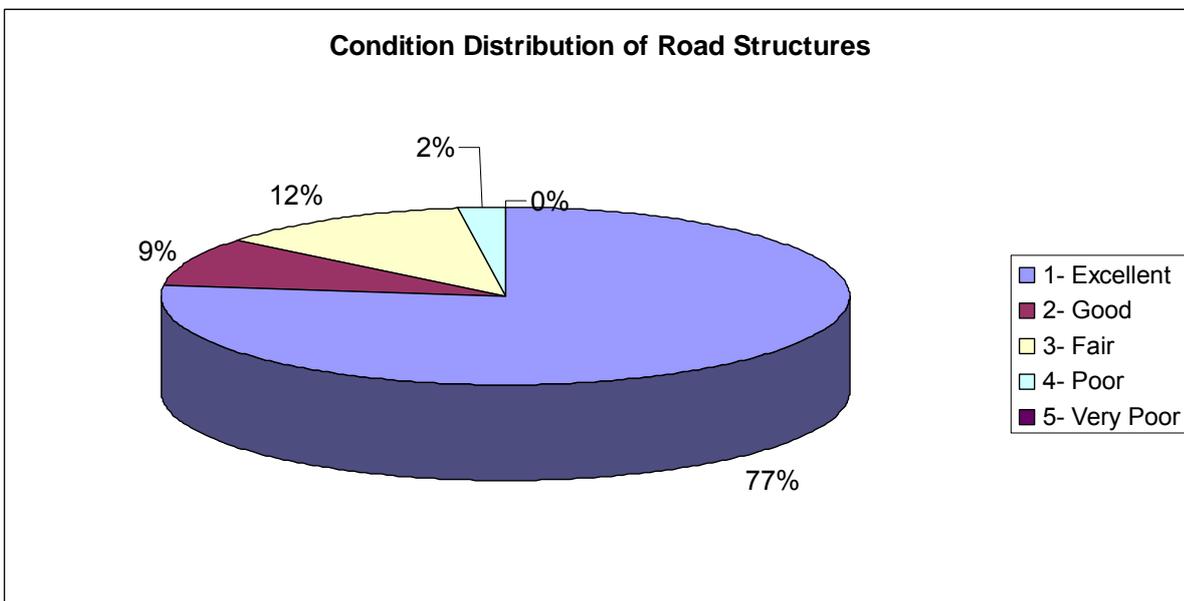
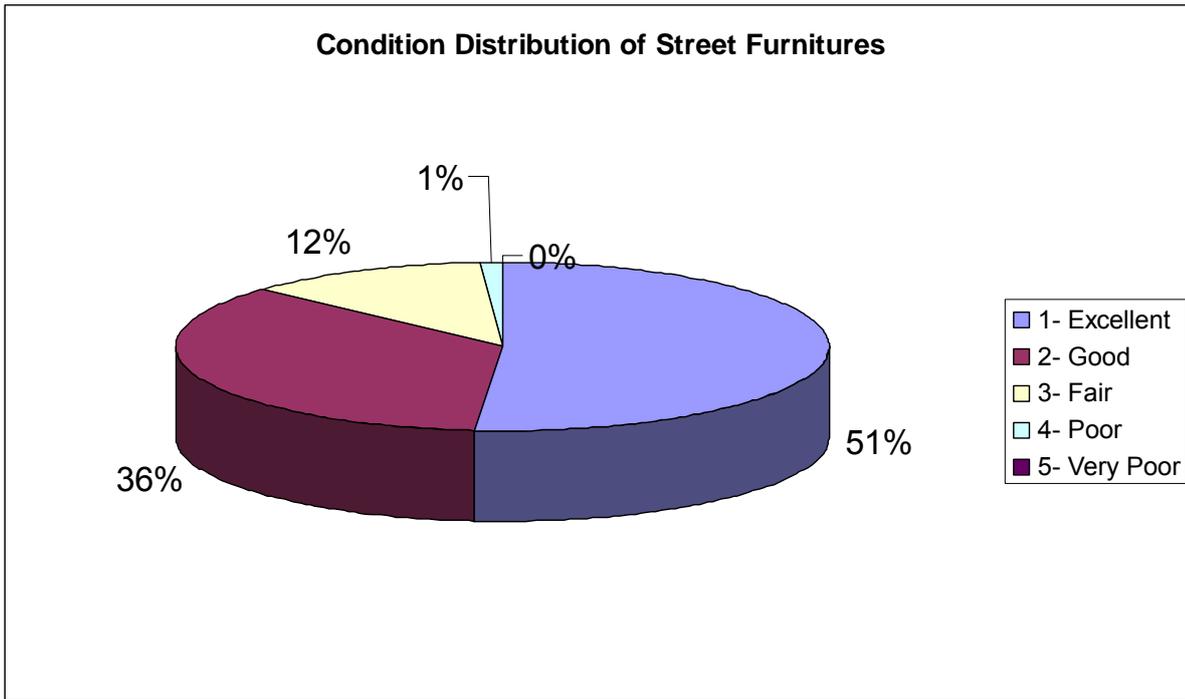


Table 5.6.2.6 –Condition Assessments on Street Furniture



5.5 Asset Valuation

Valuation of Council’s road and transport assets was undertaken by the Council and audited by the External Party in June 2010. For the purpose of this plan, the replacement costs stated will be those derived from the 2010 assessment plus the asset value from the creation of assets in 2010 and 2011. A summary of replacement cost and written down value is detailed in Table 5.1.1 below.

Table 5.1.1: Asset Valuation

Asset Group	Current Replacement Cost (\$000)	Accumulative Depreciation (\$000)	Depreciated Replacement Cost (\$000)
Road & Transport Assets	\$695,505	\$149,409	\$546,096

* Annual depreciation \$11,442,000

5.5.1 Asset Useful Life

The useful life of an asset is defined as a period over which an asset is expected to be fully utilised.

The useful life used in this Asset Management Plan is detailed in table 5.5.1.1 which was agreed and audited by the External Party during the valuation of Council’s assets in 2009/2010. Useful life was derived from the following sources:

- International Infrastructure Management Manual (IPWEA, 2006)
- Council’s experience with similar assets
- Other Councils’ Road Asset Management Plans

Road and Transport Assets	Type	Useful Life (years)
Road Pavement	Pavement	100
	Asphalt	30
	Spray seal surface	15
Car Park	Pavement	60
	Asphalt	30
	Spray seal surface	15
Footpath and Cycleway	Concrete	30
	Asphalt	15
Kerb and Gutter	All	80
Bridge and Culvert	Superstructure	100
	Substructure	100
	Foundation	100
	General/Guard/Hand Railing	50
Road Furniture	All	20
Road Structure	Roundabout	100
	Median Island	80
	Other traffic facilities	30

5.6 Historical Expenditure

The historical expenditure over the past three years is detailed in Table 5.1.2.

Table 5.1.2: Historical Expenditure

	2009/2010	2010/2011	2011/2012
Operation	\$120,000	\$120,000	\$90,820
Maintenance	\$5,893,00	\$4,393,000	\$3,719,000
Renewal	\$10,120,000	\$10,820,000	\$9938,000

Analysis of historic maintenance cost data shows that the cost of maintaining one kilometre of road pavement within the Fairfield City Council is currently averaging \$22,500 per km per year

5.7 Life Cycle Activities

5.7.1 Operations

Operational activities keep the asset utilised but have no effect on condition. Typical operational activities can include but are not limited to the cleaning kerb and gutter cleaning, asset inspection, asset management software maintenance.

5.7.2 Maintenance

Maintenance activities are those routine works which keep assets operating to the required service levels. They fall into two broad categories:

1. *Planned Maintenance (proactive)*

Maintenance works planned to prevent asset failure and deterioration. Typical planned maintenance activities include:

- Pothole repair, minor heavy patching, footpath repair etc

2. *Unplanned Maintenance (reactive)*

Maintenance works carried out in response to reported problems or defects. Typical unplanned maintenance activities include:

- Footpath Grinding, Bridge railing painting, pavement rejuvenation etc

5.7.2.1 Maintenance Standards

Road and Transport asset maintenance standards are a set of performance criteria to the agreed service standard and future maintenance needs of all assets. They form the basis of the minimum level of service for the road and transport network.

These standards allow the Manager City Assets to develop a plan that determines the level of maintenance needed based on the agreed service standard for all road and transport assets. The agreed standard will determine the level of service.

Each asset will be allocated a hierarchy to identify the maintenance standard that is required for that particular asset. Maintenance standards, conditioning auditing and frequency of servicing/maintenance will vary depending on the importance of an asset.

The actual asset condition will be compared against the desired maintenance standard, or in the case of legislation the required maintenance standard. Variations from the standard that are identified will form part of the planned corrective and maintenance plans.

The current maintenance standards for various assets are detailed in the maintenance plan in **Appendix 1**.

5.7.2.2 Maintenance Strategy

Maintenance strategies include:

- Prevent premature deterioration or failure of assets
- Deferring minor maintenance work if road pavements are due for rehabilitation.
- Ensuring all defects are rectified before road pavements is resurfaced
- Ensuring all assets maintained to deliver the desired levels of service.

Maintenance works are prioritised based on the following factors:

- The safety of road users

- If it is likely that the area of distress may expand
- Renewal work depends on the planned maintenance works
- Asset and road hierarchy
- Statutory regulation
- Executive priority

Maintenance Specifications

Maintenance work is carried out in accordance with the Council's Specification, including various referred Australian Services standards and specifications

5.7.2.3 Maintenance Program

Both planned and unplanned maintenance is undertaken as a result of either proactive inspection by Council staff or after receiving a request from customer.

For the purpose of modelling future funding needs, current funding levels will be taken as the base requirement.

A maintenance plan (**Appendix 1**) is a part of this Asset Management Plan. The plan describes the timing of activities such as inspection and other works to be undertaken on a road or transport asset. This process will assist us to determine future maintenance costs.

5.7.2.4 Maintenance Service Provision

Fairfield City Council currently uses a mixture of its own staff and external contractors for the provision of road and transport asset maintenance services.

5.8 Renewal Plan

Renewals

Renewal work is the replacement of an asset or a significant component to restore its original size and capacity. Typical road and transport asset renewal works include followings:

- Road resurfacing
- Footpath replacement
- Sign replacement

5.8.1 Renewal Strategy

Renewal/replacement strategies are determined on the basis of:

- **Risk** – where the risk of failure and associated safety, financial and commercial impact justifies action;

- **Asset performance** – when the asset fails to meet the required level of service; and
- **Economics** – when it is no longer economic to continue repairing the asset (that is, the annual cost of repairs exceeds the annualised cost of renewal).

Current renewal expenditure on Council's road and transport assets is \$9,940,000 which equates to approximately 1.4% of total replacement cost (\$696million).

This asset management plan enables Council to holistically manage its road and transport assets through the development of annual renewal program based on systematic analysis. Implementation of the annual renewal program requires a commitment of funds to deliver the level of service identified by the Community and adopted by Council.

All renewal works are prioritised based on the following criteria:

- Asset hierarchy
- Maintenance standard
- OHS obligations
- Statutory obligations
- Overall condition
- Environment impacts
- Future impact on other asset
- Costs

Renewal Specifications

Maintenance work is carried out in accordance with the Council's Specification, Auspac including various referred Australian Services standards and specifications

Council's Renewal Works Program

A Four Year Renewal Works Program of road and transport assets are listed in Appendix 3. This project list is subject to change.

5.8.3 Renewal Expenditure Forecasts

Data has been gathered and entered into approved (industry standard) software to provide a (20) year financial analysis. The objective of the analysis is to model the deterioration of the road and transport network in order to determine asset performance and renewal needs over the next twenty years.

Four different funding scenarios have been modelled and the results plotted on a graph showing the relationship between renewal budget and its effect on future network condition.

The assessment also incorporates Council’s long term financial plan projections and assumptions about asset performance and rates of deterioration.

These four “what if” scenarios cover the expenditure required for renewal works programs which include replacement of road & transport assets or its components.

The scenarios are described as follows:

Scenario 1: Maintain Current Expenditure

Renewal Expenditure (\$9.9M) – Impact on Road and Transport Assets

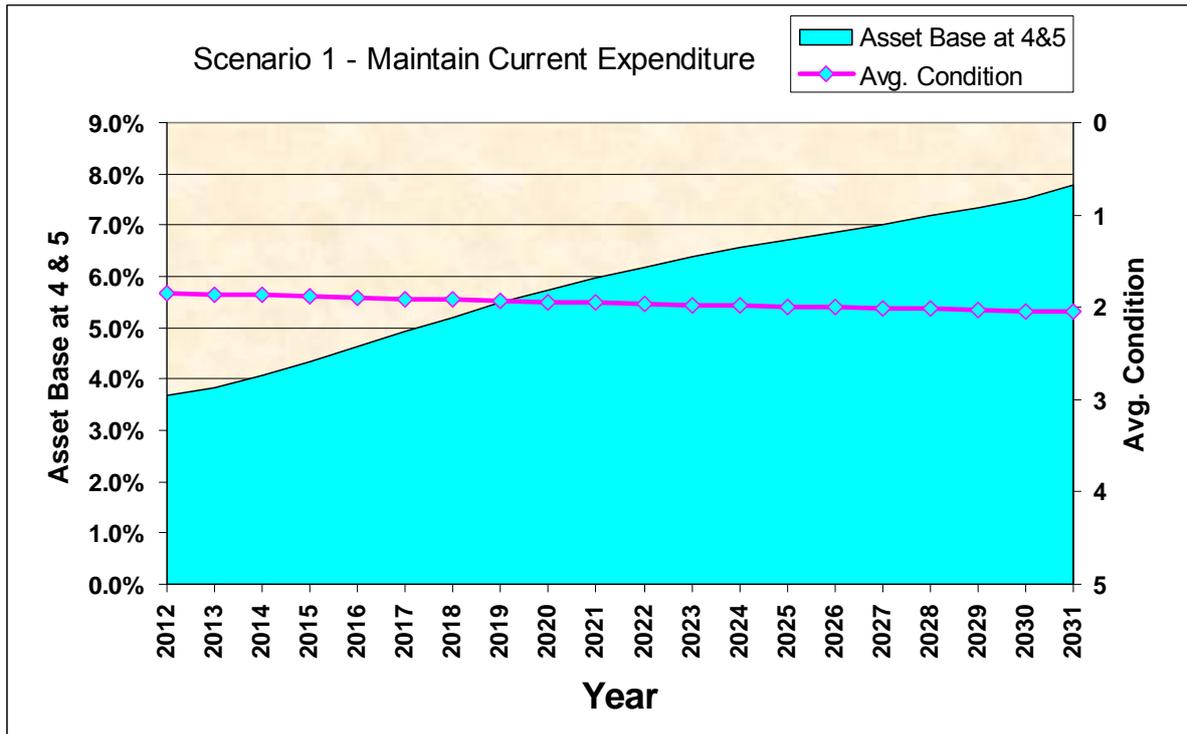


Figure 5.8.3.1 – Scenario 1

This scenario shows that the average road & transport asset condition will fall from 1.8 to 2.1 and asset base at condition 4 & 5 will rise approximately 8% by 2031 with the current level of expenditure

Scenario 2: Maintain Current Condition

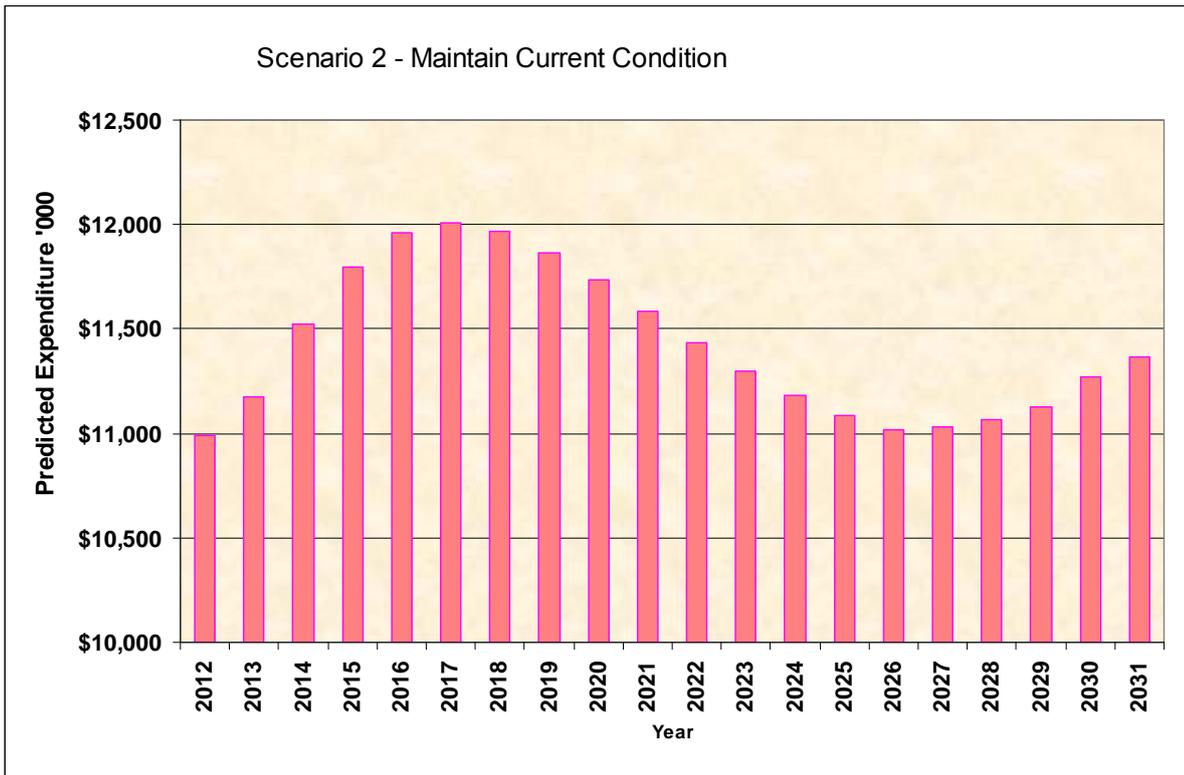


Figure 5.8.3.2 – Scenario 2

This scenario shows an estimated funding level required to maintain the current condition of road and transport assets over the next twenty years. An additional estimated amount of \$1,486,000 per annum is required to maintain the current condition. The existing asset backlog would remain the same

Scenario 3: Replace Assets at Condition 4 and 5

Maintain an Average Condition of 2 (or better)

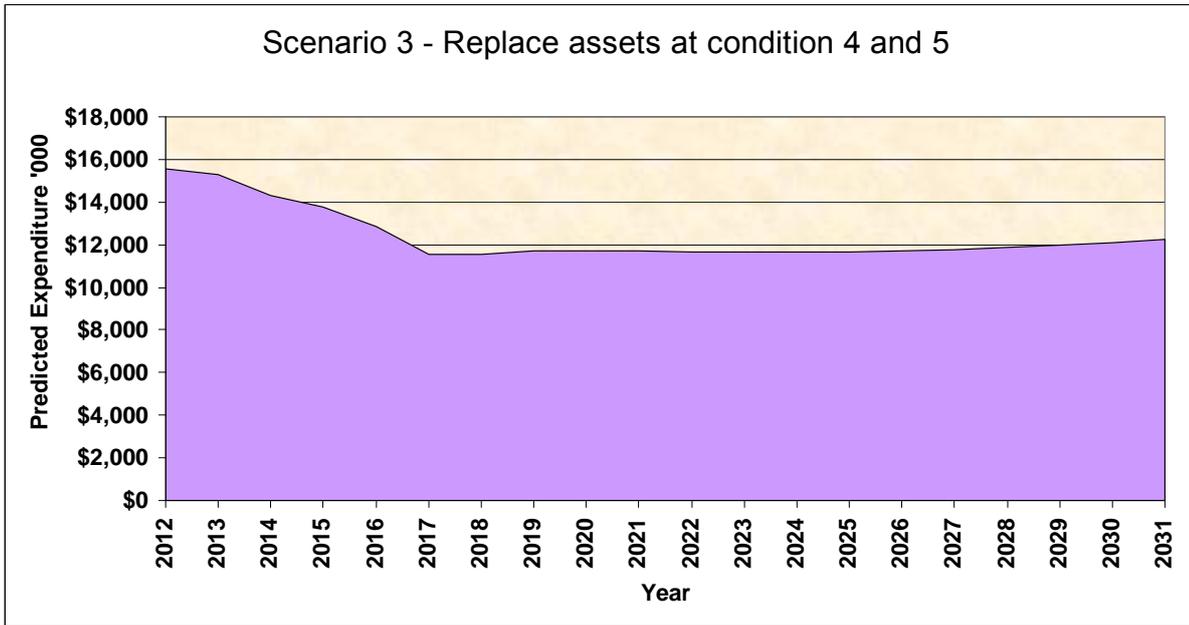


Figure 5.8.3.3 – Scenario 3

This scenario shows an estimated funding of \$248,330,000 is required to maintain an average condition 2 and replace all assets at condition 4 and 5 of over the next 20 years. This equates to \$12,417,000 per annum over the next 20 years.

A funding GAP between the current and proposed expenditure is \$2,479,000 per annum.

Scenario 4: Replace all Assets at Condition 5

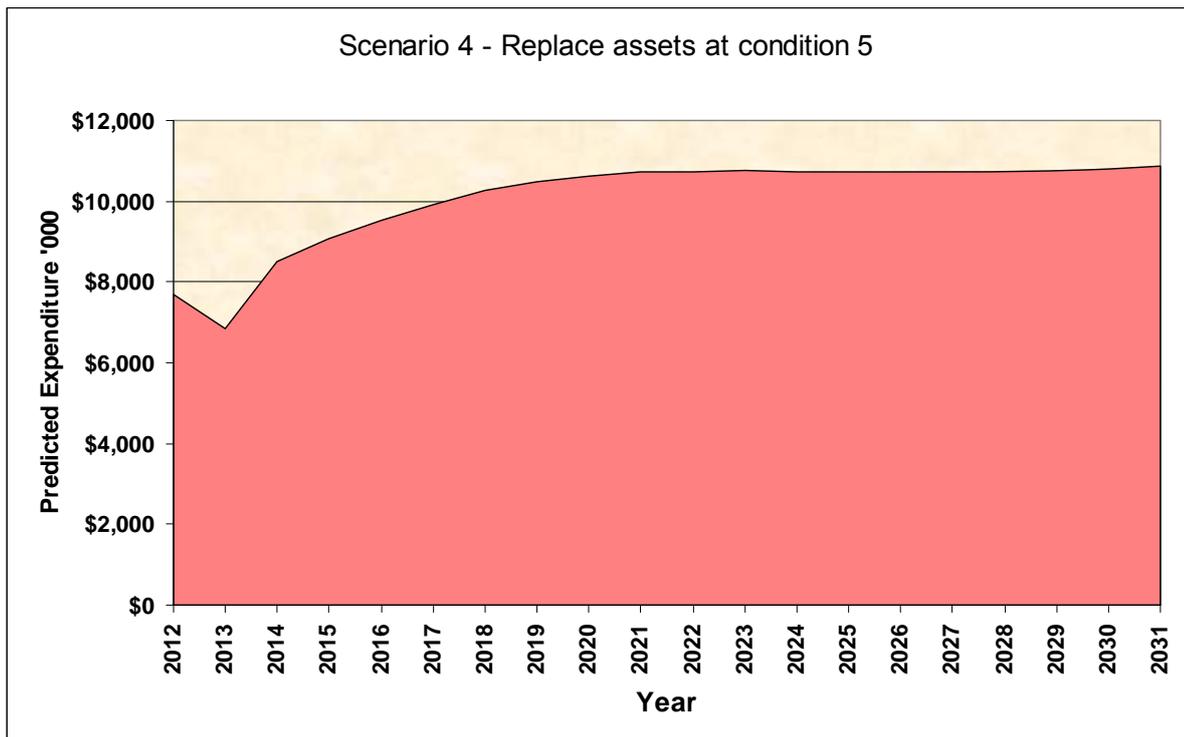


Figure 5.8.3.2 – Scenario 4

This scenario shows an estimated funding level required to replace all assets at Condition 5 over the next 20 years. An average additional estimated amount of \$124,000 per annum is required to replace all assets at condition 5. The current level of expenditure is approximately \$9.4 million.

5.9 New/Upgrade Works:

New/upgrade works involve the extension or upgrade of assets required to cater for growth or additional levels of service. New works create an asset that did not exist or extend an asset beyond its original size or capacity

5.9.1 New/Upgrade Works Strategy

Most of the road and transport assets in Fairfield are created as part of subdivisional activity. The constructions of new assets within new subdivisions are generally funded by the developers and must be constructed in accordance with the Council's Subdivisional Standards. On completion, provided the assets comply with the Subdivisional Standards, they are vested in the Council (i.e. Council takes over ownership). There are few capital expenditure implications with this type of asset creation, the more significant implications are maintenance and renewal related.

New works involve the extension or upgrade of Council's road and transport assets to cater for growth or additional levels of service. In Fairfield City these new/upgrade works are

mostly created as part of subdivisional activity in accordance with Council's Subdivisional Standards and generally are developer funded.

Other proposals for extension or new assets require the development of a Business Case. Fairfield City Council has developed a format for the submission of Business Cases to demonstrate alignment to the City Plan, life cycle costs, impacts on existing services/infrastructure, forecasted usage rates and analysis as to the need for the service.

Business Cases enable Council to prioritise projects and provide the necessary information to decide whether to proceed with the acquisition of a particular asset.

The projects funded by RTA and Federal Office of Road Safety are justified and prioritised on the basis of a benefit/cost analysis, which accounts for:

- The benefit to the road user for reducing delays in the time to travel along a given route.
- Vehicle operating cost savings.
- Safety benefits.
- Intangible benefits such as environmental issues (pollution, water quality, noise and vibrations)

All road and transport assets must undergo a whole of life analysis that will consider the impact of longer term renewal, maintenance as well as operating costs on Council's financial viability.

Where decisions are made to proceed with additional assets they will be included on asset management plans so that provision will be built in to future budgets to accommodate the expenditure.

5.9.2 Fairfield City Council – Capital Works Program and Funding Forecasts

Currently, work is being undertaken to identify and prioritise capital works programs to be included in subsequent Asset Management Plans.

Standards and Specifications

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal and will be the subject of a future revision.

Asset Disposal

Asset disposal involves assessment of strategic goals and the recognition that some assets may be underperforming or surplus to operating requirements. Disposal of assets may be recommended when:

- The asset is under utilised and surplus to Council service delivery
- Community consultation identifies that the asset is not providing a value for money service

- The asset is not aligned with corporate goals or the City Plan

Council has a number of road closures that it is seeking to undertake, however this process can be protracted and subject to Council resolution. A list of disposed assets will be included in future revisions of this asset management plan.

6. FINANCIAL FORECAST

6.1 20 Year Financial Forecasts

All asset expenditure has been considered and models developed.

The results are presented as four “*what if*” scenarios for the expenditure required for renewal, operation, maintenance and new/upgrade works over a twenty (20) year period.

This assessment also incorporates Council’s long term financial plan projections and assumptions about asset performance, rates of deterioration and funding requirements.

Below is an example of the expenditure categories and the actual expenditure for a single financial year (2011/12).

The scenarios are described as follows:

Scenario 1: Maintain current expenditure of \$18.40m.

This scenario includes the following categories of expenditure:

Expenditure Type	2011/2012
Operation	\$90,820
Maintenance	\$3,719,000
Renewal	\$9,938,000
New Works	4,973,000

Scenario 2: Maintain current condition

This scenario shows that an average additional funding of \$1,486,000 per annum is required to maintain the current condition of road and transport assets.

Table 2: 20 year expenditure forecast for Road and Transport

	Actual Expenditure	Predicted Expenditure																			
	2011/2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	9191	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Maintenance	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720
Renewal	9938	10994	11177	11520	11799	11959	12006	11965	11866	11732	11584	11436	11299	11180	11084	11015	11029	11068	11124	11273	11367
Upgrade/New Works	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973
Current Expenditure	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722
Predicted expenditure	18722	19778	19961	20304	20583	20743	20790	20749	20650	20516	20368	20220	20083	19964	19868	19799	19813	19852	19908	20057	20151
Funding GAP	0	-1056	-1239	-1582	-1861	-2021	-2068	-2027	-1928	-1794	-1646	-1498	-1361	-1242	-1146	-1077	-1091	-1130	-1186	-1335	-1429

Scenario 3: Maintain an average condition of 2 or better and replace all assets at conditions 4 and 5.

This scenario shows that an average additional funding of \$2,479,500 per annum is required to maintain an average condition 2 and replace all assets at conditions 4 and 5 roads and transport assets over the next 20 years.

Table 3: 20 year expenditure forecast for Road and Transport

	Actual Expenditure	Predicted Expenditure																			
	2011 / 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Maintenance	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720
Renewal	9938	15547	15314	14320	13766	12827	11575	11565	11738	11726	11696	11664	11642	11639	11658	11703	11773	11865	11976	12102	12237
Upgrade/ New Works	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973
Current Expenditure	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722
Predicted expenditure	18722	24331	24098	23104	22550	21611	20359	20349	20522	20510	20480	20448	20426	20423	20442	20487	20557	206449	20760	20886	21021
Funding GAP	0	-5609	-5376	-4382	-3828	-2889	-1637	-1627	-1800	-1788	-1758	-1726	-1704	-1701	-1720	-1765	-1835	-1927	-2038	-2164	-2299

Scenario 4: Replace all assets at condition 5.

Remove all assets at condition 5. This scenario shows that an average additional funding of \$124,000 per annum is required to replace all assets at condition 5 over the next 20 years.

Table 4: 20 year expenditure forecast for Road and Transport

	Actual Expenditure	Predicted Expenditure																			
	2011 / 2012	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Maintenance	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720	3720
Renewal	9938	7711	6854	8508	9056	9520	9921	10261	10494	10637	10714	10746	10751	10741	10726	10715	10714	10727	10757	10808	10878
Upgrade/New Works	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973	4973
Current Expenditure	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722	18722
Predicted expenditure	18722	16495	15638	17292	17840	18304	18705	19045	19278	19421	19498	19530	19535	19525	19510	19499	19498	19511	19541	19592	19662
Funding GAP	0	2227	3084	1430	882	418	17	-323	-556	699	-776	-808	-813	-803	-788	-777	-776	-789	-819	-870	-940

6.1.1 Financial Projection Discussions

Fairfield City Council has spent \$18.4 million in the 2011/2012 financial year on assets operation, maintenance, renewal and new works. There is a funding gap for various scenarios as shown above which raises an important question of where future funds will come from if Council's road and transport assets are to be sustained into the future

6.2 Key Assumptions

- All expenditure is stated in dollar values as at 30 June 2012, with no allowance made for CPI over the 20-year planning period.
- Maintenance allocations are based on maintaining current level of expenditure
- Assumptions have been made to average useful lives, these assumptions will be reviewed and the accuracy improved based on further analysis of asset deterioration.
- No disposal of assets is considered in the financial projection.

6.3 Funding Strategy

The focus of this Asset Management Plan is on identifying the optimum cost for each asset group necessary to produce the desired level of service. How the cash flow is to be funded is a matter for separate consideration as part of Council's funding policy review.

Current Funding sources available for these assets include:

Asset Type	Funding Source
Roads and Transport	Rates Federal Government Funding State government funding Private developer funded works Road & Maritime Services

6.4 Confidence Levels

The confidence in the asset data used as a basis for the financial forecasts has been assessed using the following grading system:

Confidence ratings for each asset group and/or sub-group

Asset Category	Confidence Rating							
	Qty	Cond	Age	Service Levels	Demand Forecasts	Lifecycle Management	Financial Forecasts	Overall Rating
Road and Transport Assets	B	C	C	B	C	C	C	C

Confidence ratings and estimates of uncertainty values

Confidence Grade	Confidence Rating and Description
A	Highly Reliable < 2% uncertainty Data based on sound records, procedure, investigations and analysis which is properly documented and recognised as the best method of assessment
B	Reliable □2-10% uncertainty Data based on sound records, procedures, investigations, and analysis which is properly documented but has minor shortcomings for example the data is old, some documentation is missing and reliance is placed on unconfirmed reports or some extrapolation
C	Reasonably Reliable □10–25 % uncertainty Data based on sound records, procedures, investigations, and analysis which is properly documented but has minor shortcomings for example the data is old, some documentation is missing and reliance is placed on unconfirmed reports or significant extrapolation.
D	Uncertain □25–50% uncertainty Data based on uncertain records, procedures, investigations and analysis, which is incomplete or unsupported, or extrapolation from a limited sample for which grade A or B data is available.
E	Very Uncertain > 50% uncertainty Data based on unconfirmed verbal reports and/or cursory inspection and analysis

8. PLAN IMPROVEMENT AND MONITORING

8.1 Improvement Program

The improvement tasks identified are as follows:

AMP Reference Number	Action	Planned Start Year
Section 2 Level of Service	Develop and review Levels of Service for road and transport assets	Ongoing
Section 4 Risk Management	Review and update Risk Register	Ongoing
Section 7 Asset Management Practices	Review financial data and processes, particularly those relating to asset valuations and depreciation	Ongoing
Section 7 Asset Management Practices	Train appropriate Council staff in using activity guidelines, AMP level of service, AMP intervention levels, AMP inspection regime	31/12/2013
Section 7 Life Cycle Management	Incorporate sustainable measures (use of recycle asphalt, concrete and road base) in new and renewal projects	Ongoing
Section 5 Life Cycle Management	Develop footpath and sign policy	31/12/2013
Section 5 Life Cycle Management	Implement Asset Capitalisation Policy	31/12/2012
Section 7 Life Cycle Management	Collect condition data for road and transport assets using Council staff	Ongoing
Section 3 Demand Forecasts	Analyse the current growth trends and use to develop future expected growth scenarios	31/12/2013
Section 7 Asset Management Practices	Integrate/interface asset management systems, spatial systems (GIS) and corporate/finance system where possible	31/12/2013
Section 5-Life Cycle Management	Develop a process so that the "life cycle cost "must be considered in the evaluation of major capital upgrade and new work proposals	31/12/2012

Appendix 1 – Maintenance Plan For Road and Transport Assets

Footpath Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	High Use Area	Medium Use Area	Low Use Area
Footpath Maintenance – Grinding	Observed lip considered dangerous	Footpath bays will be ground to provide a surface level with adjacent bay	Displacement is >10mm and <25mm	Annually in accordance with Maintenance Works program	Annually in accordance with Maintenance Works program	Annually in accordance with Maintenance Works program
Replacement of Concrete Footpath <10.0m ² (Received requests from resident to fix footpaths)	Concrete bay is raised, cracked, broken or all of the above	Existing broken and damage concrete bays removed and replaced to protect pedestrians due to tripping and falling	Displacement>30mm, for medium and low use footpath Displacement>20mm, for high use footpath	Annually in accordance with Maintenance Works Program	Annually in accordance with Maintenance Works Program	Annually in accordance with Maintenance Works Program
			Displacement>40mm, for high use footpath	Reactive works - Response Rating 1	Reactive works - Response Rating 2	Reactive works - Response Rating 3
			Displacement>50mm, for medium and low use footpath			
Replacement of Concrete Footpath >10.0m ² (Received requests from resident to fix footpaths)	Concrete bay is raised, cracked, broken or all of the above	Existing broken and damage concrete bays removed and replaced to protect pedestrians due to tripping and falling	Displacement>30mm, for medium and low use footpath Displacement>20mm, for high use footpath	Annually in accordance with Capital Works Program	Annually in accordance with Capital Works Program	Annually in accordance with Capital Works Program
			Displacement>40mm, for high use footpath	Reactive works - Response Rating 1	Reactive works - Response Rating 2	Reactive works - Response Rating 3
			Displacement>50mm, for medium and low use footpath			

Item	Reason for Activity	Treatment Description	Intervention Level	High Use Area	Medium Use Area	Low Use Area
Asphalt Regulation	All of the above	Temporary repair- Overlaying the defect, to remove the abrupt change	All of the above and when depression in 30mm in depth on asphalt footpath	Reactive works - Response Rating 1	Reactive works - Response Rating 2	Reactive works - Response Rating 3
Depression filling	Adjacent surface is lower than footpath surface	Filling with soil and turfing	Depression>50mm	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 1	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 2	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 3

Kerb and Gutter Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	High Use Area	Medium Use Area	Low Use Area
Kerb and gutter maintenance - Replacement of discrete section <10.0m	Structural defect causing impediment to water flow	Existing discrete section of broken and damaged kerb and gutter removed and replaced to restore the surface to a uniform and safe condition	Vertical or Horizontal displacement or Tilting >50mm	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 1	Annually in accordance with Maintenance Works program Reactive works - Response Rating 2	Annually in accordance with Maintenance Works program Reactive works - Response Rating 3
Kerb and gutter maintenance - Replacement of discrete section >10.0m	Structural defect causing impediment to water flow	Existing discrete section of broken and damaged kerb and gutter removed and replaced to restore the surface to a uniform and safe condition	Vertical or Horizontal displacement or Tilting >50mm	Annually in accordance with Capital Works Program Reactive works - Response Rating 1	Annually in accordance with Capital Works Program Reactive works - Response Rating 2	Annually in accordance with Capital Works Program Reactive works - Response Rating 3
Kerb and gutter maintenance - Replacement of discrete section	Water ponding causing impediment to water flow	Existing discrete section of kerb and gutter removed and replaced to restore the surface to a uniform and safe condition	>50% of cross sectional area blocked.	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 1	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 2	Annually in accordance with Maintenance Works Program Reactive works - Response Rating 3

Car Park Pavement Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	Building Car Park	On Road Car Park	Off Road Car Park	Open Space Car Park
Minor Patching (Due to shoving or depression or rutting or cracking)	Localised area which may have any or all of the following defects like shoving or depression or rutting or cracking	Treatment of isolated failed areas by the replacement with new material and reinstate riding surface	When depression is >40mm in depth over a two 2m straight edge and failure area <10m ²	Reactive Works-Response Rating 2			
Major Patching (Due to shoving or depression or rutting or cracking)	Localised area which may have any or all of the following defects like shoving or depression or rutting or cracking	Treatment of isolated failed areas by the replacement with new material and reinstate riding surface	When depression is >40mm in depth over a 2m straight edge and failure area >10m ²	Reactive Works-Response Rating 2 Annual rehabilitation program			
Edge Break Repair	Localised edge defect adjacent to shoulder	Repair of broken edges of seal to maintain correct overall seal width	Seal Edge break >30mm in width and length >2.0m	Reactive Works-Response Rating 2			
Crack Sealing	Asphalt surface cracks due to age and environmental effects	Cleaning of cracks with air blast and then filling with approved sealer and grit to prevent ingress of moisture into road pavement through the cracks	Repair all cracks >5mm wide	Annually in accordance with approved Maintenance program			

Item	Reason for Activity	Treatment Description	Intervention Level	Building Car Park	On Road Car Park	Off Road Car Park	Open Space Car Park
Reinstatements	Utility or private works in the road reserve	Construction of pavement to its original condition after utility works and ensure that the works have been carried out as per council standard	Receiving notification of completion of utility works	In accordance with the industry Code of Practice for response times and requirements	In accordance with the industry Code of Practice for response times and requirements	In accordance with the industry Code of Practice for response times and requirements	In accordance with the industry Code of Practice for response times and requirements
Line Marking	Damaged, missing, faded line marking	Re-marking the damaged area	Replace when reflectivity is less than 50%	15% of road network annually	15% of road network annually	15% of road network annually	30% of road network annually

Road Pavement Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	Cul De Sac/Access Lane	Local Road	Collector Road	Regional Road
Minor Patching (Due to shoving or depression or rutting or cracking)	Localised area which may have any or all of the following defects like shoving or depression or rutting or cracking	Treatment of isolated failed areas by the replacement with new material and reinstate riding surface	When depression is >40mm in depth over a two 2m straight edge and failure area <10m ²	Reactive works-Response Rating 1	Reactive works-Response Rating 2	Reactive works-Response Rating 2	Reactive works-Response Rating 3
Major Patching (Due to shoving or depression or rutting or cracking)	Localised area which may have any or all of the following defects like shoving or depression or rutting or cracking	Treatment of isolated failed areas by the replacement with new material and reinstate riding surface	When depression is >40mm in depth over a 2m straight edge and failure area >10m ²	Reactive works-Response Rating 1 Repair time - Annual Rehabilitation Program	Reactive works-Response Rating 2 Repair time - Annual Rehabilitation Program	Reactive works-Response Rating 2 Repair time - Annual Rehabilitation Program	Reactive works-Response Rating 3 Repair time - Annual Rehabilitation Program
Edge Break Repair	Localised edge defect adjacent to shoulder	Repair of broken edges of seal to maintain correct overall seal width	Seal Edge break >30mm in width and length >2.0m	Reactive Works-Response Rating 1	Reactive Works-Response Rating 2	Reactive Works-Response Rating 2	Reactive Works-Response Rating 3
Surface treatment to mitigate bleeding, flushing, polishing etc	Incorrect application rate of bitumen or aggregate during sealing operation	Spray of hot aggregate to the existing surface or water blasting or application of rubberised asphalt overlay to improve skid resistance	Observation of defects through customer complaints or council staff	Reactive Works-Response Rating 1	Reactive Works-Response Rating 2	Reactive Works-Response Rating 2	Reactive Works-Response Rating 3
Crack Sealing	Asphalt surface cracks due to age and environmental effects	Cleaning of cracks with air blast and then filling with approved sealer and grit to prevent	Repair all cracks >5mm wide	Annually in accordance with approved Maintenance Program			

Item	Reason for Activity	Treatment Description	Intervention Level	Cul De Sac/Access Lane	Local Road	Collector Road	Regional Road
		ingress of moisture into road pavement through the cracks					
Shoulder Grading	Water ponding on the road shoulder	Grade and roll as required to smooth trafficable surfaces	Water ponding on the road shoulder	Annually	Annually	Annually	6 month
Pothole Repair	Localised potholes	Repair any pothole to restore the riding surface to smooth condition	Potholes exceeds 300mm diameter and 50mm depth or pose risk to road users	Reactive Works-Response Rating 1	Reactive Works-Response Rating 2	Reactive Works-Response Rating 2	Reactive Works-Response Rating 3
Reinstatements	Utility or private works in the road reserve	Construction of pavement to its original condition after utility works and ensure that the works have been carried out as per council standard	Receiving notification of completion of utility works	In accordance with the industry Code of Practice for response times and requirements	In accordance with the industry Code of Practice for response times and requirements	In accordance with the industry Code of Practice for response times and requirements	In accordance with the industry Code of Practice for response times and requirements
Line Marking RMS Programmed and Funded	Damaged, missing, faded line marking	Re-marking the damaged area	Replace when reflectivity is less than 50%	15% of road network annually RMS	15% of road network annually RMS	15% of road network annually RMS	30% of road network annually RMS

Road Furniture Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	Cul De Sac/Access Lane	Local Road	Collector Road	Regional Road	Public Space
Road Furniture Maintenance	Bent, broken, faded or defaced components of the road furniture	Repair is necessary to maintain the use of the asset components and reduce the risk of injury to users caused by unsafe furniture includes, repair, re-erection, straightening and cleaning Replace missing sign and/or other road furniture	Repair or replace the damaged components of the road furniture	Annually in accordance with Maintenance Works Program Reactive Works-Response Rating 1	Annually in accordance with Maintenance Works Program Reactive Works-Response Rating 2	Annually in accordance with Maintenance Works Program Reactive Works-Response Rating 2	Annually in accordance with Maintenance Works Program Reactive Works-Response Rating 3	Annually in accordance with Maintenance Works Program Reactive Works-Response Rating 1

Road Structure Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	Cul De Sac/Access Lane	Local Road	Collector Road	Regional Road
Road Structure	Bent, broken, faded or defaced components of the road structure	Repair is necessary to maintain the use of facility and reduce the risk of injury to users caused by unsafe road structure	Repair or replace the damaged components of the road structure	Annually in accordance with Maintenance Works Program Reactive works-Response Rating 1	Annually in accordance with Maintenance Works program Reactive works-Response Rating 2	Annually in accordance with Maintenance Works program Reactive works-Response Rating 2	Annually in accordance with Maintenance Works program Reactive works-Response Rating 3

Bridge Maintenance

Item	Reason for Activity	Treatment Description	Intervention Level	Cul De Sac/Access Lane	Local Road	Collector Road	Regional Road	Public Space
Bridge Routine maintenance	Where dirt and debris impedes the performance of the bridge	1. Cleaning and clearing of deck, expansion joints, drainage scuppers, etc 2. Remove waterway obstructions 3. Address maintenance on bridge approaches 4. Cleaning and clearing of dirt and debris from superstructure and substructure, and vegetation from in and around bridge	Clear and clean when any accumulation of materials causes interruption to the escape of drainage water or the operation of expansion joints and stream flows obstructed at structure.	Annually in accordance with Maintenance Works Program				
Minor Repair and Painting	As defined in the VicRoads Inspection Manual	Minor repair to any concrete or timber components and minor painting, including repair of spalled posts and parapets, and repair, tightening and painting of railing.	Paint any components that have lost >25% of their paint protection	Annually in accordance with Maintenance Works Program				

Item	Reason for Activity	Treatment Description	Intervention Level	Cul De Sac/Access Lane	Local Road	Collector Road	Regional Road	Public Space
Structural Repair	As defined in the VicRoads Inspection Manual	Damage repairs to structure	Damage affecting structural performance, loss of function	Annually in accordance with Maintenance or Capital Works Program Reactive works-Response Rating 1	Annually in accordance with Maintenance or Capital Works Program Reactive works-Response Rating 2	Annually in accordance with Maintenance or Capital Works Program Reactive works-Response Rating 2	Annually in accordance with Maintenance or Capital Works Program Reactive works-Response Rating 2	Annually in accordance with Maintenance or Capital Works Program Reactive works-Response Rating 2

Appendix 2 –Infrastructure Asset Inspection

Asset Type	Hierarchy	Inspection Type	Frequency	Responsibility
Road	Regional	Risk Inspection	6 months	City Works
		Condition Inspection	25% of road network per year	City Assets
	Collector	Risk Inspection	6 months	City Works
		Condition Inspection	25% of road network per year	City Assets
	Local	Risk Inspection	12 months	City Works
		Condition Inspection	25% of road network per year	City Assets
	Cul-De-Sac	Risk Inspection	24 months	City Works
		Condition Inspection	25% of road network per year	City Assets
	CBD Area	Risk Inspection	3 months	City Works
		Condition Inspection	25% of car park per year	City Assets
Car Park	Regional	Risk Inspection	6 months	City Works
		Condition Inspection	25% of car park per year	City Assets
	Collector	Risk Inspection	6 months	City Works
		Condition Inspection	25% of car park per year	City Assets
	Local	Risk Inspection	12 months	City Works
		Condition Inspection	25% of car park per year	City Assets
	Cul-De-Sac	Risk Inspection	24 months	City Works
		Condition Inspection	25% of car park per year	City Assets
	CBD Area	Risk Inspection	3 months	City Works
		Condition Inspection	25% of car parks per year	City Assets
Bridge and Culvert	Level 1 Inspection	Risk Inspection	6 months	City Assets
	Level 2 Inspection	Condition Inspection	12 months	City Assets

Asset Type	Hierarchy	Inspection Type	Frequency	Responsibility
	Level 3 Inspection (as required from level 2 inspection)		To be determined after Level 2 inspection	City Assets
Footpath	High Usage Paths	Risk Inspection	6 months	City Works
		Condition Inspection	25% of footpath network per year	City Assets
	Medium Usage Paths	Risk Inspection	18 months	City Works
		Condition Inspection	25% of footpath network per year	City Assets
	Low Usage Paths	Risk Inspection	24 months	City Works
		Condition Inspection	25% of footpath network per year	City Assets
	CBD Area	Risk Inspection	3 months	City Works
		Condition Inspection	25% of footpath network per year	City Assets
Kerb and Gutter	High Usage Area	Risk Inspection	6 months	City Works
		Condition Inspection	25% of kerb & gutter per year	City Assets
	Medium Usage Area	Risk Inspection	18 months	City Works
		Condition Inspection	25% of kerb & gutter per year	City Assets
	Low Usage Area	Risk Inspection	24 months	City Works
		Condition Inspection	25% of kerb & gutter per year	City Assets
	CBD Area	Risk Inspection	3 months	City Works
		Condition Inspection	25% of kerb & gutter per year	City Assets
Bus Shelters, Signs, Bin and Seat	All areas except CBD	Risk Inspection	12 months	City Assets
		Condition Inspection	12 months	City Assets
	CBD Area	Risk Inspection	3 months	City Works
		Condition Inspection	12 months	City Assets
Roundabout, Speed Hump etc	All areas except CBD	Risk Inspection	12 months	City Assets
		Condition Inspection	12 months	City Assets
	CBD Area	Risk Inspection	3 months	City Works
		Condition Inspection	12 months	City Assets

Asset Type	Hierarchy	Inspection Type	Frequency	Responsibility
All Assets	All	Inspection after Major Flood	Within 5 Days	City Works/Assets

Appendix 3 – Road Rehabilitation Program 2013/14 to 2016/17

2013/2014 Road Rehabilitation Program

Asset ID	Street Name	From	To	Length	Width	Area (M2)	Estimate	Treatment
	Harris St	Sackville St	Thomas St	276	12	3312	\$107,470	Asphalt Overlay
	Bond St	Toohey Rd	Toohey Rd	320	10.5	3360	\$319,966	Base Replacement And Mill And Resheet
	Canley Vale Rd	Wyharborough Pl	Avoca Rd	185	12	2220	\$86,592	Asphalt Overlay
	Rossetti St	Thompson St	The Horsley Dr	141	9.2	1297	\$128,106	Base Replacement And Mill And Resheet
	Ascot St	St Johns Rd	Kiora St	320	9.2	2944	\$28,479	Asphalt Overlay
	Derby St	St Johns Rd	Kiora St	325	5.0	1462	\$32,164	Asphalt Overlay
	Peel St	St Johns Rd	Kiora St	330	5.5	1815	\$39,930	Asphalt Overlay
	Cherokee Ave	Smithfield Rd	Natchez Cr	358	12	4368	\$175,000	Asphalt Overlay
	John St	Bold St	Lord St	83	12.4	1029	\$48,505	Asphalt Overlay
	Railway Parade	Henry St	Pipeline Bridge	261	9.6	2506	\$131,709	Asphalt Overlay
	Kalang St	Edensor Rd	Angle Vale	275	12	3355	\$107,763	Asphalt Overlay
	Kalang St	Cuthbert Cres	Angle Vale	545	12	6649	\$221,348	Asphalt Overlay
	Chelsea Dr	Chainage 33	Abel St	33	12	396	\$13,772	Asphalt Overlay
	Abel St	Dead End	Chelsea	65	8	520	\$13,173	Asphalt Overlay
	May St	Diprose St	Cul-De-Sac	139	10	1390	\$52,432	Asphalt Overlay
	Boundary Ln	Broomfield St	Chainage 60	60	7.6	456	\$14,498	Asphalt Overlay
	Horsley Drive	Gibson Lane	Jamieson Cl	378	7.2	2722	\$146,837	Asphalt Overlay
	Apache St	Mimosa Rd	Prairievale Rd	214	9	1926	\$126,687	Cement Stabilisation
	Arundel St	The Horsley Dr	Chainage 626	676	6.8	4597	\$65,208	Asphalt Overlay
	Auckland St	Gloucester St	Petersham St	216	7.2	1555	\$64,510	Asphalt Overlay
	Bauer Rd	Spooner Av	Jackson Pl	97	9	873	\$42,675	Asphalt Overlay
	Bentley St	Newton Rd	Victoria St	520	13	6760	\$238,517	Base Replacement And Mill And Resheet

Asset ID	Street Name	From	To	Length	Width	Area (M2)	Estimate	Treatment
	Boundary Rd	Lasa St	Cabramatta Rd East	197	8.5	1675	\$129,345	Asphalt Overlay
	Broomfield Ln	Longfield St	Curtin St	200	12	2400	\$163,823	Asphalt Overlay
	Broomfield St	Curtin St	Bareena St	250	12	3000	\$128,007	Asphalt Overlay
	Caranya Pl	Joseph St	Cul-De-Sac	93	10.2	949	\$34,749	Asphalt Overlay
	Clarence St	Salisbury St	Gladstone St	139	7.4	1029	\$39,864	Asphalt Overlay
	Gardiner Cres	Nangar St	Nangar St	256	10.5	2688	\$97,009	Asphalt Overlay
	Garland Cres	Mount St	House Number 10	123	8.1	996	\$27,049	Asphalt Overlay
	Gloucester St	Wilson Rd	Northumberland St	256	12	3072	\$192,319	Base Replacement And Mill And Resheet
	Hemphill Ave	Haig St	Pritchard St	100	12.1	1210	\$100,872	Asphalt Overlay
	Hemphill Ave	Pritchard Rd	Cabramatta Rd	115	12	1380	\$40,216	Asphalt Overlay
	Henry St	Kay St	Broughton St	231	9.7	2241	\$116,215	Asphalt Overlay
	Huntingdale Ave	Araluen Rd	Cherrybrook Rd	217	10	2170	\$66,594	Asphalt Overlay
	Jane St	Gipps St	Dublin St	217	9	1953	\$147,741	Asphalt Overlay
	Koonoona Ave	The Horsley Dr	Karella Ave	310	11	3410	\$118,168	Asphalt Overlay
	Lily St	Price St	Langland St	252	12.2	3074	\$50,534	Asphalt Overlay
	Lily St	Marvell Rd	Shakespeare St	214	12.2	2611	\$95,090	Asphalt Overlay
	Lily St	Shakespeare Rd	Locke St	92	12.2	1122	\$181,126	Base Replacement And Mill And Resheet
	Margaret St	Maud St	The Boulevarde	495	7.5	3713	\$251,757	Cement Stabilisation
	Market St	Victoria St	Chifley St	212	11.7	2480	\$269,306	Base Replacement And Mill And Resheet
	Marley Cres	Garland Cres	House Number 36	381	7.2	2743	\$90,074	Asphalt Overlay
	Meadows Rd	Lena St	Cabramatta Rd	241	12	2892	\$119,603	Asphalt Overlay
	Mojo Pl	Arrowhead Rd	Cul De Sac	95	8	760	\$27,858	Asphalt Overlay
	Mulligan St	Lofty Cres	Mimosa Rd	198	9	1782	\$100,789	Base Replacement And Mill And Resheet
	Nance Ave	Ryan Ave	Bowden St	73	8.9	650	\$66,816	Base Replacement And Mill And Resheet
	Oconnell St	Victoria S	Chifley S	213	10.8	2300	\$262,117	Base Replacement And Mill And Resheet

Asset ID	Street Name	From	To	Length	Width	Area (M2)	Estimate	Treatment
	Pepler Rd	Unwin Rd	John St	133	6.6	878	\$88,202	Base Replacement And Mill And Resheet
	Powhatan St	Shawnee St	Arrowhead	125	9.1	1138	\$83,226	Base Replacement And Mill And Resheet
	Restwell Rd	Access Marconi	Aspen St	182	13.8	2512	\$157,282	Base Replacement And Mill And Resheet
	Shakespeare St	Emerson St	Hn 60	195	12.2	2379	\$116,039	Base Replacement And Mill And Resheet
	Shakespeare St	Otway Cl	Chaucer St	86	12.2	1049	\$69,586	Base Replacement And Mill And Resheet
	Shortland St	Fraser Rd	Lansdowne	281	6.8	1911	\$140,171	Cement Stabilisation
	Smithfield Rd	Porteous S	Elizabeth Dr	275	14	3850	\$147,774	Asphalt Overlay
	Stromlo St	HN 5	HN 11	105	6.5	683	\$92,767	Cement Stabilisation
	The Promenade	Morven St	Woodville	430	8	3440	\$98,516	Asphalt Overlay
	Thorney Rd	Zarlee St	Baragoola	83	12.2	1013	\$42,807	Cement Stabilisation
	Thorney Rd	Zarlee St	School Crossing	231	12.2	2818	\$129,628	Base Replacement And Mill And Resheet
	Edensor Rd	Furci Ave	Doradoo St	322	12.2	4150	\$192,000	Asphalt Overlay
	Edensor Rd	Smithfield	Boomerang	335	12.2	4460	\$176,000	Asphalt Overlay
	Vine St	Dale St	Lawson St	202	12	2424	\$85,833	Asphalt Overlay
	Horsley Rd	Barbaro Lane	Delware Rd	350	8	2800	\$61,600	Asphalt Overlay
	Redfern St	Widemere Rd	Frank St	450	12	5400	\$255,200	Base Replacement And Mill And Resheet
	Redfern St	Walter St	Blackfriar Pl	395	12	4740	\$215,000	Base Replacement And Mill And Resheet
	Alick St	Huie St	Cabramatta Rd	377	8.8	3318	\$152,000	Asphalt Overlay
						TOTAL	\$7,426,290	

2014/2015 Road Rehabilitation Works Program

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Burdett	Prince St	George St	83	8	631	\$16,368	Asphalt Overlay
	Smithfield	Fitzgerald	Porteous St	369	12	4428	\$139,216	Asphalt Overlay
	Railway	Junction S	Henry St	210	10	2100	\$70,037	Asphalt Overlay
	Kalang	Cuthbert Cres	Busby Ave	225	12	2700	\$186,780	Base Replacement And Mill And Resheet
	Dublin	Victoria St	The Horsley Dr	211	11	2321	\$120,137	Cement Stabilisation
	Abercrombie	Deller Ave	Bauer Rd	223	7	1472	\$90,750	Asphalt Overlay
	Ace	Hedges St	Polding St North	343	9	3087	\$60,324	Asphalt Overlay
	Anthony	Douglas St	Dead End	73	12	876	\$22,011	Asphalt Overlay
	Benjamin	Antill Pl	Grainger Ave	88	6	563	\$43,456	Asphalt Overlay
	Blackford	Woodville Rd	Malta St	345	7	2415	\$281,417	Cement Stabilisation
	Blair	Cumberland St	Cul-De-Sac	70	11	735	\$25,801	Asphalt Overlay
	Booyong	Brigalow St	Bolivia St	203	7	1320	\$130,845	Cement Stabilisation
	Boundary	Levuka St	Lovoni St	112	7	818	\$72,343	Base Replacement And Mill And Resheet
	Boundary	Loloma St	Lasa St	126	6	718	\$40,865	Asphalt Overlay
	Campbell	Landon St	Tangerine St	290	7	2059	\$59,328	Asphalt Overlay
	Canley Vale	Allenby St	Stevenage Rd	310	12	3720	\$129,118	Asphalt Overlay
	Canva	Munro St	Cul-De-Sac	202	8	1616	\$134,134	Base Replacement And Mill And Resheet
	Chamberlain	Beaumont St	Beaumont St	273	7	1911	\$107,602	Asphalt Overlay
	Cheyenne	Arrowhead Rd	Sweethaven Rd	196	12	2352	\$93,913	Base Replacement And Mill And Resheet
	Chifley	Market St	Rhonda St	88	10	906	\$38,786	Asphalt Overlay
	Chifley	Rhonda St	Shamrock St	180	10	1854	\$148,880	Base Replacement And Mill And Resheet
	Cumberland	Liverpool St	Blair Pl	116	12	1357	\$155,522	Base Replacement And Mill And Resheet
	Daniel	House Number 17	Chainage 214	150	10	1500	\$98,043	Asphalt Overlay
	Daniel	House Number 17	House Number 2-8	351	10	3510	\$46,145	Asphalt Overlay
	Dargie	Oliphant St	Townview Rd	313	10	3193	\$248,457	Base Replacement And Mill And Resheet

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Denison	The Horsley Dr	Karella Av	348	9	3132	\$154,864	Asphalt Overlay
	Douglas	The Horsley Dr	Hedges St	207	12	2546	\$65,830	Asphalt Overlay
	Fairview	Longfield St	Curtin St	236	12	2832	\$69,889	Asphalt Overlay
	Fairview	Curtin St	Bareena St	184	12	2208	\$156,044	Cement Stabilisation
	Fairview	Bareena St	Lansdowne Rd	220	12	2640	\$112,794	Asphalt Overlay
	Gibson	Horsley Rd	Cul-De-Sac	69	7	462	\$14,410	Asphalt Overlay
	Grainger	Benjamin Rd	Townview Rd	221	7	1503	\$111,111	Asphalt Overlay
	Hardy	Sackville St	Nelson St	252	12	2974	\$99,792	Asphalt Overlay
	Hedges	Polding St	Loscoe St	233	11	2563	\$82,187	Asphalt Overlay
	Hemphill	House Number 58	Bolton Ave	320	12	3840	\$367,198	Base Replacement And Mill And Resheet
	Hemphill	Bolton Ave	Haig St	168	12	1966	\$182,739	Base Replacement And Mill And Resheet
	Henry	Railway St	Kay St	270	10	2754	\$115,627	Asphalt Overlay
	Horsley	The Horsley Dr	Gibson Lane	73	12	876	\$24,519	Asphalt Overlay
	Kiora	Peel St (HN 104)	Gladstone St	300	9	2550	\$88,055	Asphalt Overlay
	Koonoona	Karella Ave	Kirrang Ave	202	11	2222	\$58,251	Asphalt Overlay
	Koorinda	Denison St	Koonoona Ave	159	9	1431	\$25,124	Base Replacement And Mill And Resheet
	Lansdowne	Broomley St	Bridge	386	12	4632	\$273,878	Base Replacement And Mill And Resheet
	Lisbon	Crown St	Chn 248	248	12	2976	\$247,887	Base Replacement And Mill And Resheet
	Lasa	Boundary Lane	Cabramatta Rd	198	9	1841	\$58,575	Asphalt Overlay
	Liverpool	Cumberland St	Albert St	156	12	1872	\$85,399	Asphalt Overlay
	Liverpool	Albert St	Lovoni St	162	10	1620	\$37,455	Asphalt Overlay
	Longfield	Ralph St	Hume Hway	348	12	4176	\$219,879	Asphalt Overlay
	Mansfield	Emerson St	Rossetti St	315	6	1953	\$97,042	Asphalt Overlay
	Mcilvenie	Canley Vale Rd	Peterlee Rd	344	9	3096	\$37,241	Asphalt Overlay
	The Grove	Railway Pde	Hampton St	347	10.8	3748	\$149,741	Cement Stabilisation

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Munro	Chancery St	Cul-De-Sac	101	9	909	\$74,457	Base Replacement And Mill And Resheet
	Phillip	Cabramatta	Cul-De-Sac	217	10	2062	\$99,006	Asphalt Overlay
	Rawson	Garran St	Cambewarra	290	11	3103	\$326,715	Base Replacement And Mill And Resheet
	Schubert	Simpson Rd	Dead End	153	7	1040	\$36,641	Asphalt Overlay
	St Johns	Mallow Pl	Water St	241	12	2892	\$304,212	Base Replacement And Mill And Resheet
	St Johns	Water St	Lord St	195	12	2340	\$241,516	Base Replacement And Mill And Resheet
	St Johns	Birchgrove	Barlow Cres	91	12	1092	\$99,007	Base Replacement And Mill And Resheet
	Thorney	Cumberland Hwy	Hawkesbury St	217	12	2647	\$100,232	Asphalt Overlay
	Torrens	Gladstone	Chatham St	113	9	994	\$94,910	Asphalt Overlay
	Torrens	Salisbury	Gladstone	113	9	994	\$93,661	Base Replacement And Mill And Resheet
	Townview	Dargie St	Dadswell P	73	10	730	\$100,815	Base Replacement And Mill And Resheet
	Townview	Dargie St	Brownlee P	132	10	1320	\$39,523	Asphalt Overlay
	Townview	Brownlee P	Maggiotto Pl	115	10	1150	\$61,248	Asphalt Overlay
	Townview	Maggiotto Pl	Opiphant St	380	10	3800	\$161,775	Base Replacement And Mill And Resheet
	Wyong	Derby St	Salisbury	363	8	2940	\$96,773	Asphalt Overlay
						TOTAL	\$7,426,290	

2015/2016 Road Rehabilitation Works Program

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Orchardleigh	Broughton	Church St	444	12	5328	\$137,247	Asphalt Overlay
	Railway	House Number 37	Junction S	244	13	3074	\$134,261	Asphalt Overlay
	Kalang	Swan Rd	Busby Ave	148	12	1806	\$58,278	Asphalt Overlay
	Diprose	The Horsley Dr	Vine St	192	12	2285	\$80,762	Asphalt Overlay
	Adolphus	Queen St	Prince St	157	8	1256	\$18,799	Asphalt Overlay
	Auckland	Petersham St	Northumberland St	133	8	1051	\$31,834	Asphalt Overlay
	Avisford	Sackville St	Coleraine St	350	12	4200	\$151,833	Asphalt Overlay
	Bainton	Townview Rd	Hutchens Ave	205	7	1333	\$80,867	Asphalt Overlay
	Bareena	West St	Mackenzie St	122	12	1464	\$47,245	Asphalt Overlay
	Bareena	Mackenzie St	Fairview Rd	280	12	3360	\$158,444	Asphalt Overlay
	Bennett	Quest Ave	The Horsley Dr	285	7	1995	\$88,677	Asphalt Overlay
	Berry	Underwood Rd	Curran St	229	9	2107	\$68,206	Asphalt Overlay
	Bold	Cabramatta Rd West	Chainage 184	184	10	1840	\$165,370	Asphalt Overlay
	Bold	Chainage 184	John St	472	10	4720	\$102,531	Asphalt Overlay
	Bolivia	Aladore Ave	Kauri St	256	7	1792	\$137,434	Base Replacement And Mill And Resheet
	Bolivia	Kauri St	Eurabbie St	166	14	2324	\$162,958	Asphalt Overlay
	Bowden	Nance Ave	Cabramatta Rd West	50	11	570	\$52,195	Base Replacement And Mill And Resheet
	Boyd	John St	St Johns Rd	530	11	6042	\$172,744	Asphalt Overlay
	Carabeen	Brigalow St	Bolivia St	220	7	1540	\$55,572	Asphalt Overlay
	Chifley	O'connell St	Market St	303	10	3121	\$98,841	Asphalt Overlay
	Colville	Auckland St	Cul-De-Sac	116	8	951	\$48,791	Asphalt Overlay
	Curran	Nesbitt Pl	Corio Rd	199	9	1831	\$71,033	Asphalt Overlay
	Denison	Quest Ave	The Horsley Dr	295	10	2950	\$311,610	Cement Stabilisation

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Earl	Adolphus St	Sackville St	480	9	4320	\$151,294	Asphalt Overlay
	Evans Place	Hutchens Ave	Cul-De-Sac	46	7	322	\$11,979	Asphalt Overlay
	Fairview	Cabramatta Rd	Longfield St	180	12	2160	\$73,035	Asphalt Overlay
	Glebe	Drummoyne Cres	Cul-De-Sac	32	12	371	\$35,046	Base Replacement And Mill And Resheet
	Grainger	Benjamin Rd	Heinze Ave	389	7	2529	\$159,643	Asphalt Overlay
	Granville	The Horsley Dr	Parapet St	159	11	1781	\$58,828	Asphalt Overlay
	Hartog	Baudin Cres	Tasmam Pde	127	7	838	\$25,443	Asphalt Overlay
	Hawkesbury	Thorney Rd	Goodacre Ave	259	9	2305	\$77,248	Asphalt Overlay
	Helen	Horsley Dr	Cul-De-Sac	61	10	610	\$24,162	Asphalt Overlay
	Hemphill	House Number 91	Anderson Ave	220	10	2200	\$162,269	Base Replacement And Mill And Resheet
	Hemphill	Anderson Ave	House Number 58	164	10	1706	\$174,262	Base Replacement And Mill And Resheet
	Hercules	House Number 38	Tangerine St	109	6	687	\$31,405	Asphalt Overlay
	Hollywood	Bindaree St	Knight St	314	8	2512	\$69,768	Asphalt Overlay
	Hollywood	Day St	George River Rd	248	12	2852	\$122,672	Asphalt Overlay
	Hutchens	Townview Rd	Bainton Rd	86	7	559	\$85,427	Base Replacement And Mill And Resheet
	Jansz	Tasman Pde	Cul-De-Sac	70	7	490	\$19,008	Asphalt Overlay
	Jasnar	Hornet St	Hornet St	336	9	3024	\$152,031	Asphalt Overlay
	John	Harrington St	Bold St	199	12	2468	\$70,131	Asphalt Overlay
	Jordan	De Witt Pl	Smithfield Rd	294	12	3528	\$144,661	Asphalt Overlay
	Junction	National St	Cumberland St	130	12	1534	\$50,655	Asphalt Overlay
	Kambala	Baragoola St	Baragoola St	399	9	3511	\$116,617	Asphalt Overlay
	Kauri	Sassafras Lane	Bolivia St	57	8	456	\$41,100	Base Replacement And Mill And Resheet
	Kedron	Brisbane Rd	Cul-De-Sac	107	8	835	\$72,013	Cement Stabilisation
	Kingfisher	Quarry Rd	Bettong Cres	75	12	915	\$51,013	Asphalt Overlay
	Kingfisher	HN 42	Hn 58	147	12	1764	\$14,971	Asphalt Overlay

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Kiora	Burdett St	Palmerston Rd	112	9	986	\$49,811	Base Replacement And Mill And Resheet
	Kiora	Palmerston Rd	Sackville St	101	9	889	\$28,152	Asphalt Overlay
	Lavender	King Rd	Cul De Sac	200	9	1800	\$46,602	Asphalt Overlay
	Lawrence	The Horsley Dr	Crosby Cre	290	12	3480	\$85,272	Asphalt Overlay
	Lidell	Auckland St	Cul-De-Sac	148	8	1228	\$49,808	Asphalt Overlay
	Little Ada	Fraser Rd	Cul-De-Sac	42	7	294	\$12,540	Asphalt Overlay
	Locke	House Number 17	Macaulay St	159	9	1463	\$55,138	Asphalt Overlay
	Longfield	Broomfield St	Cumberland St	195	11	2145	\$201,102	Base Replacement And Mill And Resheet
	Macaulay	Locke St	Herrick Street	322	9	2962	\$28,149	Asphalt Overlay
	Mala	The Horsley Dr	Cul-De-Sac	96	10	960	\$78,221	Cement Stabilisation
	Maree	Sydney Luker Rd	Cul-De-Sac	234	9	2106	\$41,921	Asphalt Overlay
	Mcilwraith	Newton Road	Vicars Pl	206	13	2678	\$133,826	Base Replacement And Mill And Resheet
	Meadows	Elizabeth Dr	Oak Pl	104	12	1248	\$49,363	Asphalt Overlay
	Meadows	Oak Pl	Rose Ave	250	12	3000	\$92,675	Asphalt Overlay
	Mitchell	Barkley St	The Horsley Dr	136	12	1632	\$47,597	Asphalt Overlay
	Moonbi	Jasnar St	Cul-De-Sac	108	10	1080	\$30,976	Asphalt Overlay
	Moonshine	Birdwood Ave	Meadows Rd	188	7	1278	\$96,641	Asphalt Overlay
	Moore	Fraser Rd	Prospect Creek Bridge	122	10	1220	\$64,335	Base Replacement And Mill And Resheet
	Norfolk	King Rd	Tamar Pl	212	9	1908	\$74,547	Asphalt Overlay
	Norfolk	Tamar Pl	Jordan St	252	9	2268	\$83,314	Asphalt Overlay
	Normanby	Bligh St	Tangerine	204	12	2448	\$99,869	Asphalt Overlay
	Pool	Tasman Pde	Cul-De-Sac	70	7	490	\$24,552	Asphalt Overlay
	Prince	Salisbury	Gladstone	95	7	618	\$29,277	Asphalt Overlay
	Pritchard	Hemphill Ave	Anderson Ave	110	10	1122	\$85,879	Cement Stabilisation
	Prospect	Dead End	Senior St	144	11	1598	\$74,350	Asphalt Overlay

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Prospect	Senior St	Ada St	355	12	4260	\$365,570	Reconstruction
	Ryde	Drummoyne	Cul-De-Sac	100	8	800	\$25,064	Asphalt Overlay
	Sassafras	Kauri St	Eurabbie S	152	4	654	\$32,637	Asphalt Overlay
	Shop	Hawkesbury	Thorney Rd	80	6	480	\$22,572	Asphalt Overlay
	Sinnott	Mitchell S	Chn 46	46	6	290	\$10,060	Asphalt Overlay
	St Johns	Sackville	Adolphus S	134	11	1474	\$108,774	Base Replacement And Mill And Resheet
	Tasman	Hamilton Rd	Van Dieman	315	10	3213	\$154,017	Asphalt Overlay
	Townview	Garden Pl	Oliphant S	104	10	1040	\$174,656	Base Replacement And Mill And Resheet
	Townview	Oliphant S	Wakelin Av	271	10	2710	\$130,999	Asphalt Overlay
	Vancouver	Tasman Pde	Cul-De-Sac	155	8	1240	\$36,509	Asphalt Overlay
	Vicars	Mcilwraith	Cul-De-Sac	232	12	2784	\$144,199	Asphalt Overlay
	Vonn	Victoria S	Cul-De-Sac	74	10	740	\$26,752	Asphalt Overlay
	Wilco	Half Cul-De-Sac	Pepler Rd	70	10	700	\$41,404	Asphalt Overlay
	Wordsworth	Shakespeare	Swinborne	135	12	1620	\$59,061	Asphalt Overlay
						TOTAL	\$7,426,290	

2016/2017 Road Rehabilitation Works Program

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Albert	Liverpool St	Junction St	197	12	2364	\$82,819	Asphalt Overlay
	Antill	Junction St	The Promenade	203	11	2233	\$72,320	Asphalt Overlay
	Araluen	Cherrybrook Rd	Huntingdale Ave	188	8	1448	\$55,407	Asphalt Overlay
	Bauer	Jackson Pl	Abercrombie	121	9	1101	\$54,357	Asphalt Overlay
	Beale	Greenvale St	Shaw Pl	260	9	2340	\$91,476	Asphalt Overlay
	Beale	Shaw Pl	Corona Rd	279	9	2511	\$87,335	Asphalt Overlay
	Bodalla	Maud St	Stanley St	244	8	1952	\$29,662	Asphalt Overlay
	Bodalla	Montague St	Stanley St	123	8	984	\$30,569	Asphalt Overlay
	Bridge St	Broomfield St	Cumberland St	252	10	2570	\$87,802	Asphalt Overlay
	Brigalow	Eurabbie St	Huon St	93	6	595	\$14,542	Asphalt Overlay
	Brown	Elizabeth Dr	Amaroo St	80	12	960	\$71,731	Base Replacement And Mill And Resheet
	Brown	Cartier St	Hasluck Rd	110	12	1320	\$51,526	Base Replacement And Mill And Resheet
	Bulls	Devenport St	Kembla St	459	12	5508	\$116,969	Asphalt Overlay
	Bushells	Newton Rd	Cul-De-Sac	232	12	2784	\$120,373	Asphalt Overlay
	Canobolas St	Nangar St	Warrumbungle St	250	9	2250	\$64,251	Asphalt Overlay
	Chandos St	Queen St	Prince St	83	7	581	\$13,387	Asphalt Overlay
	Cobbett	Herrick St	Half Cul-De-Sac	166	9	1494	\$38,929	Asphalt Overlay
	Cobbett	House Number 13	Lily St	227	9	2043	\$53,191	Asphalt Overlay
	Curtin	Broomfield St	Cumberland St	157	12	1853	\$55,506	Asphalt Overlay
	Cutler	Bruce St	Dead End	148	10	1480	\$54,043	Asphalt Overlay
	Dalbertis	Province St	Rooney Ave	449	8	3412	\$81,840	Asphalt Overlay
	Daley	Lynesta Ave	Cul-De-Sac	38	8	304	\$10,324	Asphalt Overlay
	David	Anderson Ave	Benjamin Rd	274	10	2740	\$125,142	Asphalt Overlay

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Derria	Cambridge St	Derby St	112	8	930	\$26,956	Asphalt Overlay
	Derria	Gladstone St	Chatham St	111	9	944	\$28,710	Asphalt Overlay
	Dickens	Mary St	Shelley Pl	130	12	1560	\$9,548	Asphalt Overlay
	Donato	Oxford St	Cul-De-Sac	98	10	980	\$31,741	Asphalt Overlay
	Donegal	Chifley St	Eyre St	210	7	1428	\$101,561	Cement Stabilisation
	Dublin	Rosford St	Eyre St	88	9	792	\$37,466	Asphalt Overlay
	Dublin	The Horsley Dr	Casanda Ave	133	11	1397	\$99,007	Cement Stabilisation
	Duke	Chatham St	Adolphus St	112	7	739	\$20,185	Asphalt Overlay
	Eloura	Holdin St	Cul-De-Sac	144	6	864	\$25,564	Asphalt Overlay
	Eyre	Dublin St	Snowdon Cres	86	9	774	\$22,600	Asphalt Overlay
	Eyre	Rosford St	Hassall St	75	9	675	\$25,328	Asphalt Overlay
	Garland	Marley Cres	Mount St	311	8	2488	\$71,539	Asphalt Overlay
	Gladstone	Mcburney Rd	St Johns Rd	135	12	1620	\$67,634	Asphalt Overlay
	Hampton	Wolseley St	Codrington St	79	6	490	\$56,427	Reconstruction
	Hornet	Smithfield Rd	Mimosa Rd	514	9	4626	\$137,803	Asphalt Overlay
	Howitt	Brown Rd	Cul-De-Sac	109	7	807	\$14,300	Asphalt Overlay
	Hunter	Sackville St	Thomas St	227	12	2724	\$96,030	Asphalt Overlay
	Huon	Sussex St	Brigalow St	230	7	1518	\$52,140	Asphalt Overlay
	Huon	Mallee St	Bolivia St	160	7	1056	\$52,289	Asphalt Overlay
	Kembla	Bulls Rd	Burns Rd	321	12	3852	\$93,459	Base Replacement And Mill And Resheet
	Kendall	Harpur St	Paterson Cres	154	9	1401	\$40,953	Asphalt Overlay
	Kilkenny	Donegal Ave	Eyre St	213	7	1427	\$99,693	Cement Stabilisation
	Kincumber	Lalich Ave	Wearne Rd	268	13	3350	\$87,835	Asphalt Overlay
	Landon	Normanby St	Hercules St	262	10	2699	\$72,210	Asphalt Overlay

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Links	Stafford St	Cul-De-Sac	99	11	1040	\$29,029	Asphalt Overlay
	Loftus	Tangerine St	Landon St	264	7	1874	\$66,297	Asphalt Overlay
	Longfield	Cumberland St	HN 103-111	165	12	1980	\$147,114	Cement Stabilisation
	Longfield	HnN103-111	Fairview Rd	296	12	3552	\$258,826	Asphalt Overlay
	Lynesta	Wright St	Corona Rd	356	9	3240	\$99,451	Asphalt Overlay
	Malory	Macaulay St	Cul-De-Sac	132	10	1320	\$32,181	Asphalt Overlay
	Malta	Jamieson Lane	Cul-De-Sac	292	8	2190	\$67,034	Asphalt Overlay
	Malta	Mandarin St	Blackford St	185	12	2220	\$58,581	Asphalt Overlay
	Malta	Blackford St	Woodville Rd	290	12	3480	\$87,241	Asphalt Overlay
	Mandarin	Seville St	Lisbon St	144	12	1728	\$56,980	Asphalt Overlay
	Mittiamo	Beelar St	Dead End	263	9	2446	\$145,222	Cement Stabilisation
	Molluso	Bulls Rd	Cul-De-Sac	142	8	1136	\$33,517	Asphalt Overlay
	Nerli	Waterhouse	Heysen St	53	7	376	\$13,057	Asphalt Overlay
	Newmen	Herrick St	Cul-De-Sac	144	10	1440	\$38,561	Asphalt Overlay
	Newton	Mckay Pl	Concrete Lined Channel	122	12	1464	\$93,632	Asphalt Overlay
	Nicholas	Rayner Pl	Cul-De-Sac	134	8	1018	\$20,510	Asphalt Overlay
	Noble	Prospect Rd	Togil St	187	6	1103	\$74,696	Asphalt Overlay
	Oliphant	Lambert Pl	Florey Crescent	118	10	1180	\$42,515	Asphalt Overlay
	Oliphant	Drysdale R	David St	130	10	1300	\$65,208	Asphalt Overlay
	Pritchard	Anderson A	Cabramatta	627	10	6395	\$132,737	Asphalt Overlay
	Quest	Denison St	Bennett Av	116	10	1114	\$42,922	Asphalt Overlay
	Quest	Edmondson	Hume Highway	72	8	590	\$29,530	Asphalt Overlay
	Rayner	Wellard Pl	Cul-De-Sac	101	7	717	\$21,698	Asphalt Overlay
	Ross	Sleigh Pl	Cul-De-Sac	128	12	1536	\$44,374	Asphalt Overlay

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Satara	Utzon Rd	Blackett P	160	7	1040	\$44,374	Asphalt Overlay
	Saxonvale	Coonawarra St	Coonawarra St	400	9	3600	\$61,292	Asphalt Overlay
	Sleigh	Cowpasture	Ross Pl	154	12	1848	\$102,828	Asphalt Overlay
	Sleigh	Ross Pl	Cowpasture Rd	269	12	3228	\$60,605	Base Replacement And Mill And Resheet
	Strzelecki	Bulls Rd	Cul-De-Sac	178	9	1602	\$47,394	Asphalt Overlay
	Sulman	Sydney Luker Dr	Satara Ave	290	7	1914	\$74,129	Asphalt Overlay
	Sweethaven	Cheyenne R	Allambie R	275	13	3575	\$185,642	Base Replacement And Mill And Resheet
	The Plateau	Siverwater	Cul-De-Sac	45	27	1215	\$35,679	Asphalt Overlay
	Toohey	Bond Cr	Bond Cr	323	11	3553	\$338,796	Base Replacement And Mill And Resheet
	Waterhouse	Rooney Ave	Lanceley P	211	7	1519	\$41,707	Asphalt Overlay
	Wellard	Holdin St	Cul-De-Sac	210	8	1680	\$44,924	Asphalt Overlay
	Welwyn	Avoca Rd	Peterlee R	101	7	677	\$47,153	Base Replacement And Mill And Resheet
	Wolseley	Hampton St	Coleraine	272	10	2693	\$67,865	Reconstruction
	Wyalong	Bulls Rd	Cul-De-Sac	157	10	1570	\$44,666	Asphalt Overlay
	Young	House Number 20	Meadows Rd	209	10	2090	\$74,179	Asphalt Overlay
	Rossetti Street	Thompson St	The Horsley Drive	87	9	800	\$274,241	Base Replacement And Mill And Resheet
	John Street	Bold St	Lord St	107	12	1327	\$48,505	Asphalt Overlay
	Bentley Street	Newton Rd	Victoria St	556	13	7228	\$331,580	Asphalt Overlay
	Boundary Lane	Lasa St	Cabramatta Rd East	197	9	1675	\$66,372	Asphalt Overlay
	Huntingdale Avenue	Araluen Rd	Cherrybrook Rd	17	10	170	\$49,732	Asphalt Overlay
	John Street	Cumberland Hwy	Coventry Rd	299	12	3588	\$50,991	Asphalt Overlay
	Duri Place	Simon Ave	Cul-De-Sac	79	5	411	\$18,038	Asphalt Overlay
	Hambly Street	Beale Cres	Thorney Rd	79	9	711	\$22,885	Asphalt Overlay
	Camira Place	Bimbi Place	Cul-De-Sac	76	9	699	\$17,952	Asphalt Overlay

Asset ID	Street Name	From	To	Length	Width	Area (m2)	Estimate	Treatment
	Miriam Close	Marlborough St	Cul-De-Sac	70	6	448	\$14,732	Asphalt Overlay
	Bruce Street	Eastbank Ave	Cutler Rd	165	9	1485	\$45,943	Asphalt Overlay
	Heaven Valley Way	Cherrybrook Rd	Huntingdale Ave	250	8	1950	\$52,728	Asphalt Overlay
	Loloma Street	Boundary Lane	Cabramatta Rd	265	10	2677	\$87,762	Asphalt Overlay
	Hampton Street	Codrington St	Cul-De-Sac	45	4	189	\$4,888	Asphalt Overlay
	Victoria Street	Elizabeth St	Canley Vale Rd	350	20	7000	\$336,786	Asphalt Overlay
	Melville Ave	Curtin St	Longfield St	135	7	891	\$30,935	Asphalt Overlay
	Glen Elgin Rd	Arrawatta Cl	Coonawarra St	190	7	1330	\$32,373	Asphalt Overlay
	West St	Bareena St	Cul-De-Sac	60	11	660	\$17,998	Asphalt Overlay
	Oxford St	The Horsley Dr	Dead End	185	8	1480	\$44,045	Asphalt Overlay
	Vincent St	Togil St	Togil St	340	9	3060	\$97,675	Asphalt Overlay
						TOTAL	\$7,426,290	

Appendix 4 – Footpath Replacement Program 2014/15 to 2017/18

Footpath Replacement Program 2014/15

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Kirrang Avenue	Carramar	Woodville Road	Kamira Avenue	Left	50	5.25	\$28,875	\$28,875
The Horsley Drive	Carramar	Mclaren Street	Mitchell Street	Left	70	1.2	\$10,500	\$39,375
The Horsley Drive	Carramar	Mitchell Street	Dalmatia Street	Left	100	1.2	\$15,000	\$54,375
The Horsley Drive	Carramar	Dalmatia Street	Gordon Street	Left	50	1.2	\$7,500	\$61,875
The Horsley Drive	Carramar	Gordon Street	Tangerine Street	Left	25	1.2	\$3,750	\$65,625
Barbara Street	Fairfield	Harris Street	Kenyon Street	Right	125	3.3	\$103,125	\$168,750
Lackey Street	Fairfield	Frederick Street	Harold Street	Left	100	1.2	\$13,200	\$181,950
Lackey Street	Fairfield	Frederick Street	Harold Street	Left	50	1.2	\$6,600	\$188,550
Bimbi Place	Bonnyrigg	Montgomery Road	Camira Place	Right	65	1.2	\$8,580	\$197,130
Bimbi Place	Bonnyrigg	Camira Place	Cul-De-Sac	Both	150	1.2	\$19,800	\$216,930
Camira Place	Bonnyrigg	Bimbi Place	Cul-De-Sac	Both	100	1.2	\$13,200	\$230,130
Akma Close	Bonnyrigg	Kindee Avenue	Cul-De-Sac	Both	60	1.2	\$7,920	\$238,050
Kincumber Road	Bonnyrigg	Montgomery Road	Mara Close	Left	28	1.2	\$3,696	\$241,746
Kincumber Road	Bonnyrigg	Montgomery Road	Mara Close	Right	10	1.2	\$1,320	\$243,066
Kincumber Road	Bonnyrigg	Fagan Place	Gurley Place	Right	100	1.2	\$13,200	\$256,266
Nicholas Close	Bonnyrigg	Rayner Place	Cul-De-Sac	Right	100	1.2	\$13,200	\$269,466
Bradfield Crescent	Bonnyrigg	Harricks Place	Coode Place	Right	61	1.2	\$8,052	\$277,518
Bradfield Crescent	Bonnyrigg	Coode Place	Tarlington Parade	Right	60	1.2	\$7,920	\$285,438
Bradfield Crescent	Bonnyrigg	Harricks Place	Tarlington Parade	Left	100	1.2	\$13,200	\$298,638
Lewis Street	Bonnyrigg Heights	Wilson Road	Narromine Place	Left	70	1.2	\$9,240	\$307,878

Footpath Replacement Program 2015/16

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Holbrook Street	Bossley Park	Bega Place	June Place	Right	73	1.2	\$9,636	\$317,514
Holbrook Street	Bossley Park	Yamba Close	Boronia Road	Right	70	1.2	\$9,240	\$326,754
Holbrook Street	Bossley Park	Restwell Road	Boronia Road	Left	200	1.2	\$26,400	\$353,154
Kokoda Place	Bossley Park	Bougainville Avenue	Cul-De-Sac	Left	60	1.2	\$7,920	\$361,074
Bougainville Ave	Bossley Park	Quarry Road	Gazi Close	Left	60	1.2	\$7,920	\$368,994
Mimosa Road	Bossley Park	Polding Street	Dandenong Road	Right	60	1.2	\$7,920	\$376,914
Mimosa Road	Bossley Park	Prairie Vale Road	Salter Crescent	Left	200	1.2	\$26,400	\$403,314
Moree Place	Bossley Park	Glen Logan Road	Cul-De-Sac	Right	12	1.2	\$1,584	\$404,898
Serpentine Street	Bossley Park	Quarry Road	Lachlan Street	Left	30	1.2	\$3,960	\$408,858
Yakima Avenue	Bossley Park	Navaho Street	Ute Place	Right	50	1.2	\$6,600	\$415,458
Ute Place	Bossley Park	Yakima Avenue	Cul-De-Sac	Both	60	1.2	\$7,920	\$423,378
Glenfern Crescent	Bossley Park	Dashmere Street	Dashmere Street	Both	200	1.2	\$26,400	\$449,778
Bauer Road	Cabramatta West	Jackson Place	Abercrombie Street	Right	80	1.2	\$10,560	\$460,338
Bauer Road	Cabramatta West	Mumford Road	Jackson Place	Right	100	1.2	\$13,200	\$473,538
Drummoyne Crescent	Cabramatta West	Burwood Place	Homebush Street	Left	60	1.2	\$7,920	\$481,458
Drummoyne Crescent	Cabramatta West	Humphries Road	Homebush Street	Left	80	1.2	\$10,560	\$492,018
Furci Avenue	Edensor Park	Quota Place	Winton Road	Right	70	1.2	\$9,240	\$501,258
Moffit Crescent	Edensor Park	Duardo Street	Powell Close	Both	60	1.2	\$7,920	\$509,178
Moffit Crescent	Edensor Park	Powell Close	Duardo Street	Right	200	1.2	\$26,400	\$535,578
Clifford Avenue	Canley Vale	Canley Vale Road	Clifford Lane	Right	60	1.2	\$9,000	\$544,578
Clifford Avenue	Canley Vale	Clifford Lane	Cul-De-Sac	Both	100	1.2	\$15,000	\$559,578

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Fitzgerald Avenue	Edensor Park	Tennant Place	Niland Place	Right	75	1.2	\$9,900	\$569,478
Fitzgerald Avenue	Edensor Park	Niland Place	Smithfield Road	Right	30	1.2	\$3,960	\$573,438
Quota Place	Edensor Park	Furci Avenue	Cul-De-Sac	Left	100	1.2	\$13,200	\$586,638
Flemington Street	St Johns Park	Drummoyne Crescent	Concord Place	Right	180	1.2	\$23,760	\$610,398

Footpath Replacement Program 2016/17

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Flemington Street	St Johns Park	Concord Place	Homebush Street	Right	60	1.2	\$7,920	\$618,318
Frederick Street	Fairfield	Lackey Street	Francis Street	Left	50	1.2	\$6,600	\$624,918
Winton Avenue	Greenfield Park	Furci Avenue	Bingham Place	Right	50	1.2	\$6,600	\$631,518
Winton Avenue	Greenfield Park	Bates Place	Raco Close	Left	65	1.2	\$8,580	\$640,098
Witt Close	Greenfield Park	Whitlam Avenue	Cul-De-Sac	Left	45	1.2	\$5,940	\$646,038
Brisbane Road	St Johns Park	Canley Vale Road	Sunny Place	Right	65	1.2	\$8,580	\$654,618
Humphries Road	St Johns Park	Cabramatta Road	Palisade Crescent	Left	55	1.2	\$7,260	\$661,878
Humphries Road	St Johns Park	Palisade Crescent	Mason Place	Left	74	1.2	\$9,768	\$671,646
Humphries Road	St Johns Park	Salelich Place	Bunker Parade	Left	114	1.2	\$15,048	\$686,694
Kamira Avenue	Villawood	Kamira Court	Villawood Road	Right	80	1.2	\$10,560	\$697,254
Snowdown Crescent	Smithfield	Radnor Place	Eyre Street	Left	68	1.2	\$8,976	\$706,230
Snowdown Crescent	Smithfield	Eyre Street	House No. 19	Left	70	1.2	\$9,240	\$715,470
Blaxland Street	Yennora	House No. 19	Cul-De-Sac	Both	130	1.2	\$17,160	\$732,630
Blaxland Street	Yennora	Laneway Between House Nos. 29 And 32			35	2	\$8,750	\$741,380
Smithfield Road	Greenfield Park	Sayonara Place	Mistral Street	Both	200	1.2	\$26,400	\$767,780
Smithfield Road	Greenfield Park	Mistral Street	Gretel Street	Both	50	1.2	\$6,600	\$774,380
Smithfield Road	Greenfield Park	Gretel Street	Hornet Street	Both	100	1.2	\$13,200	\$787,580

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Smithfield Road	Greenfield Park	Hornet Street	Mimosa Road	Both	300	1.2	\$39,600	\$827,180
The Horsley Drive	Carramar	Mclaren Street	Mitchell Street	Left	65	1.2	\$8,580	\$835,760
The Horsley Drive	Carramar	Mitchell Street	Dalmatia Street	Both	300	1.2	\$39,600	\$875,360
The Horsley Drive	Carramar	Dalmatia Street	Gordon Street	Left	90	1.2	\$11,880	\$887,240
The Horsley Drive	Carramar	Gordon Street	Tangerine Street	Both	50	1.2	\$6,600	\$893,840
Cumberland Street	Cabramatta	Curtin Street	Longfield Street	Left	120	1.2	\$15,840	\$909,680

Footpath Replacement Program 2017/18

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Kendall Crescent	Fairfield West	Paterson Crescent	Harpur Street	Left	50	1.2	\$6,600	\$916,280
Kendall Crescent	Fairfield West	Harpur Street	Paterson Crescent	Left	50	1.2	\$7,500	\$923,780
Bancroft Road	Abbotsbury	Driscoll Street	Unsworth Street	Right	50	1.2	\$6,600	\$930,380
Begovich Crescent	Abbotsbury	Bancroft Road	Woodman Place	Left	20	2	\$5,000	\$935,380
Mataro Close	Endensor Park	Hollydene Crescent	Cul-De-Sac	Left	28	1.2	\$3,696	\$939,076
Tasman Parade	Fairfield West	Van Dieman Crescent	Bryant Place	Left	30	1.2	\$3,960	\$943,036
Tyrell Crescent	Fairfield Heights	Rawson Road	Rawson Road	Right	30	1.2	\$3,960	\$946,996
Ivanhoe Street	St Johns Park	Ballarat Place	Humphries Road	Left	20	1.2	\$2,640	\$949,636
Blake Close	Wetherill Park	Dickens Street	Cul-De-Sac	Both	50	1.2	\$6,600	\$956,236
Musgrave Crescent	Fairfield Heights	Ainslie Street	Hamersley Street	Left	40	1.2	\$5,280	\$961,516
Brown Road	Bonnyrigg	Montgomery Road	Merinda Place	Left	250	1.2	\$33,000	\$994,516
Montgomery Street	Bonnyrigg	Brown Road	Elizabeth Drive	Both	300	1.2	\$39,600	\$1,034,116
Beale Crescent	Fairfield West	Corona Road	Hambley Street	Left	145	1.2	\$19,140	\$1,053,256
Beale Crescent	Fairfield West	Hambley Street	Shaw Place	Left	100	1.2	\$13,200	\$1,066,456
Hambley Street	Fairfield West	Beale Crescent	Thorney Road	Left	65	2	\$16,250	\$1,082,706
Coolatai Crescent	Bossley Park	Pilliga Crescent	Pilliga Crescent	Both	200	1.2	\$26,400	\$1,109,106
Coolatai Crescent	Bossley Park	Pilliga Crescent	Prairievale Road	Left	20	1.2	\$2,640	\$1,111,746
Quarry Road	Bossley Park	Mimosa Road	Castlereach Street	Both	400	1.2	\$52,800	\$1,164,546
Bettong Crescent	Bossley Park	Kingfisher Avenue	Wallaby Close	Both	100	1.2	\$13,200	\$1,177,746

Street Name	Suburb	From	To	Side	Length	Width	Cost	Cumulative Cost
Wallaby Close	Bossley Park	Bettong Crescent	Cul-De-Sac	Both	50	1.2	\$6,600	\$1,184,346
Falklands Avenue	Bossley Park	Marble Close	Bossley Road	Both	70	1.2	\$9,240	\$1,193,586
Falklands Avenue	Bossley Park	Zircon Street	Marble Close	Left	20	1.2	\$2,640	\$1,196,226
Benghazi Street	Bossley Park	Alamein Road	Bogainville Avenue	Both	70	1.2	\$9,240	\$1,205,466