



Roads Asset Management Plan 2024

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1.0: EXECUTIVE SUMMARY

All councils in Australia own assets, which include infrastructure, property, plant and equipment. At PAE we manage our assets to provide a suitable level of service to current and future generations in the most cost-effective manner. Our approach is strategic and aligned with industry standards to ensure that we manage our assets effectively and sustainably.

Effective asset management for our roads assets is a key contributor to our City Vision, in which we envision PAE as 'a welcoming, liveable city: made by people'.

What Type of Roads Assets Are There in PAE?

Roads assets in PAE are made up of:

- Road seals
- Road bases
- Kerbs
- Traffic control devices

Road Network

- There are 708km of roads, with 997 traffic control devices
- On a rating scale where 10 is very good and 1 is unusable, the average condition of our roads is 7.85
- Total replacement value: \$1.01 billion
- Annual depreciation: \$15.2 million

How Critical are PAE's Roads Assets?

Overall, we have assessed the roads asset class to have a high level of criticality in comparison with other major assets. The significant safety risks associated with traffic and pedestrians means that in comparison with other kinds of assets such as footpaths and buildings, the consequences of their failure are more serious.

Levels of Service

Criteria	What Level of Service Do We Aim For?
Function	Our road network is accessible and well connected
Condition	Our roads provide suitable conditions for transport
Safety	The road network enables traffic to move safely because we maintain its surface condition, maintain traffic control devices and carry out line marking
Environmental Sustainability	We work to reduce our carbon footprint by adopting a sustainable, circular economy approach to constructing, renewing and reconstructing our road network
Renewal Capacity/Financial Sustainability	We manage renewing our network in a financially sustainable way

Future Demand

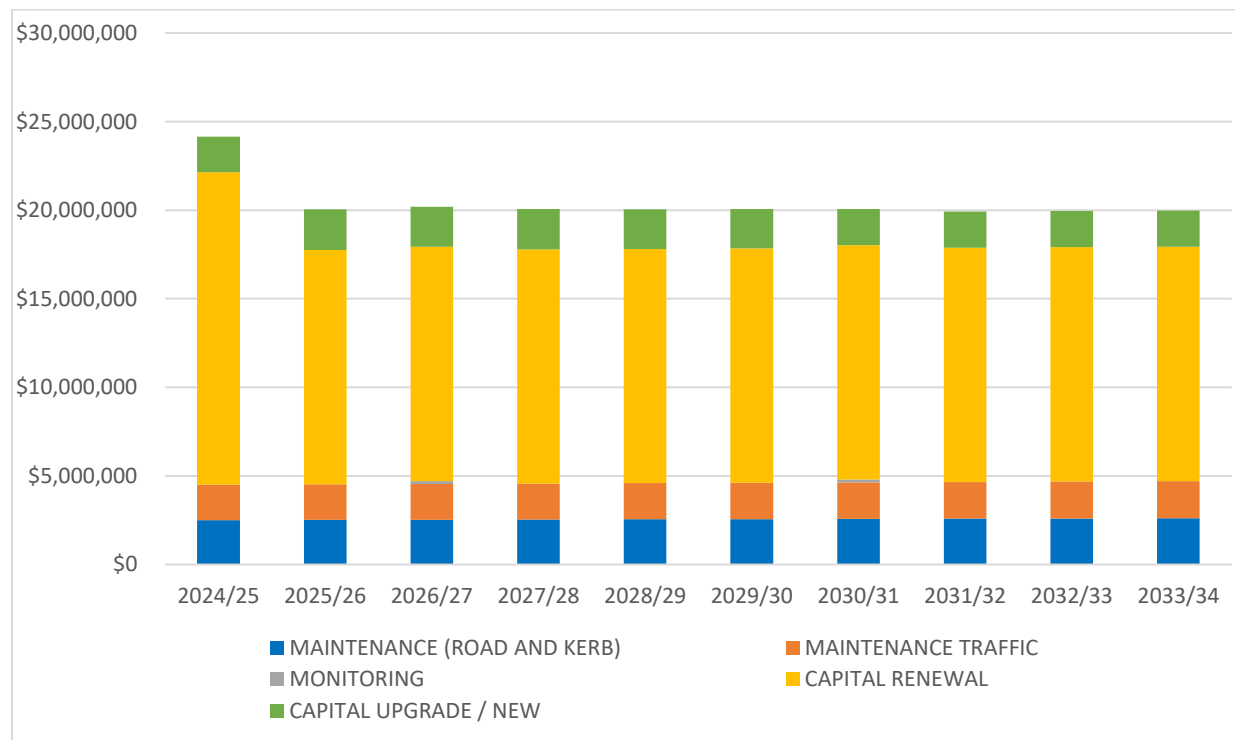
Population and demographics	- Based on the last Census undertaken in 2021, our population will have grown by approximately 22% from 134,000 to 164,000 over a projected 25 year period. - We expect that people will own more cars than they do now, with an average of two to three cars per household. On-street parking need is therefore likely to increase - Based on the last Census undertaken in 2021, the number of dwellings will increase from 56,642 to 69,606. This will occur through both infill development (i.e. subdividing one existing allotment into two or more) and through new residential development on previously undeveloped land - Increasing urban infill will create smaller segments of footpaths and increasing numbers of driveway crossovers
Environment and Climate Change	- Temperature variations and increasing rainfall intensity may impact the life of road surfaces - As the trend of severe weather events – including extreme heat waves – increases, along with the demand for sustainable construction techniques, we will need to be aware of the role that councils play in climate sustainability
Urban Development	- There will be limited on-street parking, along with a higher demand for parking due to an increased number of residential developments on smaller parcels of land, which is likely to create traffic congestion in neighbourhood streets - The provision of utilities in response to increased residential development will cause road surface damage - We will increase the number of traffic control devices to manage local traffic
Technology	- People using alternative forms of transport (e.g. eScooters and eBikes) may cause issues when they are sharing roads with other vehicles - We will use data to assist in making decisions and delivering services

Financial Summary

The table below summarises our projected investment in maintenance, capital renewal and capital upgrade projects over the next 10 years.

Year	Maintenance (Road & Kerb)	Maintenance Traffic	Monitoring	Capital Renewal	Capital Upgrade	Total
2024–25	\$2,500,000	\$2,000,000		\$17,651,700	\$2,005,000	\$24,156,700
2025–26	\$2,512,500	\$2,010,000		\$13,462,000	\$2,303,800	\$20,288,300
2026–27	\$2,525,100	\$2,020,100	\$160,000	\$13,462,000	\$2,256,300	\$20,423,500
2027–28	\$2,537,700	\$2,030,200		\$13,462,000	\$2,280,000	\$20,309,900
2028–29	\$2,550,400	\$2,040,300		\$13,462,000	\$2,232,500	\$20,285,200
2029–30	\$2,563,100	\$2,050,500		\$13,462,000	\$2,232,500	\$20,308,100
2030–31	\$2,575,900	\$2,060,800	\$160,000	\$13,462,000	\$2,042,500	\$20,301,200
2031–32	\$2,588,800	\$2,071,100		\$13,462,000	\$2,042,500	\$20,164,400
2032–33	\$2,601,800	\$2,081,400		\$13,462,000	\$2,042,500	\$20,187,700
2033–34	\$2,614,800	\$2,091,800		\$13,462,000	\$2,042,500	\$20,211,100
Total	\$25,570,100	\$20,456,200	\$320,000	\$138,809,700	\$21,480,100	\$206,636,100

The above table of figures is in present value and is subject to CPI increase each year.



2.0: INTRODUCTION

Councils face challenges in managing their infrastructure and other assets due to factors such as development growth, climate change, ageing infrastructure, new legislative requirements, increasing community expectations and the growing demands of a changing population.

The City of PAE has a suite of strategic documents that together:

- set the long-term strategic direction for Council (City Vision);
- describe the strategic emphasis that Council will apply to achieve the City Vision goals and objectives;
- consider the impact on Council resources (including on our finances, our infrastructure and assets, and our employees);
- identify specific activities to deliver each year; and
- identify key performance measures.

Council's Strategic Management Framework (SMF), illustrated in the diagram below, demonstrates how these documents work together to deliver on our City Vision.



PAE manages and maintains a significant quantity of assets and infrastructure, including roads, footpaths, stormwater, buildings and open space. Collectively, these assets and infrastructure are valued at around \$2 billion. These assets and infrastructure are vital for delivering services and programs, and there are significant risks to both Council and the community if assets fail or cannot deliver to the desired level of service. Sound asset management is therefore a key contributor to the long-term financial, environmental and social sustainability of the City of PAE.

Under the *Local Government Act 1999*, PAE is required to develop and adopt an infrastructure and asset management plan (AMP) for relevant major assets and infrastructure covering a period of at least 10 years. Council is also required to produce a long-term financial plan (LTFP) covering a period of at least 10 years. These two plans must be aligned in their development and implementation.

The purpose of this Roads AMP is to plan the use of existing assets to deliver services, to predict asset maintenance and renewal requirements, and to anticipate the need for new/additional assets to meet future community expectations.

In summary, this AMP aims to consider and define:

- how Council's assets will enable the implementation of the City Vision (and other relevant strategies and plans);
- the condition of key assets;
- acceptable levels of service; and
- a plan to manage assets including when and how Council will renew, update, maintain or dispose of existing assets and provide new assets to meet current and future community needs.

This AMP aligns with the IPWEA International Infrastructure Management Manual. It is a living document and will be reviewed and revised where necessary over the next four years, continuing to comply with all legislative requirements.

2.1: KEY STAKEHOLDERS

The key stakeholders associated with the management of our roads is presented in the following table.

Stakeholder	Role	Responsible (R)	Accountable (A)	Supportive (S)	Consulted (C)	Informed (I)
Residents / Ratepayers	Provide input and feedback on the development and review of the AMPs Report issues associated with the asset				C	I
Council	Represent needs of community Endorses AM policy, strategy, and plans; allocate resources to meet objectives		A		C	
Executive & Management Team	Provide leadership to execute strategic direction; Ensures community feedback and service review outcomes are incorporated in AMPs; Ensures the organisation is financially sustainable Ensures risks are managed effectively		A	S		
Director City Assets	Responsible for the development and review of AMPs Ensures annual capital program is delivered Ensures maintenance programs are established, active and achieving service standards	R		S		

Asset Management Team	Lead development and review of AMPs Ensures improvement strategies are implemented Coordinates governance framework for ongoing monitoring of Asset Management Promote AM awareness, and supports capability building across the organisation Manage AM information systems	R		S		
Program Managers	Develop and implement maintenance, renewal, and capital works programs; Report asset-related risks; Provide technical expertise	R		S		
Finance Department	Ensure accurate asset valuations Use AMPs for annual preparation and review of LTFP Develop supporting policies and prepare financial reports	R		S		
Field Teams	Undertake maintenance programs and report maintenance issues	R				
Project Leaders	Lead the delivery of capital renewal, upgrade and new projects	R				
State & Federal Government	Provides Grant funding for Roads to Recovery, Special Local Roads and Black Spot funding			S		

3.0: PAE's CITY VISION

PAE's City Vision sets our long-term strategic direction. It identifies the key Goals and Objectives that we will work towards delivering over 10 years. The City Vision informs other more detailed strategies and plans. Our AMPs and Long Term Financial Plan (LTFP) outline how we will resource the delivery of strategies and plans.

Vision	A welcoming, liveable City: made by people			
	Guiding Principles Equity and belonging • Building a better future for all Participation • Listening to the community and involving them in our decision making Sustainability • Managing our environment responsibly and sustainably Integrity • Making informed decisions honestly, transparently and accountably Transformative • Showing courage, foresight and innovation			
Goals	Thriving Community	Prosperous Economy	Clean And Green City	Places For People
	<i>A City where people have the opportunity to connect and flourish</i>	<i>A City with a thriving economy that enriches its local community</i>	<i>A City that values its natural environment</i>	<i>An accessible City where people love to be</i>
Objectives	We promote community capacity, connection and participation in civic life	We participate in the economy with the community in mind	We reduce the City's adverse environmental impact and participate in a circular economy	We walk together on Kaurna country
	We encourage cultural expression and recognise people's history, stories and connection to place	We support local businesses, big and small, to grow, innovate and succeed	We shape the City to tackle the challenges of a changing climate	We shape the City to be attractive and liveable and care for our cultural and built heritage
	We support and encourage people to live healthy and active lives	We invest in our local economy to benefit current and future generations	We protect and enhance the City's natural environment	We bring places to life through community events, culture, design and the arts
Enablers	Organisational Capability			
	Our diverse workforce is resourced to deliver meaningful outcomes Our systems, processes and tools are contemporary and reflect leading practice Our assets and finances are managed with good stewardship			

3.1: ASSET MANAGEMENT STRATEGY AND POLICY

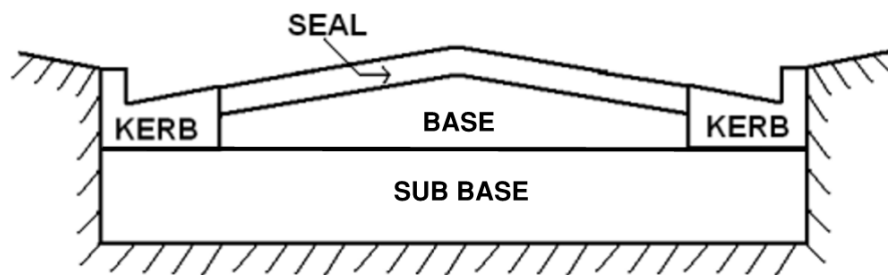
The City of PAE has an Asset Management Strategy (2019-2024) and an Asset Management Policy. These strategic documents provide linkages between the organisational objectives and the asset management objectives, as well as setting areas of focus and principles to guide decision making and practices to support meeting those objectives.

As the Council recently revised its Strategic Management Framework and adopted a new City Vision, which importantly, resets Council's long terms goals and objectives it is timely to review the Asset Management Strategy and Policy to determine their role and focus for the future. Notwithstanding this review, the key principles within the policy and strategy have guided the review and revision of the AMPs.

4.0: HOW MUCH DO WE MANAGE

The road infrastructure assets covered by this AMP are shown below. The lengths and values relate to the 2023/24 valuation data.

In addition to the attributes related to the road and kerb, this AMP covers a range of traffic control devices including slow points, pedestrian crossings traffic signals/school crossings and roundabouts. A full list is summarised in Table 4.1.3 below.



4.1: LENGTH BY ROAD TYPE

Image 4.1.1: Road Network by Type and Zone

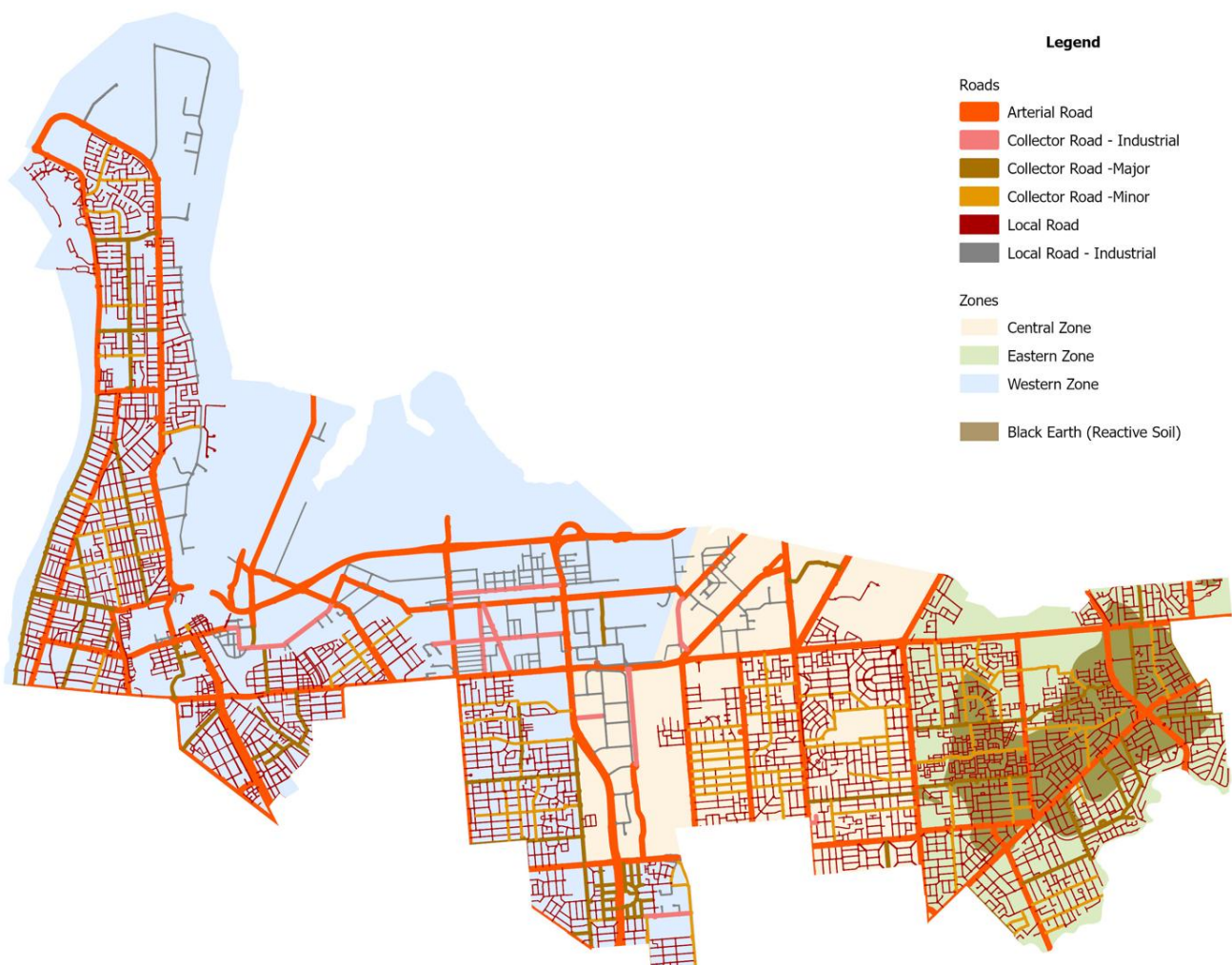


Image 4.1.1 and Table 4.1.1 identify the six types of roads we have across the City of PAE, within the defined three zones. An important aspect of our road network is the 202km of roads in our Eastern Zone, with the majority constructed on reactive clay (black earth) soil which require more maintenance and renewal more frequently.

Table 4.1.1: Road Length by type (kilometres)

	Collector Road - Industrial	Local Road - Industrial	Collector Road - Major	Collector Road - Minor	Local Road	Unformed Road	Total
Central	1.3	7.94	3.36	21.42	94.71	0.03	129.01
Eastern	-	-	15.85	18.09	168.68	0.12	202.74
Western	10.19	55.99	38.277	25.41	246.88	0.21	376.94
Total	11.49	63.93	57.49	64.92	510.27	0.61	708.71

Table 4.1.2: Kerb Length by type (kilometres)

	Edge Beam	Kerb & Gutter	Mountable Kerb and Gutter	Mountable Kerb	Upright Kerb	Total	Spoon Drain
Central Zone	0.77	266.30	1.96	-	0.20	269.45	0.22
Eastern Zone	1.61	418.77	1.59	0.66	0.05	423.83	1.15
Western Zone	8.15	713.89	53.31	0.09	0.13	778.24	2.67
Total	10.53	1,398.97	56.87	0.74	0.38	1,471.52	4.03

We manage 708 km of Road infrastructure across our Council area, along with 1,471 km of Kerb and 997 traffic control devices.

We manage 510km of local roads, 122km of Collector type roads, and 76km of Industrial Roads. The Collector and Industrial Roads are designed and constructed with larger pavements to withstand heavier loadings from bus and truck movements.

In addition to road assets, the City of PAE has invested heavily into road safety over the past 10 years, with approximately 1.4 traffic devices located on every 1 kilometre of road. These traffic devices range from roundabouts to pedestrian refuges as identified in Table 4.1.3.

Table 4.1.3: Traffic Control by type (number)

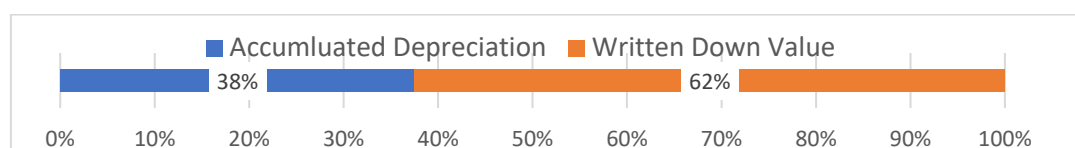
Traffic Control Type	East	Central	West	Total
Driveway Link	8	10	0	18
Entry Threshold	62	20	29	111
Island	15	1	13	29
Lane Angle Slow Point	4	13	0	17
Pedestrian Crossing	5	3	13	21
Pedestrian Refuge	57	43	134	234
Plateau	79	31	107	217
Protuberance	31	8	59	98
Roundabout	77	68	87	232
School Crossing	3	6	10	19
Signal	0	0	1	1
Total	341	203	453	997

4.2: VALUE & DEPRECIATION

The following rates and values relate to the 2024/25 valuation data.

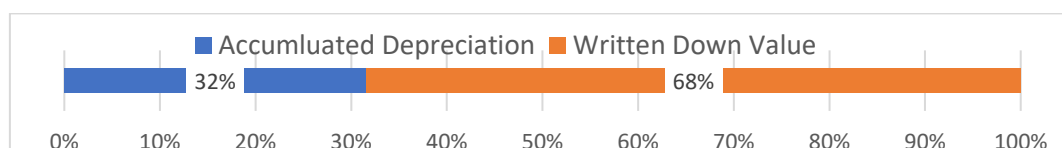
4.2.1: Road Surface Valuation Data

Zone	Soil Type	Annual Depreciation	Accumulated Depreciation	Written Down Value	Total Replacement Cost
Eastern	Unstable	\$1,720,898	\$14,361,547	\$28,283,511	\$42,645,059
Central	Semi-Stable	\$812,641	\$9,236,824	\$11,257,808	\$20,494,632
Western	Stable	\$2,791,565	\$30,642,057	\$50,730,993	\$81,373,050
Total		\$5,325,104	\$54,240,429	\$90,272,312	\$144,512,741



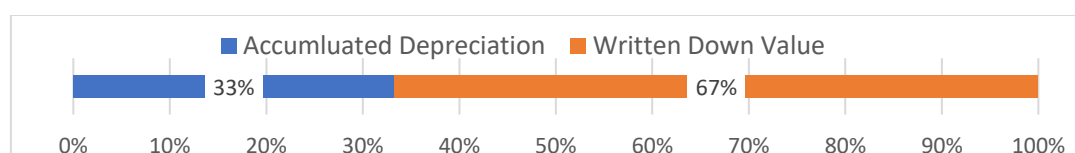
4.2.2: Road Base Valuation Data

Zone	Soil Type	Annual Depreciation	Accumulated Depreciation	Written Down Value	Total Replacement Cost
Eastern	Unstable	\$1,982,019	\$46,280,238	\$91,129,877	\$137,410,115
Central	Semi-Stable	\$902,171	\$39,556,297	\$59,140,598	\$98,696,896
Western	Stable	\$1,903,579	\$79,995,244	\$208,778,288	\$288,773,534
Total		\$4,787,769	\$165,831,779	\$359,048,764	\$524,880,544



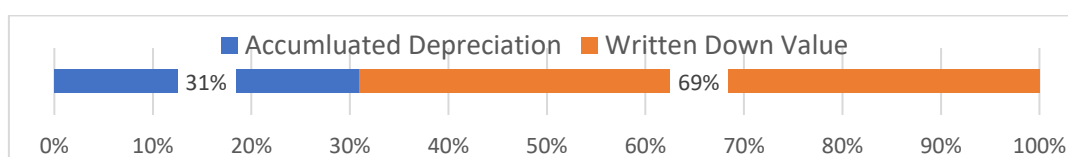
4.2.3: Kerb and Gutter Valuation Data

Zone	Soil Type	Annual Depreciation	Accumulated Depreciation	Written Down Value	Total Replacement Cost
Eastern	Unstable	\$1,598,395	\$32,092,680	\$58,785,840	\$90,878,519
Central	Semi-Stable	\$816,364	\$19,975,717	\$37,058,831	\$57,034,548
Western	Stable	\$1,890,629	\$50,276,010	\$109,233,447	\$159,509,457
Total		\$4,305,388	\$102,344,407	\$205,078,117	\$307,422,523



4.2.4: Traffic Control Valuation Data

Zone	Soil Type	Device Type	Annual Depreciation	Accumulated Depreciation	Written Down Value	Total Replacement Cost
Eastern	Unstable	Roundabouts and Protuberances	\$142,625	\$2,317,114	\$3,877,467	\$6,194,580
Central	Semi-Stable	Roundabouts and Protuberances	\$131,998	\$2,263,448	\$3,658,178	\$5,921,626
Western	Stable	Roundabouts and Protuberances	\$175,015	\$2,817,137	\$4,880,447	\$7,697,584
All	All	Traffic Lights	\$409,437	\$3,564,114	\$12,087,743	\$15,651,857
Total			\$859,075	\$10,961,813	\$24,503,834	\$35,465,647



4.2.5: Combined Valuation Data

	Road Surface, Base and Kerb	Traffic Control	Total
Total Replacement Cost	\$976,815,808	\$35,465,647	\$1,012,281,455
Written Down Value	\$654,399,193	\$24,503,834	\$678,903,027
Accumulated Depreciation	\$322,416,553	\$10,961,813	\$333,378,366
Annual Depreciation	\$14,418,261	\$859,077	\$15,277,338

Total cost to replace all road infrastructure which includes Traffic Control Devices is **\$1.01 Billion**.

Total Annual Depreciation which includes Traffic Control is **\$15.2 Million**

The Accumulated Depreciation for all road and traffic infrastructure across Council is between 30-40% of Replacement Cost, which suggests that on average our network is approximately a third through its useful life.

4.3: USEFUL LIFE BY ASSET TYPE

The useful life of material is much greater within the western zone of Council compared to the Eastern zone. This is due to the western sandy loam soil condition in comparison to the highly reactive clay in the eastern zone.

Table 4.3.1: Useful Lives by Road material type

Asset Type	West	Central	East	Oakden / Hillcrest
Road Base	100	70	50	35
Road Sub Base	300	210	150	105
Road Surface - Asphalt	30	30	25	25
Road Surface - Rejuvenator	7	7	7	7
Kerb	100	70	50	35
Traffic Control	40	40	40	40

5.0: NETWORK GROWTH

5.1: HOW HAS OUR NETWORK GROWN

The City of PAE is a high growth Council continually acquiring new road assets through the development of greenfield and brownfield land sites. Completed developments include Lightsview and Enfield High, with current development around the Port River, Taperoo and Oakden Rise to become a significant development into the future.

By inheriting approximately 2.4km of new road each year through major development, our network is growing at around 0.5% per year.

The major developments that have been completed, are currently in progress or are planned for the future are summarised in Table 5.1.1, all of which will continue to contribute road assets to City of PAE's network.

Table 5.1.1: List of Major Land Developments

Completed	Current	Future
Lancaster Ave, North Haven. Lightsview Enfield (Enfield High) Gracechurch Street, Port Adelaide. Days Road, Regency Park. Trafford Street Stages: 1 and 2, Angle Park Osmond Tce, Gilles Plains Fourth Ave, Klemzig Neptune Terrace: Stages 1-4, Gilman	Dock 1, Port Adelaide Fletchers Slip, Port Adelaide Fort Largs, Taperoo Oakden Rise, Oakden Blair Athol Housing Trust renewal	Dock 1 North, Port Adelaide Belford Ave, Devon Park Oakden Rise, Oakden (later stages) Wilkins Road Industrial Estate Perkins Drive Industrial Estate Gilles Plains PS Pty Ltd. Hillcrest Grand Trunkway Industrial Estate Martin Ave, Gillman

The count of traffic control devices has increased significantly over the past 10 years due to a focus on Local Area Traffic Management (LATM) projects. This work has delivered safety to our community through decreased motorist speeds and reduced volumes in those suburbs receiving these treatments.

5.2: GROWTH AND MAINTENANCE BUDGET

Table 5.2.1: Network Growth from New Roads

Category	Length (km)			
	2012	2016	2020	2024
Surface	678.5	680.7	695.6	708.1
Road Base	678.5	680.7	695.6	708.1
Kerb	1388.2	1413.6	1437.2	1467.5
Average Road increase since 2012			2.4 km	0.5% pa
Average Kerb Increase since 2012			6.6 km	

Category	Count			
	2012	2016	2020	2024
Traffic Control #	-	-	615	997
Total Increase since 2016		95.5 devices	7.8% pa	

The increase in Traffic Control Devices is largely due to the number of devices that have been constructed in response to recent Local Area Traffic Management (LATM) projects, as well as capturing existing infrastructure identified through various data capture projects.

Refer Table 4.1.3 for full list of traffic component types.

Maintenance includes all actions necessary for retaining an asset to an appropriate service condition and operating effectively – which includes pothole rectification, patch and relay, kerb reinstatement, traffic signage, and refreshing line marking.

Table 5.1.2: Historic Road, Kerb and Traffic Maintenance Expenditure

Year	Road	Kerb	Total Road & Kerb	Signage & Signals	Line Marking	Traffic Control Streetscapes	Total Traffic
2017/18	\$1,307,717	\$767,648	\$2,075,365	\$738,313	\$338,611	\$736,091	\$1,813,015
2018/19	\$1,351,870	\$970,983	\$2,322,853	\$564,784	\$402,708	\$745,414	\$1,712,906
2019/20	\$1,462,849	\$1,034,612	\$2,497,461	\$674,065	\$400,803	\$774,751	\$1,849,619
2020/21	\$1,401,829	\$845,433	\$2,247,262	\$696,737	\$478,406	\$852,356	\$2,027,499
2021/22	\$1,677,480	\$1,049,807	\$2,727,287	\$584,673	\$493,411	\$836,162	\$1,914,246
2022/23	\$1,412,037	\$1,121,924	\$2,533,961	\$584,544	\$539,144	\$915,089	\$2,038,777
2023/24	\$1,441,067	\$897,554	\$2,338,621	\$521,230	\$533,794	\$834,924	\$1,889,948

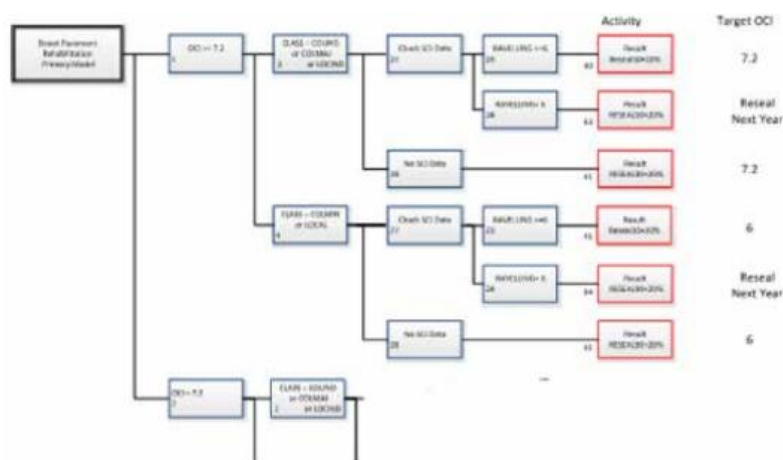
The Traffic category has been separated in Table 5.1.2, as this expenditure generally relates to gardening maintenance in traffic control devices (refer table 4.1.3 for full listing), sign replacement, and replacement of line marking. These services do not contribute to maintaining the life of the asset, but do deliver important amenity and safety attributes for the road network.

Expenditure on road and traffic control device maintenance has remained relatively stable over the past 7 years with a combined investment of over \$4.2m annually to maintain this asset class. It is important to note that although the road network has growth by around 0.5% each year over the past 10 years, these roads are in new condition when they are inherited by Council so have not impacted maintenance programs given their very good condition.

6.0: CONDITION OF OUR NETWORK

6.1: MODELLING AND ANALYSING CONDITION DATA

Image 6.1.1: Primary Pavement Decision Model



Council has now performed four full network condition audits which have provided important data to analyse to review network performance and to plan future works. The data captured is loaded into a decision model managed by Council's Assets Team. Image 6.1.1 depicts how the decision model responds to varying parameters - such as road type, traffic counts, and defect types. The model will determine year of works and cost based on degradation and road type.

The condition audits have been tightly specified to minimise variations and allow comparative analysis of data across each audit period. Council has used the same contractor, with the same equipment, and same works specification in all 4 audit years – being 2012, 2016, 2019 and 2023.

6.2: UNDERSTANDING CONDITION

ROADS

The last comprehensive audit of our road network condition was undertaken in 2023 which showed that the majority of the network is in a 'satisfactory' to 'good' condition. Using a consistent methodology based on the previous three comprehensive audits undertaken in 2012, 2016 and 2019 has enabled a comparative analysis of condition data across a long period of time. This analysis continues to show a consistent overall condition index score of very close to 8. The photographs below show the range in conditions seen throughout our network.

The consistency in condition modelling has also supported Council to be confident in projecting its investment which informs the LTFP and Annual Business Plan. This ensures that Council is achieving an Asset Renewal Ratio of 100%.

Image 6.2.1: How a road may present within our condition range



6.3: MEASURING CONDITION AND PERFORMANCE

The 2020 Road AMP committed to two objectives. These objectives were selected based on the community feedback received at the time showing that the community placed a high level of importance on road surface condition, along with line marking and signage. It also considered the existing network condition and consumption to propose these benchmarks.

Objective 1: Achieve a minimum network condition (Overall Condition Index) score of 8

Objective 2: Rejuvenate and renew an average of 28kms of road over the next 4 years.

The 28km Renewal target is based on the total length of road (708 km) divided by average life of seal (25 years). This is a theoretical target used to replace surface type at the rate of consumption – which, like the Capital Renewal Expenditure Ratio, is another method to measure performance against consumption.

The below figures show our performance against these objectives.

Table 6.3.1: Performance against Roads 2020 AMP Objectives

Year	Road Seal Renewed (km)	Performance Measure
2023/24	32.5	28kms per Year Averaged over 4 Years
2022/23	26.6	
2021/22	21.3	
2020/21	21.9	
Average	25.45	- 4.65 kms
2023/24 OCI = 7.85		-0.15

Chart 6.3.1: Performance against Roads 2020 AMP Objectives

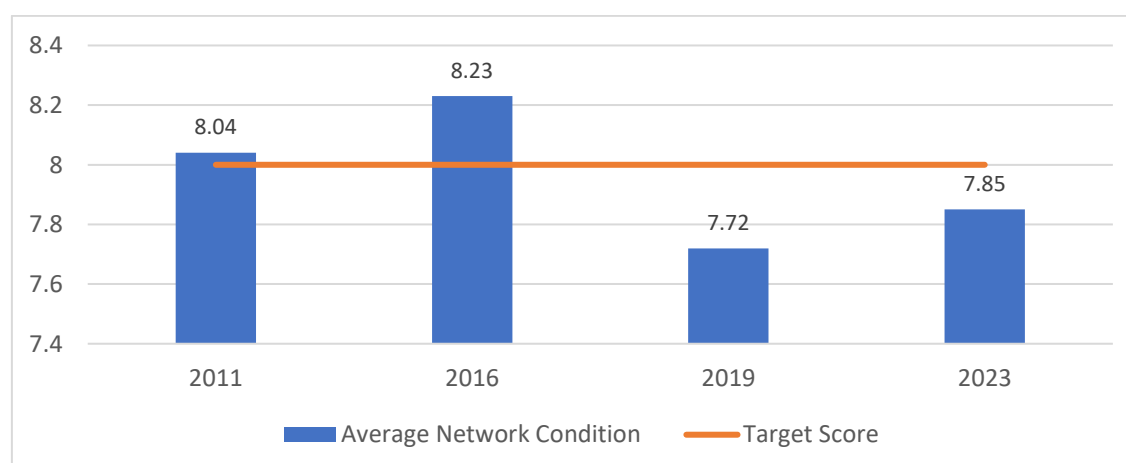
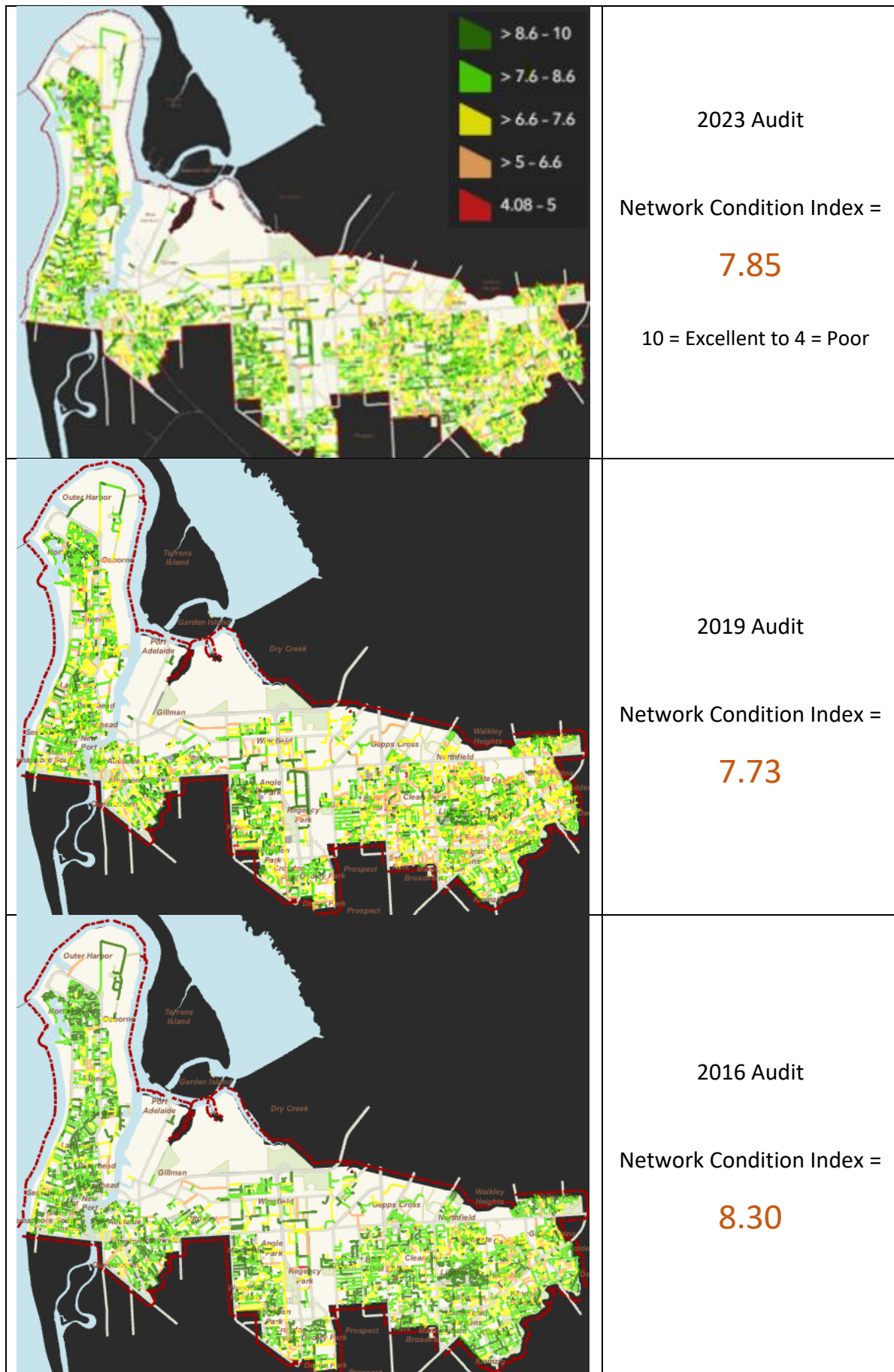
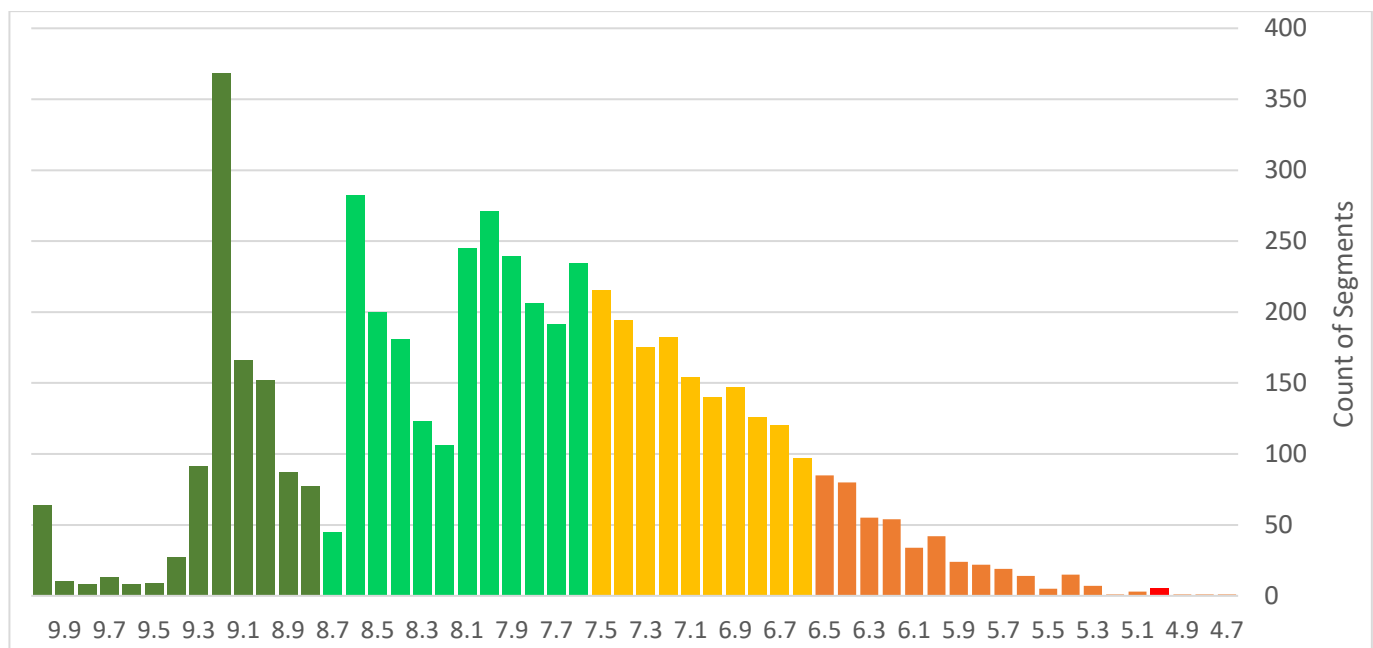


Image 6.3.1: Condition Map of Network by Colour from 2013 to 2022



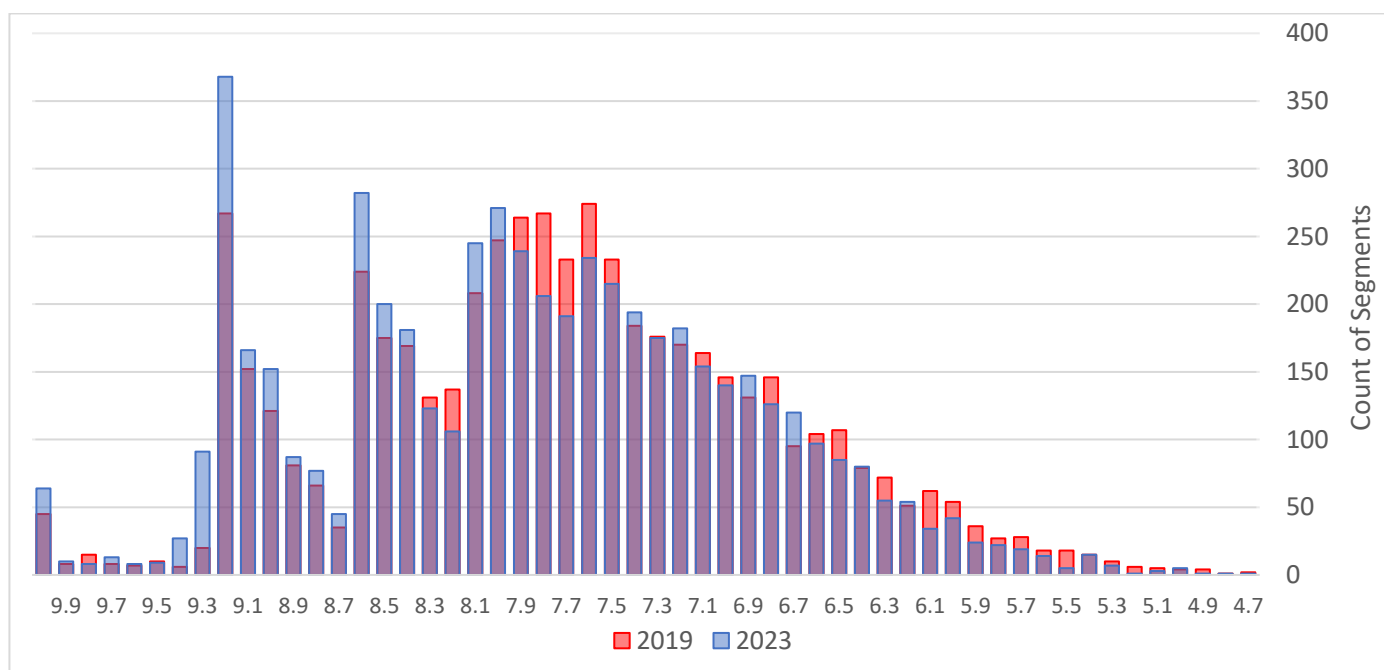
The network condition over the last 3 surveys has been very close to the target condition of 8. This indicates that the current approach to maintenance and renewal is considered appropriate and should be at least maintained to preserve the network.

Graph 6.3.2: 2023 Road Condition Audit Results



Note: The Roads Condition data has an index range from 10 being good to 4 being poor.

Graph 6.3.3: Comparison of 2019 and 2023 Road Condition Audit Results



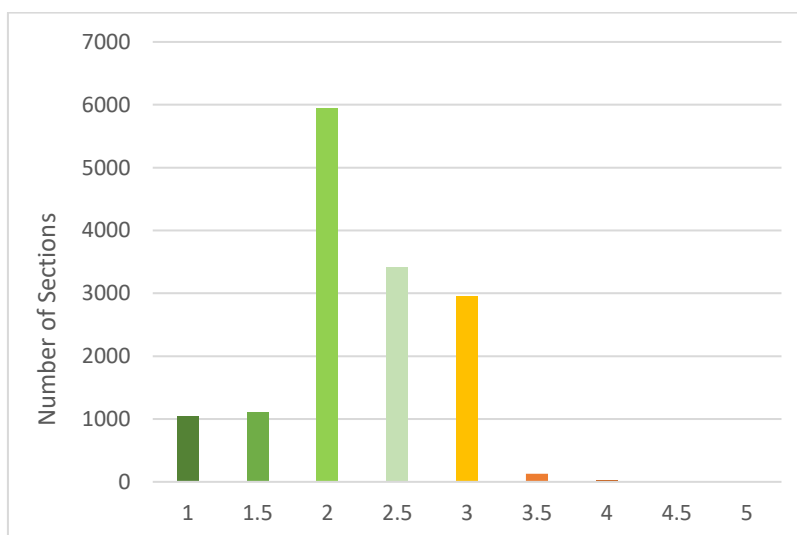
Graph 6.3.3 demonstrates that a focus on treating the roads lengths in the mid 7 condition range identified through the 2019 audit has resulted in the general condition improving in 2023.

KERBS

The condition of our kerb network shows the condition of the majority of the network being 'good' to 'satisfactory'. The kerbing throughout the City is managed and maintained both as part of the road renewal program where on average approximately 40% of kerb is replaced, and through responding to customer requests.

Both of these programs focus on responding to water ponding to improve drainage and water flow during rainfall events.

Graph 6.3.4: 2023 Kerb Condition Audit Results



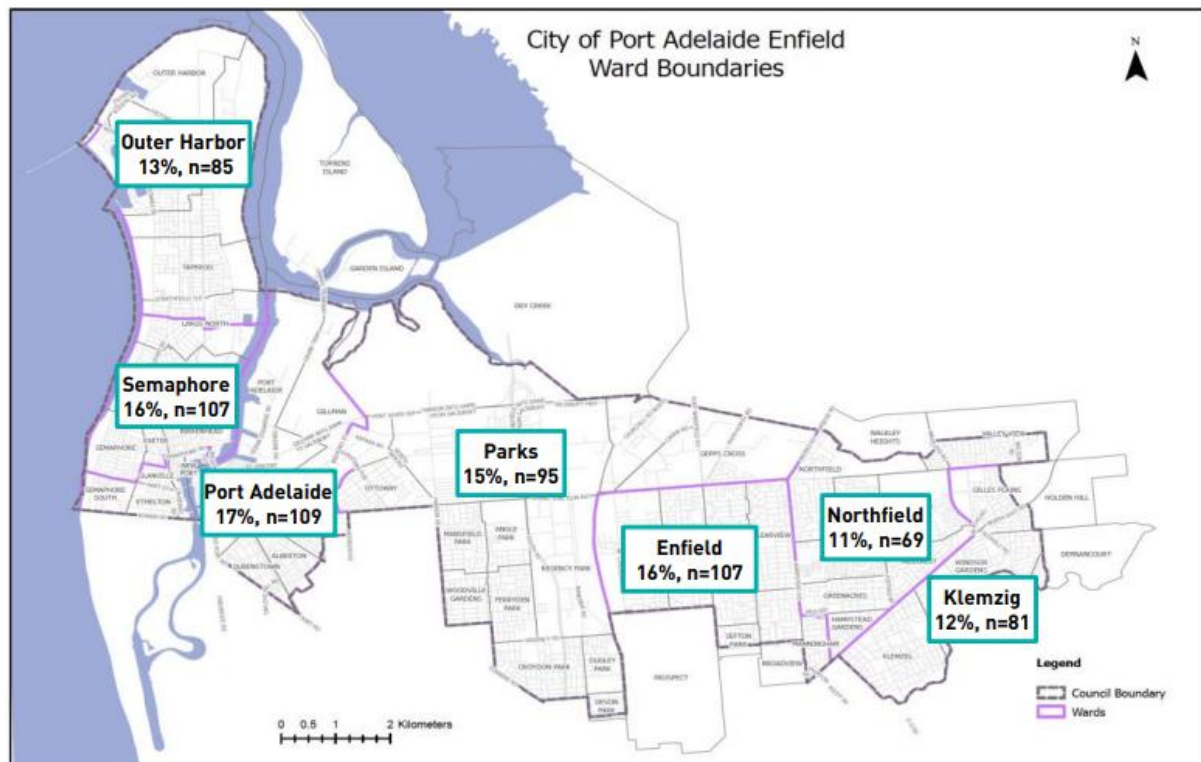
Note: The Kerb Condition data has an index range from 1 being good to 5 being poor.

7.0: LEVELS OF SERVICE

7.1: CUSTOMER RESEARCH & EXPECTATIONS

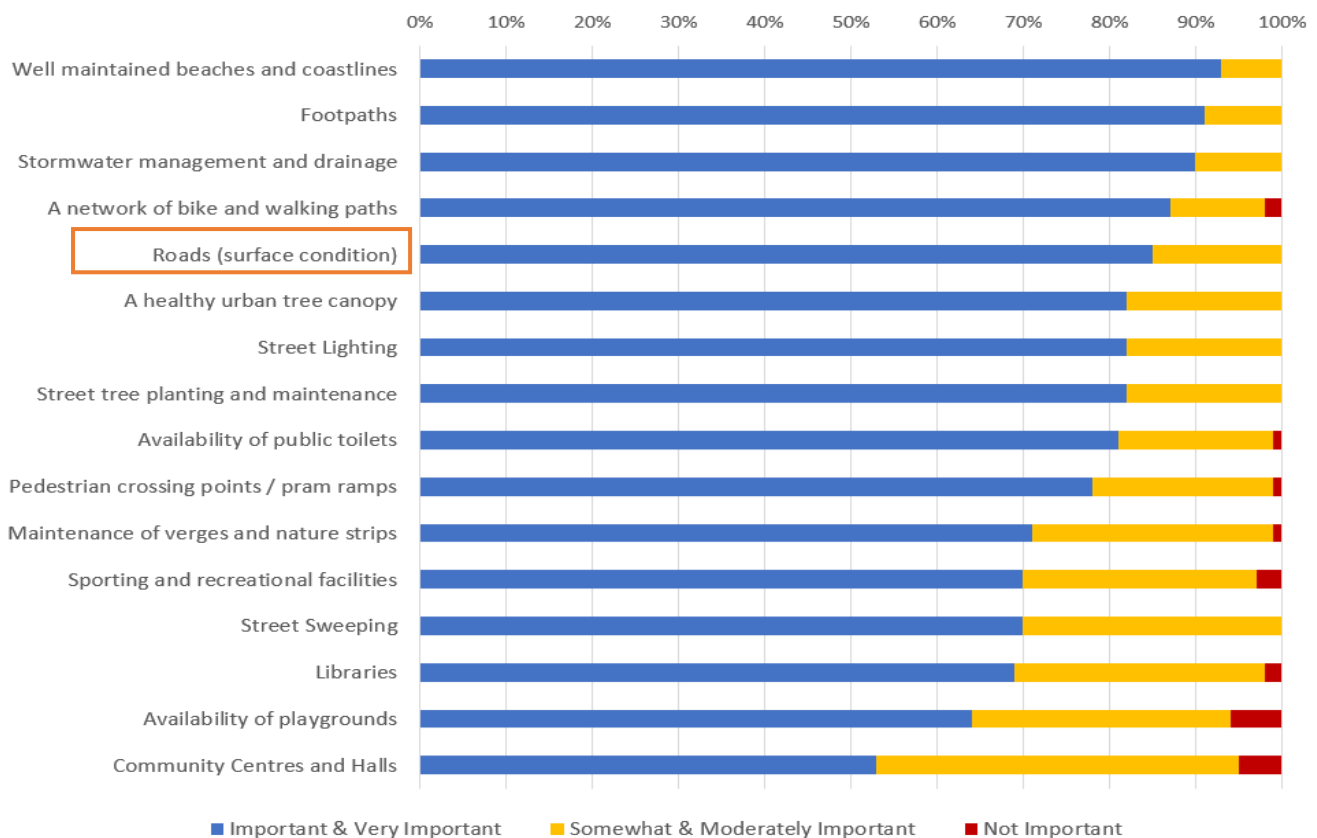
A recent Community Survey was undertaken between 12 September and 6 October 2023. The following is a snapshot of findings relating to our community's perception of services provided.

Image 7.1.1: 2023 Community Survey sample size by location and demography



	Age	- Under 40s (40%) 40 and over (60%)
	Household	- Families with children (42%) - Individuals and families with no children at home (58%)
	Length of residency	- Up to 10 years (41%) 10+ years (58%)

Graph 7.1.2: Community Perception by Importance



Graph 7.1.3: Community Perception by Satisfaction

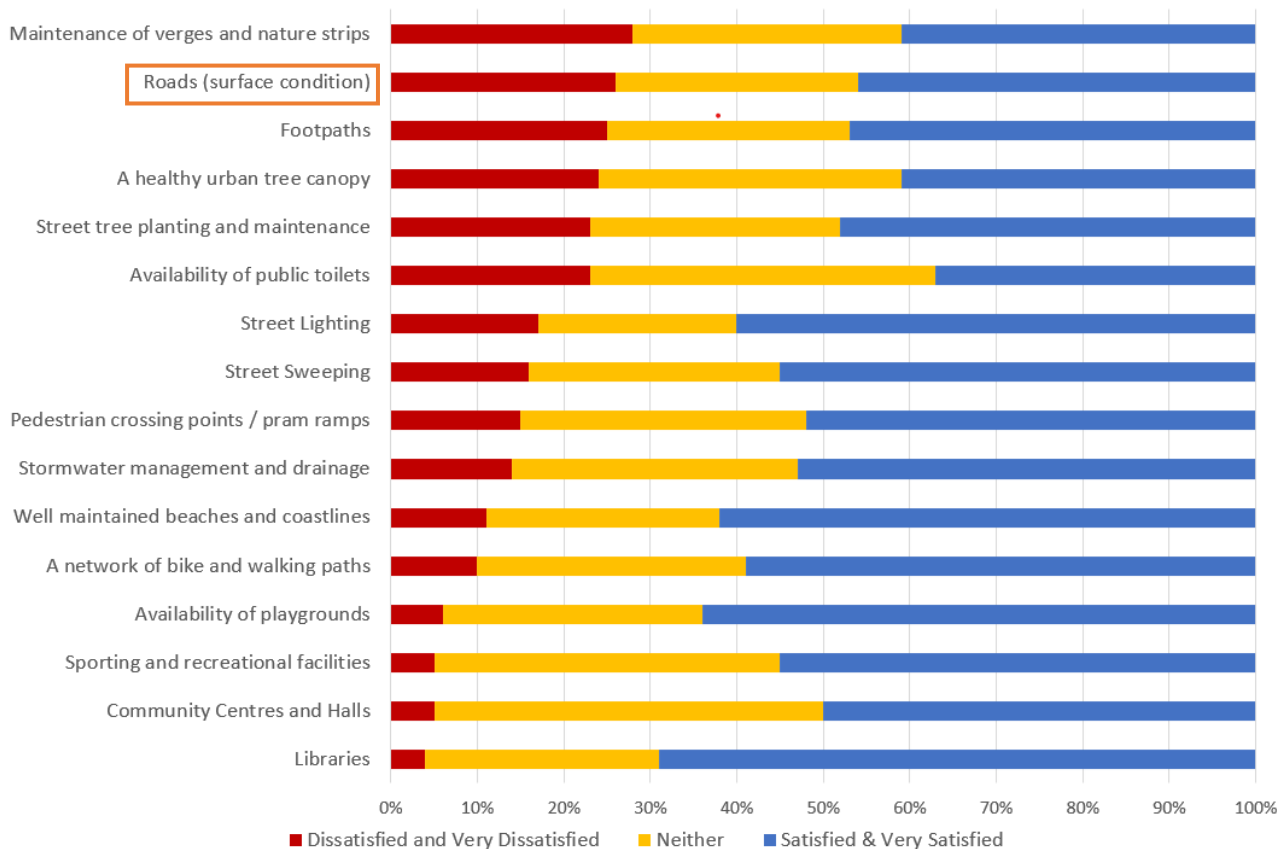


Image 7.1.4: 2023 Community perception of Road related Services relating to a range of Council services

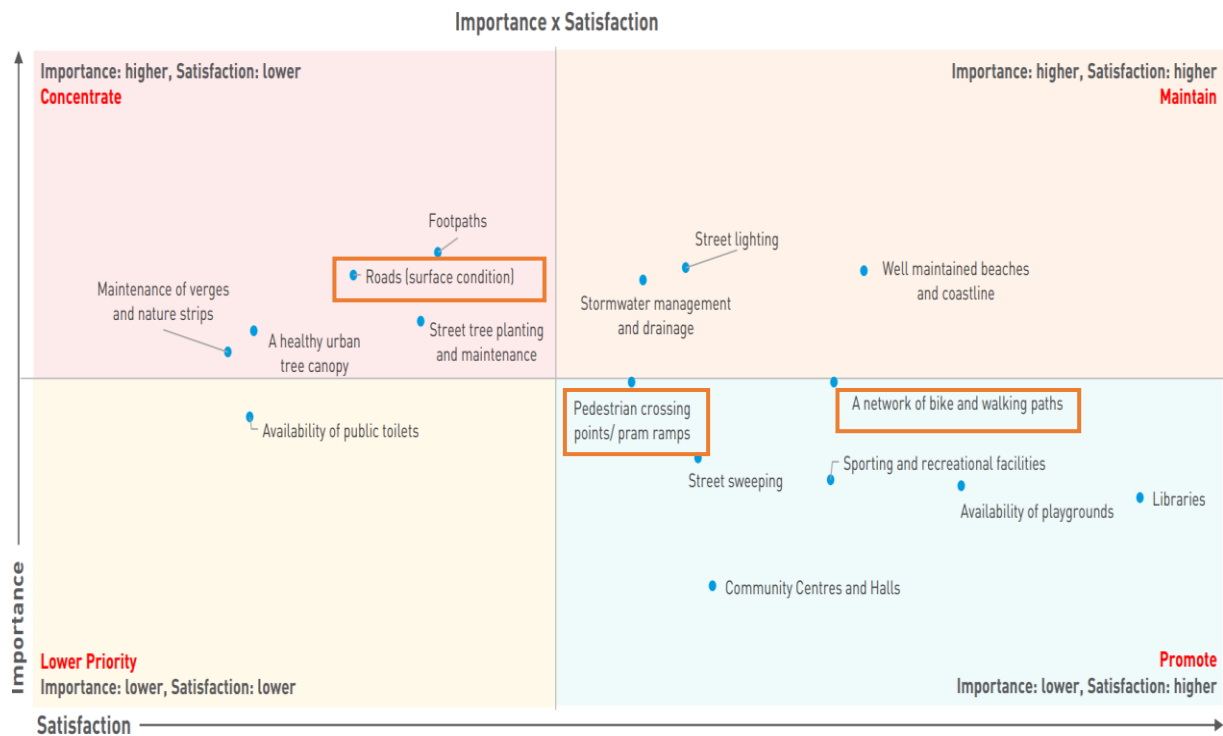


Image 7.1.5: 2023 Community perception - Roads related services: Importance

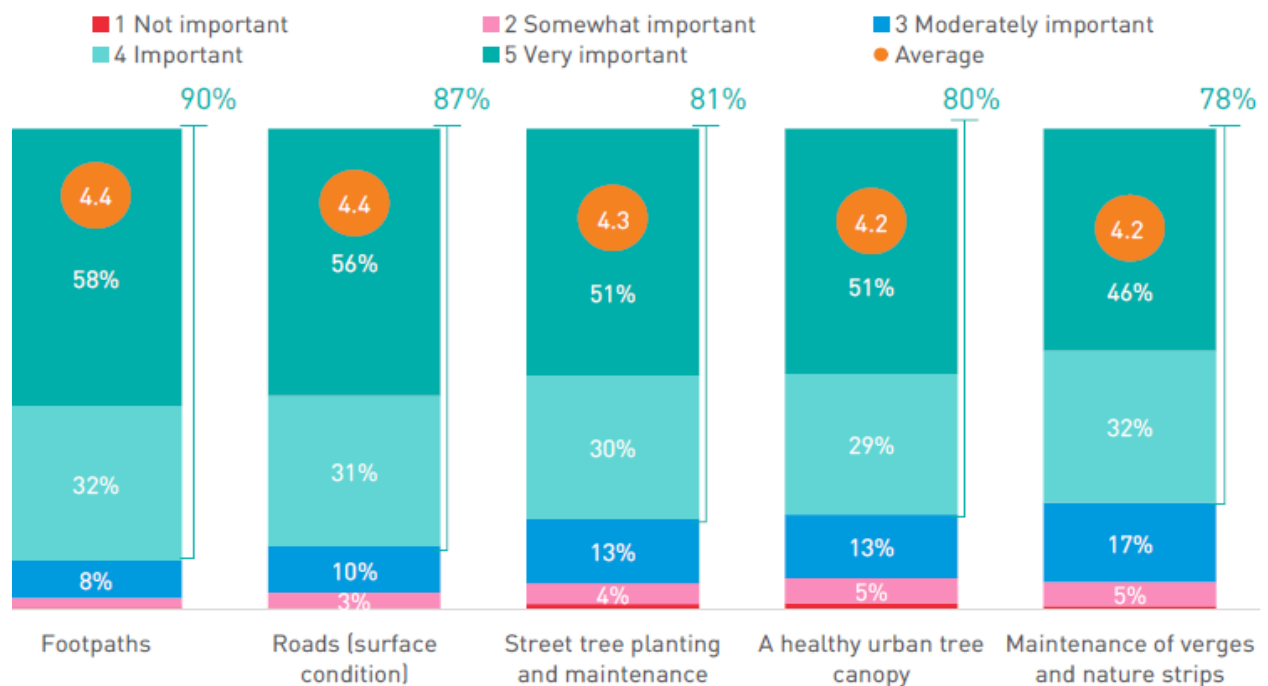
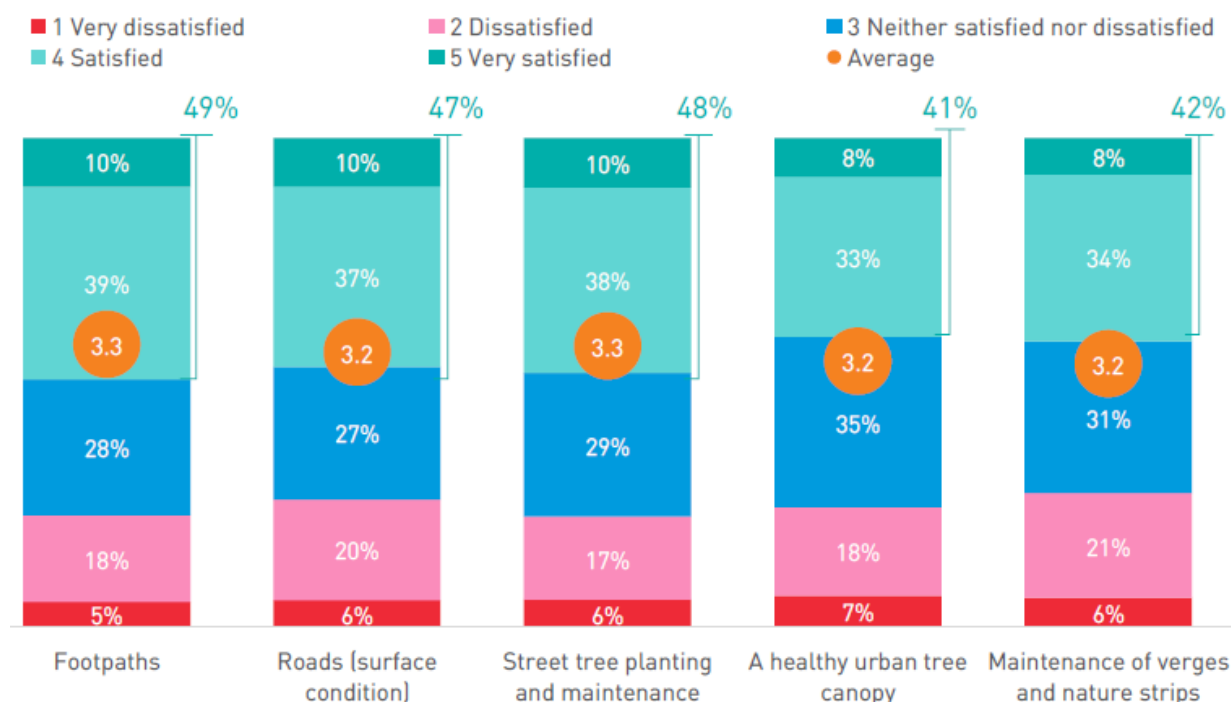


Image 7.1.6: 2023 Community perception: Satisfaction



Our community consider the road surface condition to have a high level of importance, with a lower level of satisfaction. A similar community perception survey was conducted in 2020 which demonstrated that the community opinion of road performance was in many cases directed towards arterial roads which are not under the care and control of Council. Having stated that, the road surface is understood to still be a highly valued asset to our community, and Council will continue to manage the road assets to support high levels of satisfaction.

The 2020 survey further indicated that traffic services such as signage and line marking quality is also considered important. In 2020 the community displayed a mid-level sense of importance for controlling traffic speed but also expressed a higher level of dissatisfaction towards this issue. Although a mixed outcome this still presents a general concern to safety and indicates Council should continue to work to reduce traffic speed in local areas.

Table 7.1.1 depicts all recently completed and commenced Local Area Traffic Management (LATM) projects, along with current studies, and those endorsed for future years. This LATM strategy was endorsed by Council in March 2019 and is continually updated as priorities change.

Table 7.1.1: Local Area Traffic Management projects

Completed / Commenced LATM's (From 2013/14)	Committed LATM's (2023/24)	Future LATM's
Kilburn	Manningham	Lightsview, Northgate, & Oakden
North Haven	Largs Bay / Largs North	Port Adelaide
Enfield South (inc Broadview & Clearview)	Gepps Cross, Northfield, Valley View	Semaphore, Glanville, Exeter, & Ethelton
Northfield		Osborne & Taperoo
Greenacres		Blair Athol
Enfield Central & North		Mansfield Park, Woodville gardens, Ferryden Park, & Angle Parks
North South Corridor		

Further to Road and Traffic Management infrastructure, we also recognise the potential of walking and cycling as sustainable and health-promoting alternative for transportation. The 2020 survey revealed a growing interest in pedestrian crossings, ramps and a network of walking and cycling paths, which aligns with our goal to create safer, more walkable, and bike-friendly neighbourhoods.

The City of Port Adelaide Enfield is committed to delivering its targets set out in the Walking and Cycling Plan. The plan aims to expand and maintain pathways and bike lanes, ensuring they are well-connected and easily accessible. This will include continuing support for improved signage, other bike and pedestrian friendly infrastructure and line marking to further encourage more residents to consider walking and cycling as viable alternatives for their daily commute. This shift not only reduces traffic congestion and speeding concerns, but also contributes to a greener, more active community. Council will prioritise these initiatives, striving to elevate satisfaction levels and promote a healthier, more connected city for all.

7.2: MEASURING CUSTOMER REQUESTS

In addition to the Community perception survey, Council also tracks the number of Customer Requests received for work relating to roads and traffic. The graph and tables below show the trends in number of customer requests created over the last 4 year period. The trends for the majority of services continue to show that the number of requests received have remained stable year on year.

On average, Council receives 27 customer requests a week for road condition (around 5.5 per work day). Collectively Roads and Traffic management is one of the most significant areas of community interest.

The stability of customer requests for many services reflects our ongoing efforts to deliver both capital and maintenance programs, including the focus on responding to and resolving actions arising from customer requests in a timely manner.

Graph 7.2.1: Comparison of Customer Requests by Year

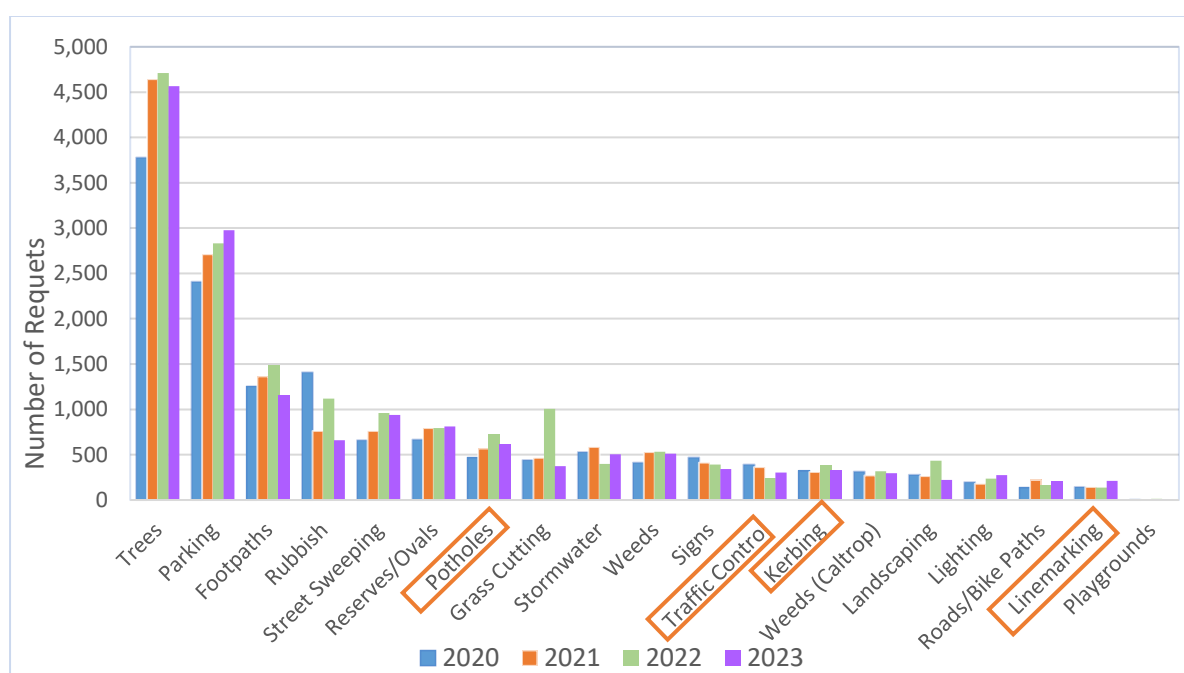


Table 7.2.1: Potholes, Traffic Control, Kerbing, and Line Marking Customer Requests by year

	2020	2021	2022	2023	Average
Number Requests	1,324	1,383	1,480	1,451	1,410

7.3: MEASURING PERFORMANCE

An example of service level performance that has been established for some time relates to potholes, where Council has established two response standards for responding to pothole customer requests:

- 85% of customer requests relating to potholes completed within 10 Days annually.
- 90% of priority repairs are made safe within four days annually.

Graph 7.3.2: Measuring Performance of Community Requests against Service Standard time for Pot Holes.

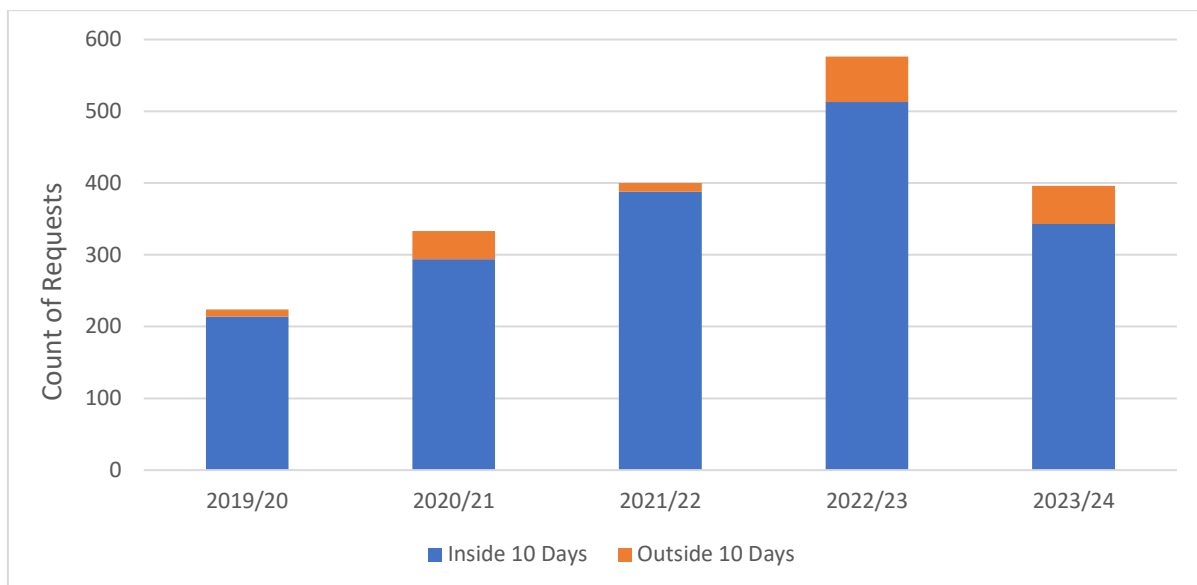


Table 7.3.3: Performance Measures for Potholes

	Inside 10 Days	Outside 10 Days	Percent complete within 10 days
2019/20	214	10	95%
2020/21	294	39	88%
2021/22	388	12	97%
2022/23	513	63	89%
2023/24	343	53	87%

We continually measure our operational standards, ensuring that Customer Requests are efficiently responded to and that our network is appropriately maintained. Table 7.3.3 demonstrates that pothole requests are consistently responded to within the established service standard of 10 days, and that the response standard of '85% of customer requests relating to potholes completed within 10 Days annually' is being met year on year.

7.4: COMMUNITY LEVELS OF SERVICE

Councils use their assets to provide services for the betterment of their communities. Whether it is evident or not, all assets provide a 'level of service' to the community. Well defined levels of service can be used to:

1. Provide information about the current level of service being provided;
2. Measure performance against the identified level of service; and
3. Consider options to adjust service levels (if desired or appropriate).

A key objective for PAE is to manage our assets and finances with good stewardship, and to match the levels of service we provide with the expectations of our community.

The table below sets out our levels of service relating to Roads:

- **Criteria:** Describes the category of service levels, consistent across all asset classes.
- **Community Level of Service:** describes the service from a customer's point of view. In other words, it helps to explain what PAE intends to provide. (Note: Asset Community Level of Service in this context is distinct from Customer Service response time).
- **Technical Level of Service:** Describes how PAE achieves delivery of the Community Level of Service. In other words, it explains what PAE will do at an operational level.
- **Performance Indicator:** Describes the metric by which success in service delivery will be assessed.
- **Key strategic relationships:** Describes the key PAE strategies and plans that each service level is aligned to.

Whilst there have been some community and technical levels of service in place across all asset classes, a recent comprehensive review of these service levels has resulted in improving categorisation, articulation and documentation of service levels and indicators for all asset classes. An area of focus for future improvement is to refine, monitor and report on performance indicators and use this information as key inputs into the ongoing review of levels of service and resultant investment in capital and maintenance programs.

Criteria	Community Level of Service <i>How community receives the service</i>	Technical Level of Service <i>How the community service level is achieved</i>	Performance indicator	Key strategic relationships
Function	Our road network is accessible and well-connected.	Ensuring that planning, design, construction and maintenance of roads enables efficient traffic movement.	Deliver Local Area Traffic Management, Walking and Cycling and Integrated Transport Projects as committed in annual business plans.	City Vision: Places for People —'We shape the City to be attractive and liveable and care for our built heritage.' Integrated Transport Strategy
Condition	Road network provides suitable conditions for expected level of	Ensuring average network condition is maintained to at	Achieve an average road network Condition Score of 7.7.	City Vision: Places for People —'We shape the City to be attractive and

	use in varying weather.	least 'Good Condition'.		liveable and care for our built heritage.' Integrated Transport Strategy
Safety	Road network is maintained in an appropriate condition to cater for safe use. Customer Requests are responded to promptly and efficiently.	Rating the condition of our road network every four years, and programming all major defects for maintenance or replacement.	85% of general repair / pothole work orders completed within ten Days annually. 90% of priority repair work orders completed within four days annually. A Condition Audit performed every 4 years	City Vision: <i>Places for People</i> —'We shape the City to be attractive and liveable and care for our built heritage.'
Environmentally Sustainable	Our Carbon footprint is reduced	Consider the use of environmentally sustainable alternatives, where this doesn't materially negatively impact on condition, cost or useful life.	A minimum of 80% recycled or reused materials in road base A minimum of 30% Reclaimed Asphalt Pavement (RAP) in asphalt	City Vision: <i>Clean and Green City</i> —'We reduce the City's adverse environmental impact and participate in a circular economy.' Living Environment Strategy Net Zero Emissions Plan
Financially Sustainable	Our roads program is structured to ensure that today's asset users contribute fairly to the lifetime cost of the asset.	Ensure the current cost of managing our road network achieves community expectations while also balancing renewal works with consideration of future budgets.	Asset Renewal Funding Ratio is within identified target range on average over four-year period (LGA target = 90%<110%).	City Vision: <i>Organisational Capability</i> —'Our assets and finances are managed with good stewardship.'

8.0: ASSET CRITICALITY

Asset Criticality is defined as those assets which have a high consequence of failure (but not necessarily a high probability of failure); assessed against those assets which are the most important for delivering the required service. (Definition provided by IIMM).

Criticality is assessed on a 1-5 scale with 5 considered to have the highest consequence in the event of failure. Along with other key data and information including Levels of Service and Condition data, Criticality will be used to prioritise resourcing and future investment into capital and maintenance programs. As a priority focus area, any assets assessed as being in poor condition that are considered to have major or catastrophic consequences will be prioritised for treatment.

Table 8.1.1 summarises the Asset criticality assessment across all of PAE's major asset classes.

Table 8.1.1: Criticality Score against all Major Asset Classes.

Asset Class	Average Criticality Score (by service provided)
Stormwater	4.01
Pump Stations	3.72
Roads	3.59
Footpaths	2.91
Open Space	2.89
Buildings	2.75

High Criticality						Low Criticality
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To evaluate the criticality of an asset, the service delivered by a type of infrastructure was considered against Council's Risk Consequence Table. The consequence of Community wellbeing, the environment, safety, service, and financial exposure was evaluated to provide a criticality score. Table 8.1.2 provides various services grouped as cohorts that were assessed to understand the consequence of service failure. The above table 8.1.1 provides the average score of the various cohorts assessed within each asset class.

Due to the severity of injuries caused through vehicle related accidents, roads are the third highest asset class on the criticality table. Failure with line marking, signage condition and or visibility, and motorist speeding instances were considered to have the highest consequence of service failure.

Intersections and rail crossings were all considered to have a major safety concern. Yellow Box (hatch) marking across rail intersections to prevent cars from queuing within a rail corridor is also an important service with a high consequence if ineffective.

A rail crossing audit of signage and line marking is reviewed annually. Being pro-active ensures that these services are prioritised.

Table 8.1.2: Criticality by Road Cohorts

Road Cohorts		Rounded Criticality Service Score	Major Consequence Driver
1	Line marking	4	Safety
2	Traffic Control - Volumes	2	Reputation
3	Traffic Control - Speeding	4	Safety
4	Minor Rd Surface Condition	3	Safety
5	Collector Rd Surface Condition	3	Safety
6	Industrial Rd Surface Condition	3	Safety
7	Intersection Signage	4	Safety
8	Rail Crossing Signage	4	Safety
9	Rail Crossing Yellow Box marking	4	Safety

The various cohorts represent road surface condition and operational factors that can impact the service delivery of our road network.

Image 8.1.1 provides a priority ranking for each cohort, measuring condition against consequence.

Image 8.1.1: Consequence by Condition Matrix

Consequence	Criticality Group	Condition 1 (Excellent)	Condition 2	Condition 3	Condition 4	Condition 5 (Very Poor)
Catastrophic	5					
Major	4		3, 7, 8	1, 9		
Moderate	3		4, 5, 6			
Minor	2		2			
Insignificant	1					

Note: The Criticality Group numbers relate to Road Cohort references in table 8.1.2

Priority 1	Priority 2	Priority 3	Priority 4
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Line marking (1), speeding (3), with intersection and rail crossing signage and marking (7, 8, & 9) were assessed as having a major consequence of failure. Should any of these cohorts begin to represent a worst condition score of 3 or greater (i.e. condition of less than satisfactory), then action will be prioritised to return the cohort to a good condition.

This is the first stage of assessing criticality of infrastructure types within Council and will provide opportunity to expand in future AMP editions. Future analysis will inform our decision-making process when planning infrastructure projects and maintenance activities.

Future analysis will inform our decision-making process when planning infrastructure projects and maintenance activities.

9.0 RISK

The identification of risks that can impact the delivery of service is an important component of our decision making. As part of Council's internal Asset Management process, the Roads Custodian Group meets annually to identify new risks and review existing risks treatments, using PAE's Risk Management Framework. Project Managers then refine risks for each project at the commencement of each project throughout the year.

A governance model is in place to oversee ongoing monitoring and escalation of asset related risks, ensuring that residual High and Extreme risks are considered by the Asset Management Steering Group and escalated to corporate risk committees to consider appropriate options for treatment.

Image 9.1.1: City of PAE's Risk Assessment Matrix

Risk Rating		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	Almost Certain					
	Likely					
	Possible					
	Unlikely					
	Rare					
		Low	Medium	High	Extreme	

Image 9.1.2 demonstrates the number of inherent risks assessed by the Roads Custodian Group, and the reduced residual risk following existing treatment controls. The calculation of risk is based on both likelihood and consequence, as depicted in image 9.1.1.

Image 9.1.2: View of identified Risks following assessment and treatment control

Inherent Risk Rating					
Consequence / Likelihood	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost Certain (5)	RD_0011 RD_0012		RD_0025.1	RD_0001 RD_0025.2 RD_0028	
Likely (4)		RD_0008 RD_0010 RD_0023	RD_0005.1 RD_0007 RD_0009.1 RD_0017 RD_0021 RD_0024	RD_0006	RD_0026 RD_0029
Possible (3)	RD_0013.1 RD_0018	RD_0013.2 RD_0015 RD_0019	RD_0002 RD_0003 RD_0004.2 RD_0005.2 RD_0009.2 RD_0016 RD_0020		RD_0004.1
Unlikely (2)	RD_0014	RD_0022			
Rare (1)					

Residual Risk Rating

Consequence / Likelihood	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost Certain (5)					
Likely (4)		RD_0006			
Possible (3)	RD_0012	RD_0004.1 RD_0004.2 RD_0008 RD_0010 RD_0025.2 RD_0028	RD_0009.1 RD_0017 RD_0025.1		
Unlikely (2)	RD_0011 RD_0013.1 RD_0023	RD_0002 RD_0003 RD_0005.2 RD_0007 RD_0009.2 RD_0013.2 RD_0015 RD_0019 RD_0024 RD_0026	RD_0005.1 RD_0016 RD_0020 RD_0021	RD_0001 RD_0027 RD_0029	
Rare (1)	RD_0014 RD_0018 RD_0022				

The risks assessment for the Road asset class identified five 'extreme' Inherent Risks. The residual risk summary demonstrates these extreme risks have been effectively mitigated to a moderate level through a range of treatments which will continue to allow our community to move and connect through our road network safely and efficiently. No additional risk treatments are considered necessary for these risks.

Table 9.1.1 below, provides a summary those inherent risks assessed as Extreme, and shows the existing treatments to reduce the risk to Moderate.

Table 9.1.1: Risks identified as Extreme with existing treatment.

Risk ID	Description	Consequence Description	Inherent Risk	Treatment	Residual
RD0001	Not having adequate budget to match road consumption	Risk of future financial exposure >20% due to damage of road base requiring greater reconstruction activity. There will also be an increase to reactive maintenance budget.	Extreme	Condition rating every 4 years with condition data a key input into the 'Pavement Model' within the Asset Management System. Analysis of data input to 4 year AMP review. LTFP informed by AMP ABP&B to match year 1 of LTFP.	Moderate

				Adequate maintenance budgets to ensure maintenance issues are resolved quickly.	
RD0025	Inconsistent implementation of traffic control within road network	The current LATM program delivery could incur additional expenses.	Extreme	Appropriately trained engineers providing advice regarding the installation of traffic control devices. Area wide traffic control devices being considered as part of Local Area Traffic Management (LATM) schemes.	Moderate
RD0026	Approving use of local roads by heavy Vehicles without understanding load capacity of bridge culverts under NHVR (National Heavy Vehicle Regulator)	Bridge Culvert design load bearings insufficient to cater for heavy vehicle movements. Serious injury to heavy vehicle operator and other traffic or people. Damage to Council culverts causing blockage to channels. A culvert collapse could likely incur litigation, and future budgets may exceed storm water culvert replacement budget of >30%.	Extreme	Tier 1 and tier 2 condition and load assessments commenced for all culverts under local roads along heavy vehicle routes. This identifies culverts that need replacement and reject permit applications where routes are not suitable or safe due to the condition or suitability of existing infrastructure. To develop a culvert design and replacement program across future years.	Moderate
RD0028	Major Development Design - Inadequate Technical Engineering expertise represented at Major Project Group meetings to assess design issues and ensure effective responses by developers	Major developments are delivered with poor design outcomes which can lead to significant future capital and operational costs to Council.	Extreme	Experienced Technical Engineering expertise attend key meetings eg Major Projects Group, when major development designs are being assessed. Design and construction matters/issues captured in meeting minutes which are tabled with Executive. Early and ongoing engagement with developers which enables stronger support when negotiating acceptance of infrastructure.	Moderate

RD0029	Vegetation obstructing traffic devices and signage	Signs are not clearly visible which may cause accidents, and result in damage to vehicles, property and potential injuries/fatalities	Extreme	All trees currently visually inspected every 2 years. Maintenance where required. Customer Service Requests for tree pruning which are actioned in a timely manner.	Moderate
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10.0: DEMAND

10.1: DEMOGRAPHIC TRENDS

All tables and graphs within Section 10.1 have been sourced through ‘Population and household forecasts, compiled by informed decisions’.

Graph 10.1.1: Projected Population Increase

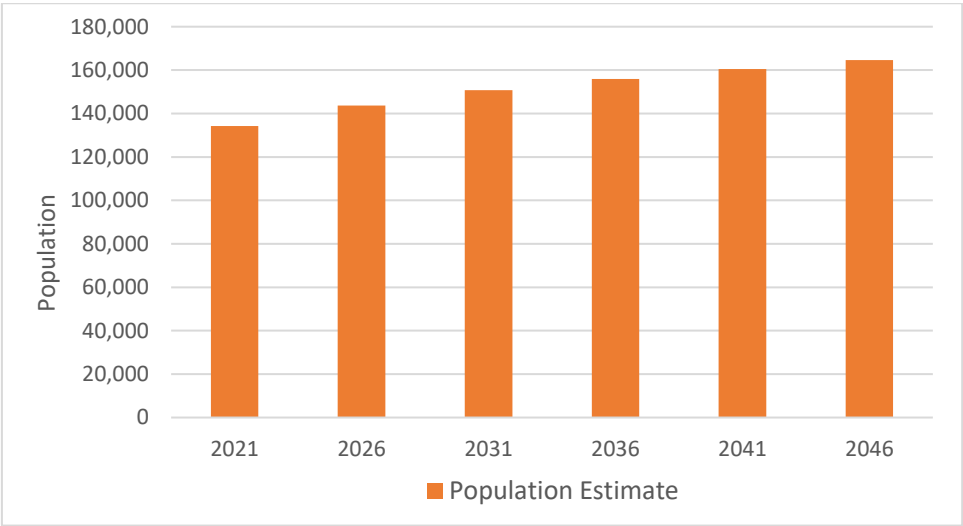
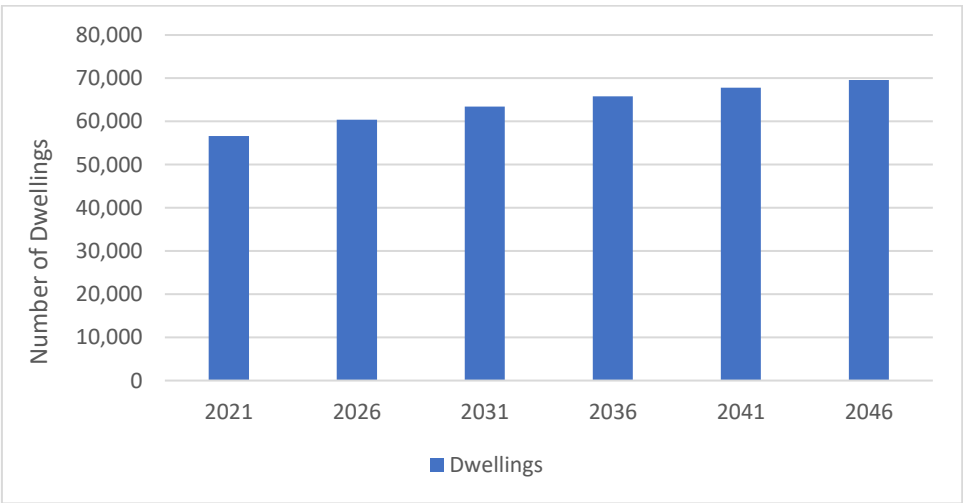


Table 10.1.1: Projected Population Increase

	Total
Population 2021	134,192
Population 2046	164,684
Change 2021-2046	↑ 22.7%

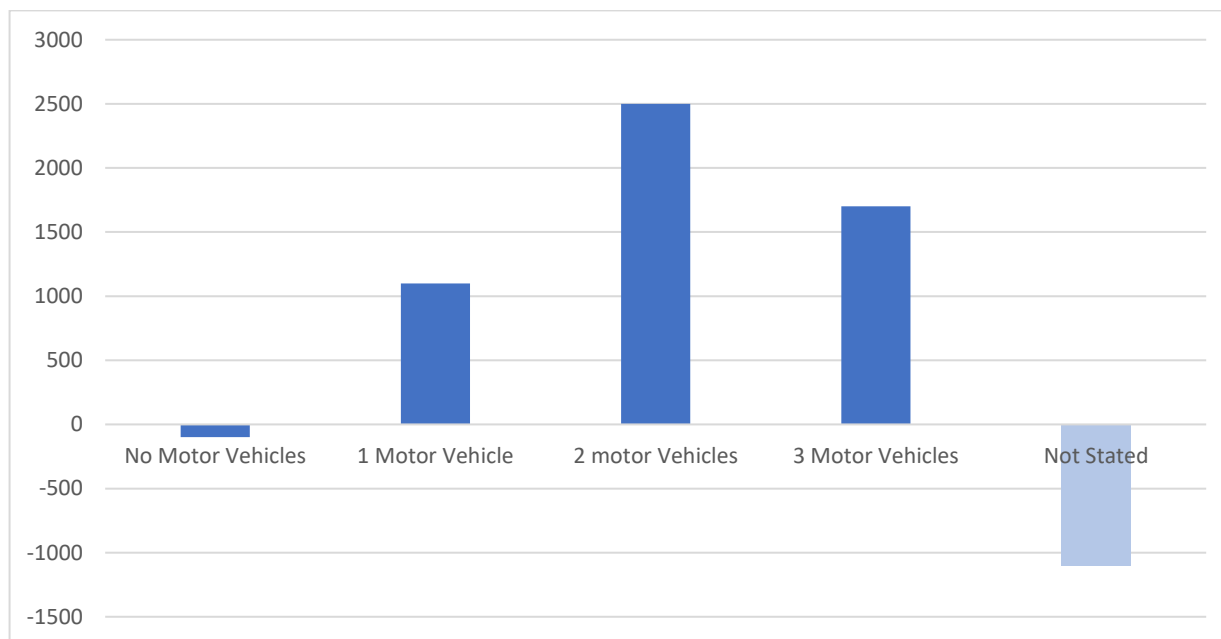
Graph 10.1.2: Projected Number of Dwellings



Based on the last Census undertaken in 2021, our population will have grown by approximately 22% from 134,000 to 164,000 over a projected 25 year period. The number of dwellings is also anticipated to increase, from 56,642 to 69,606. This will be through both infill development (i.e. 1 existing allotment into 2 or more) and through greenfield new residential development such as Oakden Rise.

Higher population with more housing will impact our road asset class through greater traffic wear on the road surface, and with smaller land frontages creating more crossovers there will be less opportunity for on street parking. The current trend of vehicle ownership suggests that most households will continue to accommodate 1 to 3 cars.

Image 10.1.3: Number of households with cars between 2016 to 2021



10.2: FUTURE DEMAND DRIVERS AND POTENTIAL IMPACTS

Drivers affecting demand include:

- Population change
- Demographic change
- Seasonal factors
- Consumer preference and expectations
- Technological changes
- Economic factors
- Environmental and climate change awareness

Image 10.2.1 is a snapshot of the broader social and environmental demand factors that have been identified through reviewing Council's library of strategic plans and consideration of market and social trends.

The continued infill development across our City will result in limited on street parking, given smaller frontages and more cars.

Climate Change and rainfall intensity may result in more road surface defects, through the oxidation of the road surface along with the expansion and shrinking of sub surface.

There will likely also be a rise in future asphalt cost due to global oil price increases.

Image 10.2.1: Current and future demand factors

Demand Driver Type	Primary Factor	Relationship	How this will impact current operations
Infill development	Limited On Street Parking – Smaller frontages & more cars	Urban design	Traffic Management through local streets will need an increased focus. Increase in resident complaints.
Infill development	Road surface damage by new service trenching and poor reinstatement	Finance (depreciation)	Roads not achieving expected life
Infill development	More traffic control, ie roundabouts, line marking, safety bars	Maintenance	Increased maintenance – kerb repair and line marking
Surface temperatures	Road surface a significant contributor to surface temperature increase	Climate Adaptation	Increase tree canopy in streets. New asphalt cooling products/treatments
Defects	Road cracking and kerb lift through expansion and shrinkage of surface and sub surface through temperature variations	Climate adaptation	Increase maintenance -kerb and road surface repair. Reduced life in road assets – potential increase in depreciation
City Growth	New assets	Urban design	Increased resourcing required for asset management. Additional maintenance & asset renewal
City Growth	Increased Traffic, Air Quality	Population increase, Economic Development	Increased community complaints (traffic, noise, and air quality)
Financial	Asset deterioration through increase traffic, Environmental impacts, more infrastructure	Community	Impact to capital and maintenance budgets and potentially not achieving community levels of service.
Financial	Global Oil Price	Environment	Increase to material costs (asphalt). Increase to operational costs.
Technology	Electric charging stations	Car parking Environment	Loss of car parking in commercial precincts
Technology	Driverless vehicles	Asset life	Vehicles following same wheel path, creating rutting impacts.
Safety	Vehicle speed limits on urban roads	Traffic	Potential reduction in speed limit in-line with community expectations.
Technology	Demand for alternative forms of transport	Demographic – Social Trends	Use of electric/alternate transport modes – conflict between transport modes

11.0: INVESTMENT

11.1: FAILURE MODE AND EFFECTS ANALYSIS WITH EXPENDITURE TYPE

Image 11.1.1: Failure Mode and Effects Analysis

Service Provision	Failure Mode	Effects	Remedy	Expenditure Type	Action Type
Road network is maintained in an appropriate condition to enable safe use in varying vehicle types. City Vision: Thriving Community—'We promote community capacity, connection, and participation in civic life.'	- Pot Hole, - Depression, - Structural failure (environmental cracking). - Rutting - Edge Cracking - Kerb Lift - Ravelling	Isolated Surface Defects - Damage to Vehicles - Structural damage to subbase through water penetration. Traffic Impacts - Accident - Reduction to Braking (slip/skid)	Patching Profile and patch	Maintenance	Proactive Reactive
		Kerb Lift – water ponding	Dig Out & Cut Roots Relay	Maintenance	Reactive
		Numerous defects in street segment	Reshape Reseal or Reconstruction	Capital	Proactive
	- Service authorities - Builders damage	- Depression - Rideability of surface - Water ponding	Liaise with service authority or builder to recompact and Patch	Other (third party)	Reactive
	Line Marking	- Confusion of traffic requirements - Accidents	Re-Paint	Maintenance	Proactive Reactive
	Signage- broken or obscured	- Confusion of traffic requirements - Accidents	Remove and Replace if damaged or missing Remove Obstruction (ie tree pruning)	Maintenance	Reactive
	Ground Movement	Distortion	Reconstruction	Capital	Proactive
	Traffic Speed	Potential accidents	Traffic study with planned traffic control design	Capital	Proactive
	Traffic Volumes	Complaints	Traffic Study with planned traffic control design	Capital	Proactive Reactive

The Failure Mode and Effects Analysis (FMEA) as provided in table 11.1.1 provides a view of the effect from a failure mode, and what remedy is considered by Council to correct the failure. The expenditure type that relates to the remedy provides context to the following tables under subsection 11.2.

11.2: REVIEW OF PAST EXPENDITURE

Maintenance

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. Maintenance includes all actions necessary for retaining an asset to an appropriate service condition – which includes pothole rectification, patch and relay, kerb reinstatement, traffic control surveys, traffic signage, and refreshing line marking.

Our investment in Road and Kerb maintenance over the past 4 years is summarised in Table 11.2.1.

Table 11.2.1: Comparison of 2020 AMP proposed budget with network and CPI growth v's Actual Spend per financial year.

Year	2020 AMP Proposed Spend	Annual CPI %	Cumulative CPI %	CPI Adjustment	Actual Road	Actual Kerb	Total Actual Road & Kerb
2020/21	\$2,391,900	na	na	\$2,391,900	\$1,401,829	\$845,433	\$2,247,262
2021/22	\$2,403,860	2.75%	2.75%	\$2,469,966	\$1,677,480	\$1,049,807	\$2,727,287
2022/23	\$2,415,879	6.40%	9.15%	\$2,636,932	\$1,412,037	\$1,121,924	\$2,533,961
2023/24	\$2,427,958	6.90%	16.05%	\$2,817,645	\$1,441,067	\$897,554	\$2,338,621
Total Investment				\$10,316,443	\$5,932,413	\$3,914,718	\$9,847,131

In addition, investment in traffic device maintenance is summarised in table 11.2.2 below. This category has been separated as this expenditure generally relates to gardening maintenance in traffic control devices, traffic studies, sign replacement, and replacement of line marking.

Table 11.2.2: Actual Spend in Traffic Maintenance per financial year.

Year	Signage & Signals	Line Marking	Traffic Control Streetscapes	Total Traffic Device Management
2020/21	\$696,737	\$478,406	\$852,356	\$2,027,499
2021/22	\$584,673	\$493,411	\$836,162	\$1,914,246
2022/23	\$584,544	\$539,144	\$915,089	\$2,038,777
2023/24	\$521,230	\$533,794	\$834,924	\$1,889,948
Total Investment	\$2,387,184	\$2,044,755	\$3,438,531	\$7,870,470

The feedback received through the recent community market research indicated that the community places a high level of importance on a well-managed and maintained road network. In addition, the customer enquiry data demonstrates that road and traffic assets continue to be a class that reflects a

high level of interest and feedback from our community on a regular basis, particularly relating to potholes and parking concerns.

The feedback supports the need for ongoing investment in road and traffic device maintenance programs at existing levels with annual adjustments for CPI.

Capital

Capital investment is defined across two types of investment:

Renewal/Replacement expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original required service potential.

Upgrade/New expenditure is major work that provides an increase in design capacity, improves service potential, or creates a new asset. All of which will increase Councils operating costs through ongoing lifecycle management of the new or upgraded asset.

The capital investment over the past 4 years is summarised in Table 11.2.3.

Table 11.2.3: Comparison of 2020 AMP proposed Capital budget against Actual Spend per financial year.

2020 AMP Proposed Spend					Actual Capital Expenditure	
Year	Replace / Renew	Annual CPI %	Cumulative CPI %	Cumulative CPI Adjustment	Replace / Renew	Upgrade / New
2020/21	\$14,110,000	na	na	\$14,110,000	\$16,591,444	\$578,994
2021/22	\$14,180,550	2.75%	2.75%	\$14,570,515	\$14,745,667	\$4,566,524
2022/23	\$14,251,453	6.40%	9.15%	\$15,555,461	\$13,557,900	\$1,543,141
2023/24	\$14,322,710	6.90%	16.05%	\$16,621,505	\$18,134,971	\$814,740
Total Investment				\$60,857,481	\$63,029,982	\$7,503,399

11.3: PROJECTED INVESTMENT

Asset Renewal Funding Ratio (RFR)

The Australian Infrastructure Financial Management Manual (AIFMM) defines the Asset Renewal Funding ratio as:

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMM Financial Sustainability Indicator No 3].

The definition makes reference to the 'Projected Capital Renewal Expenditure' which for the Roads AMP has been calculated through:

- the analysis of data captured from programmed condition audits,

- projection of future renewal through roads pavement decision model
- comparison against the Annual Depreciation expense.

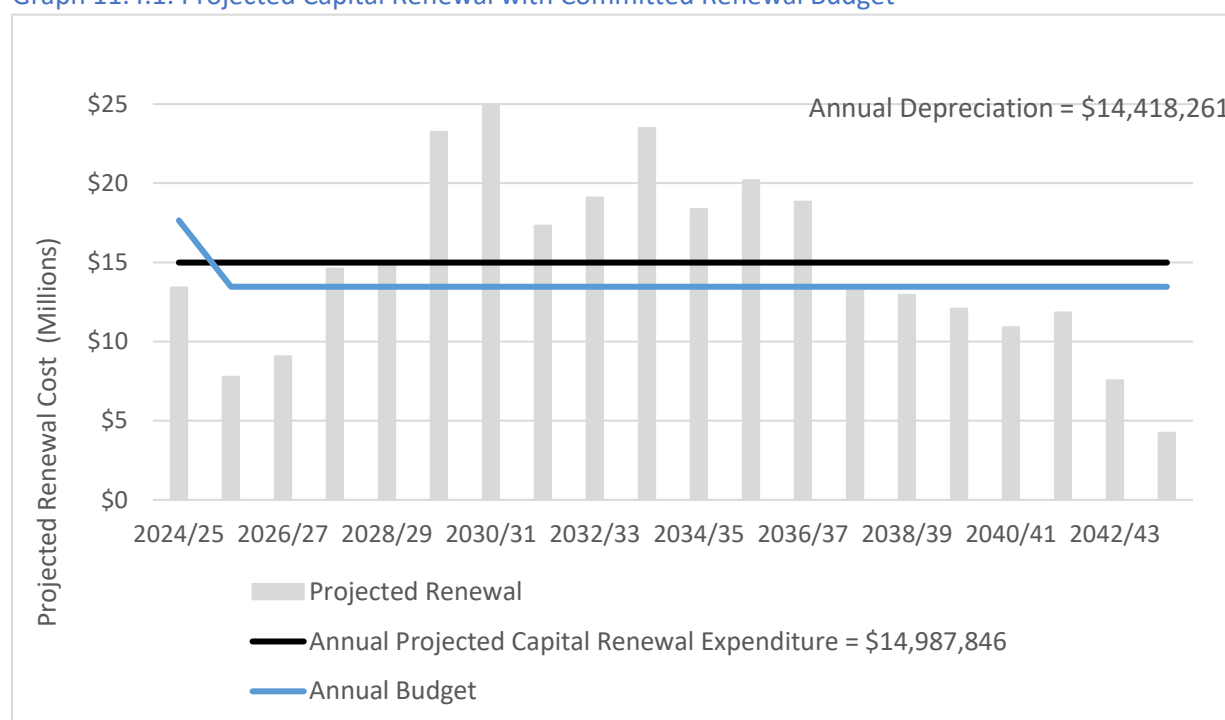
The Asset Renewal Funding Ratio indicates the percentage of expenditure in the Long Term Financial Plan (LTFP) relative to the 'Projected Capital Renewal Expenditure' in the AMP's. This ensures that infrastructure assets are being renewed in line with the AMPs, thereby maintaining service levels to the desired standard.

An Asset Renewal Funding Ratio of 100% in the LTFP means that PAE is budgeting to renew assets as projected by the AMP, resulting in assets being maintained at the lowest cost to the community.

11.4: PROPOSED RENEWAL INVESTMENT

This AMP is recommending that the expenditure of \$13,224,500 per annum (Present Value) be supported within the LTFP.

Graph 11.4.1: Projected Capital Renewal with Committed Renewal Budget



Graph 11.4.1 provides a projection of anticipated capital renewal, as provided by Council's pavement model (as discussed under Sub-Section 6.1). The grey bars identify the Projected Capital Renewal Expenditure required based on the current condition of the total network. The black bar is the average of the total renewal works projected at \$14,987,846 per year over a 20 year period.

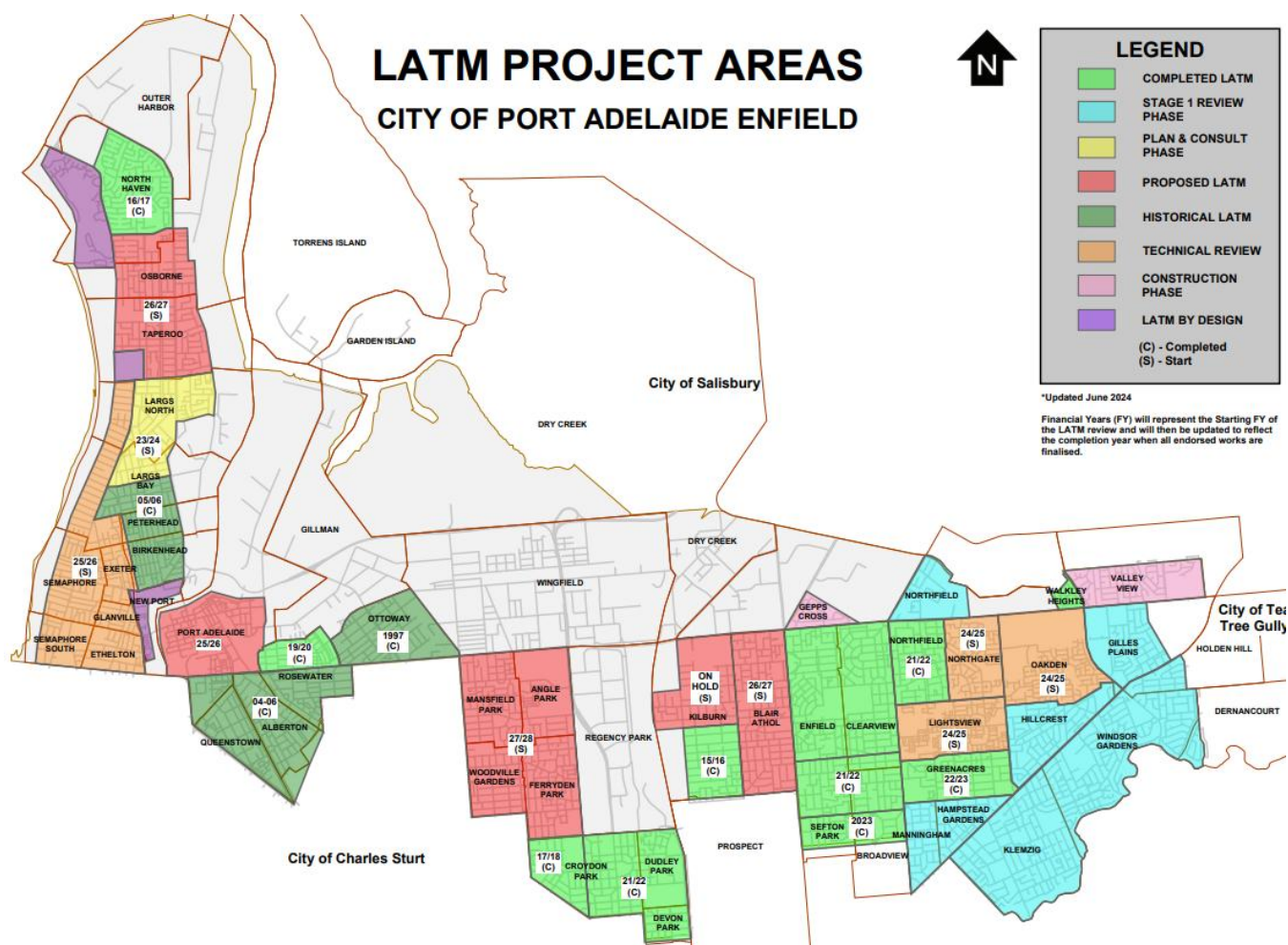
Using the condition data from the 2023 road condition audit, Council's pavement model identifies when each street segment within our network is due for renewal and calculates a cost of work based on varying decision factors such as vehicle type and loading, vehicle count, soil type, and length and width of each of these streets. The expense per year is the total cost of all streets combined.

No matter the renewal work projected for each year, the same budget of \$13.4M is recommended each year. This enables Council to manage the program over a number of years, with the associated peaks in expenditure smoothed to support financial sustainability.

The budgeted amount of \$13.4M will fund the 'Projected Capital Renewal Expenditure' at 90% of works calculated by the Pavement Model.

The difference in investment compared with the pavement model forecast is due to Council using a higher percentage of the rejuvenation treatment product which has proven to extend the life of roads in the Western Zone, and is a lower cost treatment when compared with traditional renewal treatment. Based on the proposed annual investment and the use of a mix of treatment options, it is expected that the road condition across the City will remain in the Good condition band, with a target average condition rating of 7.7.

11.5: CAPITAL UPGRADE – Local Area Traffic Management (LATM) Plan



Refer Appendix 2 for full page view

- The development of Local Area Traffic Area Traffic Management (LATM) Schemes is a proactive current supported initiative by Council.
- The above map indicates what has been completed and what is due to commence.

11.6: FOUR YEAR BUSINESS PLAN - CAPITAL UPGRADE & NEW PROJECTS

YEAR	MAJOR PROJECTS	BUDGET	TOTAL
2024/25	Military Rd & Bower Rd Pedestrian Improvements	\$150,000	
	Port Adelaide Train Station Access Improvements & Wayfinding Signage	\$250,000	
	5086 (LATM) - Completion	\$100,000	
	Largs Bay/Largs North (LATM)	\$50,000	
	All Traffic Control Hazardous Locations	\$400,000	
	Gepps Cross, Northfield & Valley View (LATM)	\$130,000	
	Integrated Transport Strategy Projects	\$100,000	
	Narrow Streets Projects - Policy implementation	\$75,000	
	Net Zero Emissions - Transport Initiatives	\$100,000	
	School Crossings - Signal Upgrade	\$50,000	
	Walking & Cycling Plan Projects	\$500,000	
	Way to Go Programme and School Safety Improvements	\$100,000	
	Annual Investment Total		\$2,005,000
2025/26	All Traffic Control Hazardous Locations	\$380,000	
	Narrow Streets Implementation	\$71,300	
	Integrated Transport Strategy	\$142,500	
	Walking & Cycling	\$380,000	
	Way to Go School Safety Improvements	\$95,000	
	School Crossings - Signal Upgrade	\$47,500	
	Largs LATM	\$665,000	
	Lightsview, Northgate & Oakden LATM	\$237,500	
	Traffic Control Devices	\$285,000	
	Annual Investment Total		\$2,303,800
2026/27	All Traffic Control Hazardous Locations	\$380,000	
	Narrow Streets Implementation	\$71,300	
	Integrated Transport Strategy	\$142,500	
	Walking & Cycling	\$380,000	
	Way to Go School Safety Improvements	\$95,000	
	School Crossings - Signal Upgrade	\$47,500	
	Semaphore, Glanville, Exeter & Ethelton LATM	\$190,000	
	Port Adelaide LATM	\$665,000	
	Traffic Control Devices	\$285,000	
	Annual Investment Total		\$2,256,300
2027/28	All Traffic Control Hazardous Locations	\$380,000	
	Integrated Transport Strategy	\$142,500	
	Walking & Cycling	\$380,000	
	Way to Go School Safety Improvements	\$95,000	
	School Crossings - Signal Upgrade	\$47,500	
	Traffic Control Device Renewal	\$285,000	
	Osborne & Taperoo LATM	\$665,000	
	Blair Athol LATM	\$285,000	
	Annual Investment Total		\$2,280,000

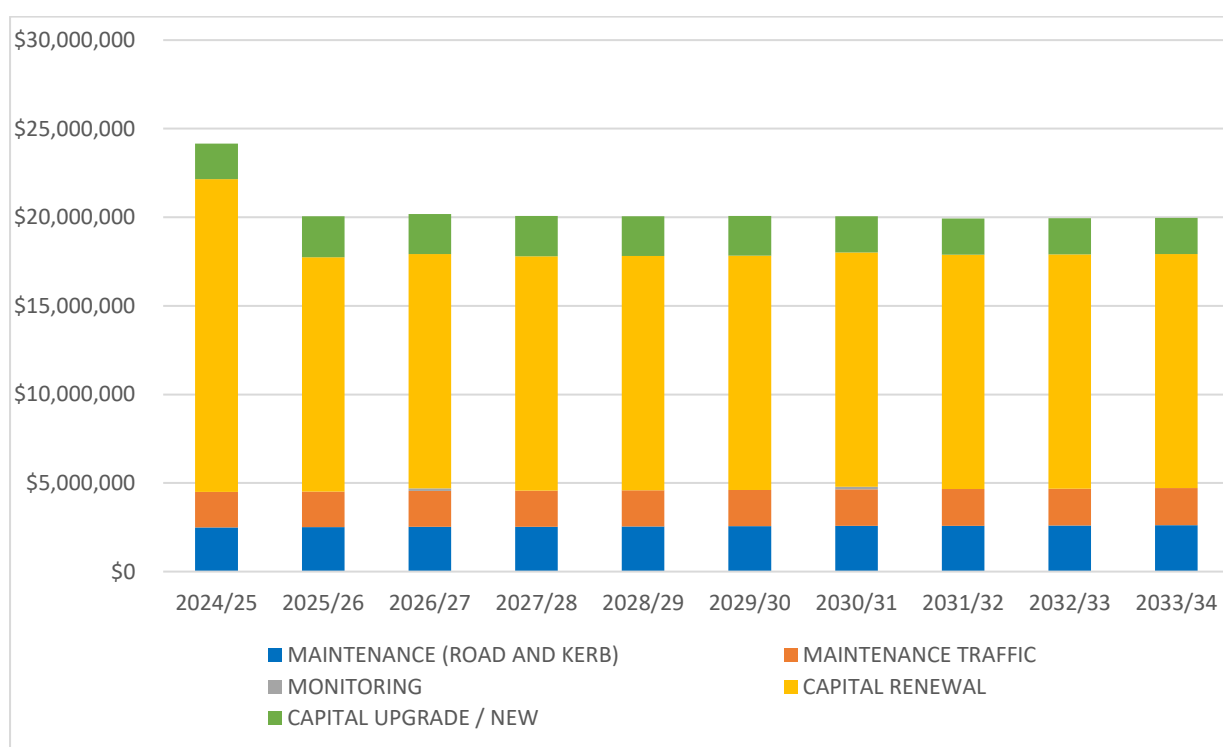
11.7: INVESTMENT TABLE

Table 11.7.1: 10 Year Planning of Capital and Maintenance Expenditure

Year	Maintenance (Road & Kerb)	Maintenance Traffic	Monitoring	Capital Renewal	Capital Upgrade	Total
2024–25	\$2,500,000	\$2,000,000		\$17,651,700	\$2,005,000	\$24,156,700
2025–26	\$2,512,500	\$2,010,000		\$13,462,000	\$2,303,800	\$20,288,300
2026–27	\$2,525,100	\$2,020,100	\$160,000	\$13,462,000	\$2,256,300	\$20,423,500
2027–28	\$2,537,700	\$2,030,200		\$13,462,000	\$2,280,000	\$20,309,900
2028–29	\$2,550,400	\$2,040,300		\$13,462,000	\$2,232,500	\$20,285,200
2029–30	\$2,563,100	\$2,050,500		\$13,462,000	\$2,232,500	\$20,308,100
2030–31	\$2,575,900	\$2,060,800	\$160,000	\$13,462,000	\$2,042,500	\$20,301,200
2031–32	\$2,588,800	\$2,071,100		\$13,462,000	\$2,042,500	\$20,164,400
2032–33	\$2,601,800	\$2,081,400		\$13,462,000	\$2,042,500	\$20,187,700
2033–34	\$2,614,800	\$2,091,800		\$13,462,000	\$2,042,500	\$20,211,100
Total	\$25,570,100	\$20,456,200	\$320,000	\$138,809,700	\$21,480,100	\$206,636,100

- The above table of figures is in present value.
- The annual expenditure will be subject to CPI adjustment each year.

Graph 11.7.1: 10 Year Planning of Capital and Maintenance Expenditure



12.0: DATA CONFIDENCE

The following definitions have been used to determine data confidence for assets covered within this AMP.

Table 12.1: The 5 levels that measure data confidence.

Confidence Level	Description
A - Highly Reliable < 2%	Data based on sound records, procedures, investigations, and analysis, documented properly and agreed as the best method of assessment. Data set is complete and estimated accuracy <2% uncertainty .
B – Reliable +/- 2 – 10%	Data based on sound records, procedures, investigations, and analysis, documented properly but has minor shortcomings, e.g. some of the data is old, some documentation is missing and /or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated accuracy +/- 2 -10% uncertainty .
C - Uncertain +/- 10 – 25%	Data based on sound records, procedures, investigations, and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and estimated accuracy +/- 10 – 25% uncertainty .
D - Very Uncertain +/- 25 – 50%	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy +/- 25 – 50% uncertainty .
E – Unknown >50%	None or very little data held. Accuracy >50% uncertainty .

Source: IIMM Version 6.0, 2020

Council's Road asset data confidence level is at a **B rating** where the data is reliable with an estimate accuracy of +/- 2 to 10%. The expenditure projections are based on the best available data. As new data becomes available, future plans will be reviewed and updated if necessary.

Council undertakes a full condition audit of our Road and Kerb network every 4 years, with the last audit completed in 2023. Council's Asset Management Database has a register of all road segments with associated condition which influences valuation records and road capital renewal projections.

Furthermore, Council has a full register of location and type of traffic devices and uses remaining life for general condition and replacement year.

13.0: IMPROVEMENT PLAN

The table below summarises the improvement plan that will be implemented over the 4 year period of this AMP

Ref.	Category	Requirement	Responsible	Due Date
1	Growth	Review Maintenance programs and associated investment against level of service measures and customer requests received to ensure investment is aligned with asset growth and community expectations.	Asset Planner / Asset Accountant	On Going
2	Condition / Valuations	Further categorise Traffic Management in valuations to capture age-based condition through accumulated depreciation.	Asset Planner / Asset Accountant	June 2025
3	Risk	Undertake a comprehensive review of all risks	Team Leader Risk & Audit / Asset Planner	March 2025
4	Criticality	Conduct an assessment on roads that have been categorised within the reconstruction phase in the pavement model to reduce the consequence of any vehicle related accident.	Construction Engineer	On Going
5	Criticality	Ensure budget is allocated for rail crossing audit and maintenance activities.	Manager Infrastructure & Assets	January 2025
6	Levels of Service	Present reports on the Levels of Service to the Asset Custodian and Steering Groups.	Asset Planner	On Going
7	Levels of Service	Review Maintenance against level of service measures and customer requests received to ensure budget growth is consistent with asset growth and community expectations.	Asset Planner	December 2025

14.0: APPENDIX ITEMS

Appendix 1: Legislative Requirements

There are many legislative requirements and regulations relating to the management of our road and traffic management device assets. Below are the key legislative Acts and controls that guide the management of our assets.

- Local Government Act 1999
- Planning, Development and Infrastructure Act 2016
- Road traffic Act 1961
- Disability Inclusion Act 2018
- Environment Protection Act 1993
- Work Health and Safety Act 2012 (SA)
- South Australian State Records Act 1977
- Public and Environmental Health Act 1987
- Australian Standards
- Australian Accounting Standards

Appendix 2: Local Area Traffic Management (LATM) Project Areas

