



CITY OF
Port Adelaide Enfield

ROADS ²⁰₂₀

ASSET MANAGEMENT PLAN



Document Control

Port Adelaide Enfield Council: Road Asset Management Plan

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EXECUTIVE SUMMARY

This fourth edition of the Roads Asset Management Plan (AMP) continues to advance the level of service delivered to the community. It will detail what infrastructure we have, why it needs to be maintained, and what is the most efficient way to manage this asset class to deliver on the expectations of our community.

This edition has introduced two objectives that will act as benchmarking targets, which will enable a performance review of how this asset is managed over the life of this plan to 2024.

IN 2024, COUNCIL WILL:

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

Objective 2: Have rejuvenated & renewed an average of 28km's of road over the 4 years.

These performance targets (further discussed in Section 8) have been established by engaging with the community to understand their level of expectations, and through analysis of recent condition audit data against historic expenditure levels.

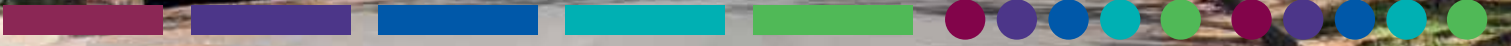
This AMP reviews the infrastructure assets relating to Road surface and pavement, kerb, and traffic control devices, which have a combined Replacement value of \$756.5 Million with a total Annual Depreciation expense of \$10.95 Million.

This edition has used the Asset Renewal Funding Ratio to model best case expenditure projections to inform the Long Term Financial Plan (LTFP) over both a 10 and 20 year scenario. This proves to be an interesting exercise, as the road network requires a higher level of renewal works in the early to mid projection period with forecasts of works tapering towards the latter end. Identifying an appropriate long term budget that will bring consistency to resourcing and reduce annual fluctuations to Council budgets, and using the Renewal Funding Ratio to demonstrate long term sustainability of the Council has resulted in the following outcome:

Asset Renewal Funding Ratio:	96.98%
Road and Kerb 10 Year Capital Budget:	\$14.11M per year

The infrastructure asset base should be renewed at a rate that is consistent with its long-term consumption. Council will then be sufficiently maintaining, and replacing/renewing existing infrastructure assets as road segments reach the end of their useful life. The setting of the 28 km consumption target will drive efficiency in project delivery, and will further ensure the achievement of an average network OCI score of 8.

This AMP has used the data returned from the 2019 road network condition audit, the results of the 2019 Community Perception Survey, the City Plan 2030 objectives, analysis of current and future demand factors, and evaluation of risk, to establish the stated objectives above.



INTRODUCTION



This Asset Management Plan (AMP) covers the infrastructure assets that provide the City of Port Adelaide Enfield community's Road service. It details information about our Road infrastructure assets and the actions required to provide an agreed level of service in the most cost effective manner.

The plan defines:

- the services to be provided ,
- the cost in providing these services, and
- future funding required to continue meeting road management needs for our current and future communities.

Asset management plans are prepared by Council to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements under the Local government Act 1999, and to communicate funding needed to provide the required levels of service over a 10 year planning period.

This Asset Management Plan follows the format for AM Plans recommended in Section 4.2.6 of the IPWEA International Infrastructure Management Manual.

2 STRATEGIC CONTEXT



Strategic and Corporate Goals

The City of Port Adelaide Enfield is guided by the City Plan 2030. The vision of the City Plan is for:

“A city that values its diverse community and embraces change through innovation, resilience and community leadership”

Strategic Alignment

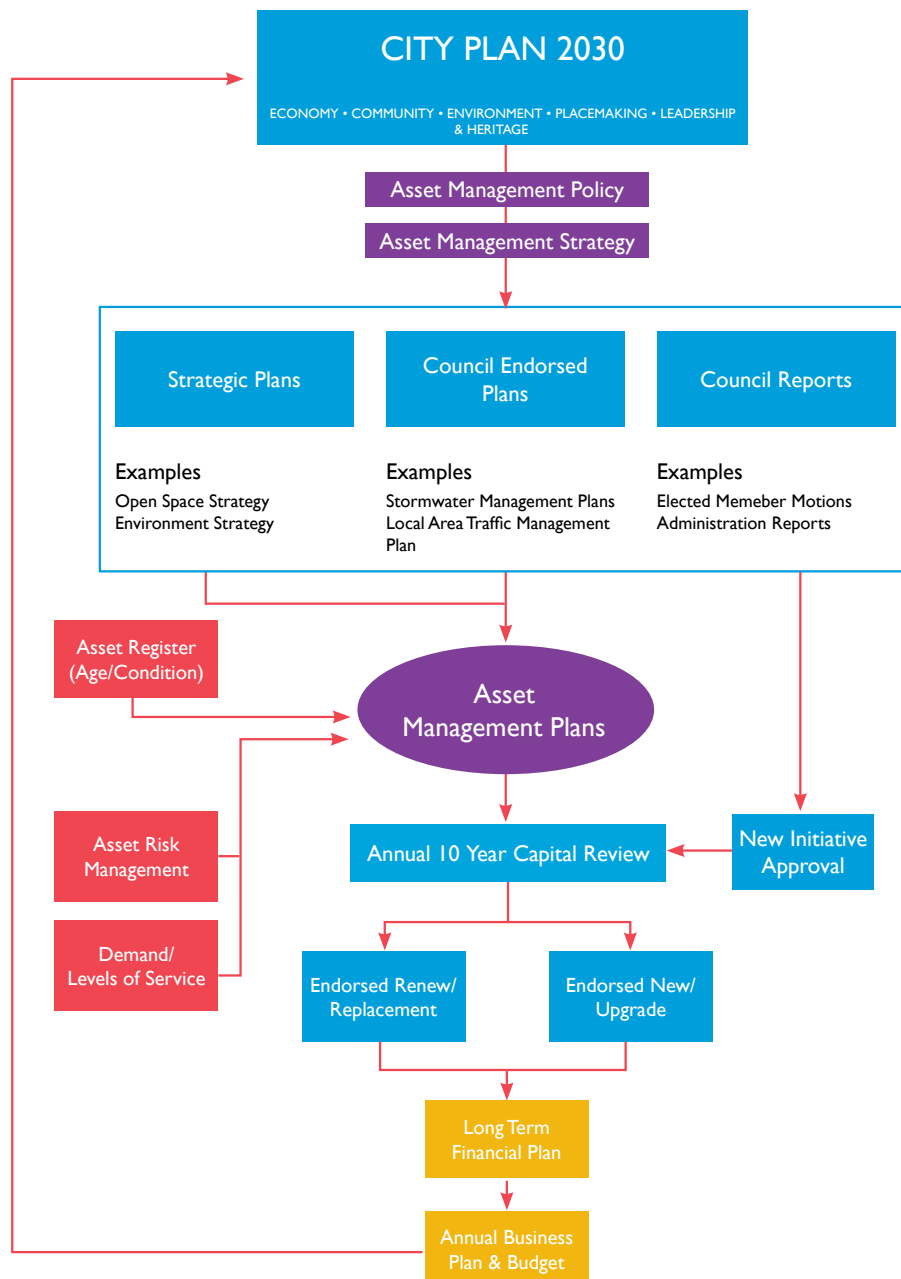
This Road Asset Management Plan 2020 primarily fits within the Leadership theme of the City Plan, contributing to decisions being made in a more strategic and accountable manner.

It also relates to a number of other Council documents including (but not limited to):

- City Plan
- Asset Management Strategy
- Long Term Financial Plan
- Annual Business Plan and Budget
- Environment Strategy

Adoption and implementation of the Road Asset Management Plan 2020 will support the City of Port Adelaide Enfield to achieve the objectives of the City Plan 2030.

Table 2.1: Organisational Goals and how these are addressed in this Plan



Relevant goals and objectives and how these are addressed in this Asset Management Plan are outlined below:

ECONOMY

We are a thriving economy and a business-friendly City

- That the infrastructure provided under this Asset Management Plan is successfully connecting business and industry to opportunity and prosperity.
- Sourcing goods and services locally is considered when undertaking procurement.

Prosperous • Connected • Growing

COMMUNITY

We are a safe, vibrant, inclusive and welcoming city for our residents, businesses and visitors alike

- To ensure that the infrastructure provided under this Asset Management Plans achieving a Level of Service that is expected by the community and its Elected Members.

Healthy • Inclusive • Cohesive

ENVIRONMENT and HERITAGE

We are a low carbon, water sensitive and climate resilient City and our built heritage is protected, embraced and celebrated

- Sustainability, water and energy efficiency are considered when upgrading assets

Distinctive • Adaptable • Sustainable

PLACEMAKING

We are a unique and distinctive collection of active places, created and cared for through strong partnerships

- To ensure that the infrastructure provided under this Asset Management Plan is delivering a safe environment for the community – ensuring access and linkage for people to conduct their life and business activities

Belonging • Accessible • Creative

LEADERSHIP

We are an innovative, collaborative and high performing leader within local government

- To measure the organisation's performance through key financial indicators and accuracy of data and to advance Council's Asset Management Plan with a strategic improvement plan.
- To outline current levels of expenditure, and to identify projected funding requirements for future projects that will deliver sustainable infrastructure for the community.
- To connect this Asset Management Plan with the people, relevant organisations and businesses that make up the Port Adelaide Enfield community through Public Consultation and Community Survey.

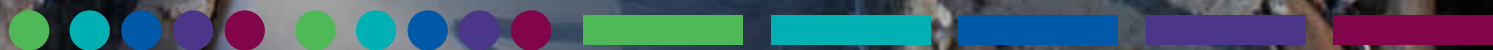
Strategic • Accountable • Engaged



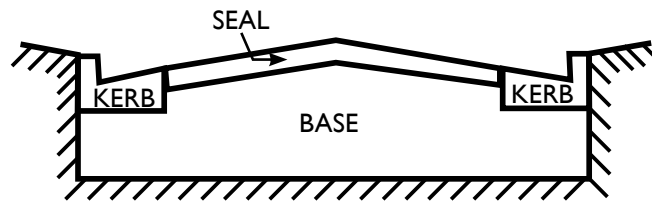


3

HOW
MUCH
DO WE
MANAGE?



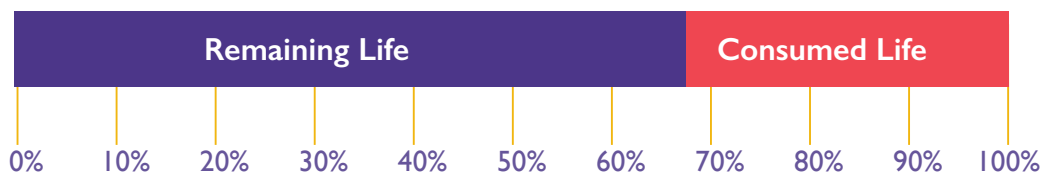
The infrastructure assets covered by this asset management plan are shown below.
The following lengths and values relate to the 2018/19 valuation data.



Road Seal			
Asset category	Soil Type	Length (km's)	Replacement Value
West	Stable	368.9	\$52,899,651
Centre	Semi Stable	127.7	\$13,971,475
East	Reactive	199	\$24,166,607
TOTAL		695.6	\$91,037,733

Road Base/ Sub Base			
Asset category	Soil Type	Length (km's)	Replacement Value
West	Stable	368.9	\$228,257,108
Centre	Semi Stable	127.7	\$79,890,034
East	Reactive	199	\$106,947,176
TOTAL		695.6	\$415,094,320

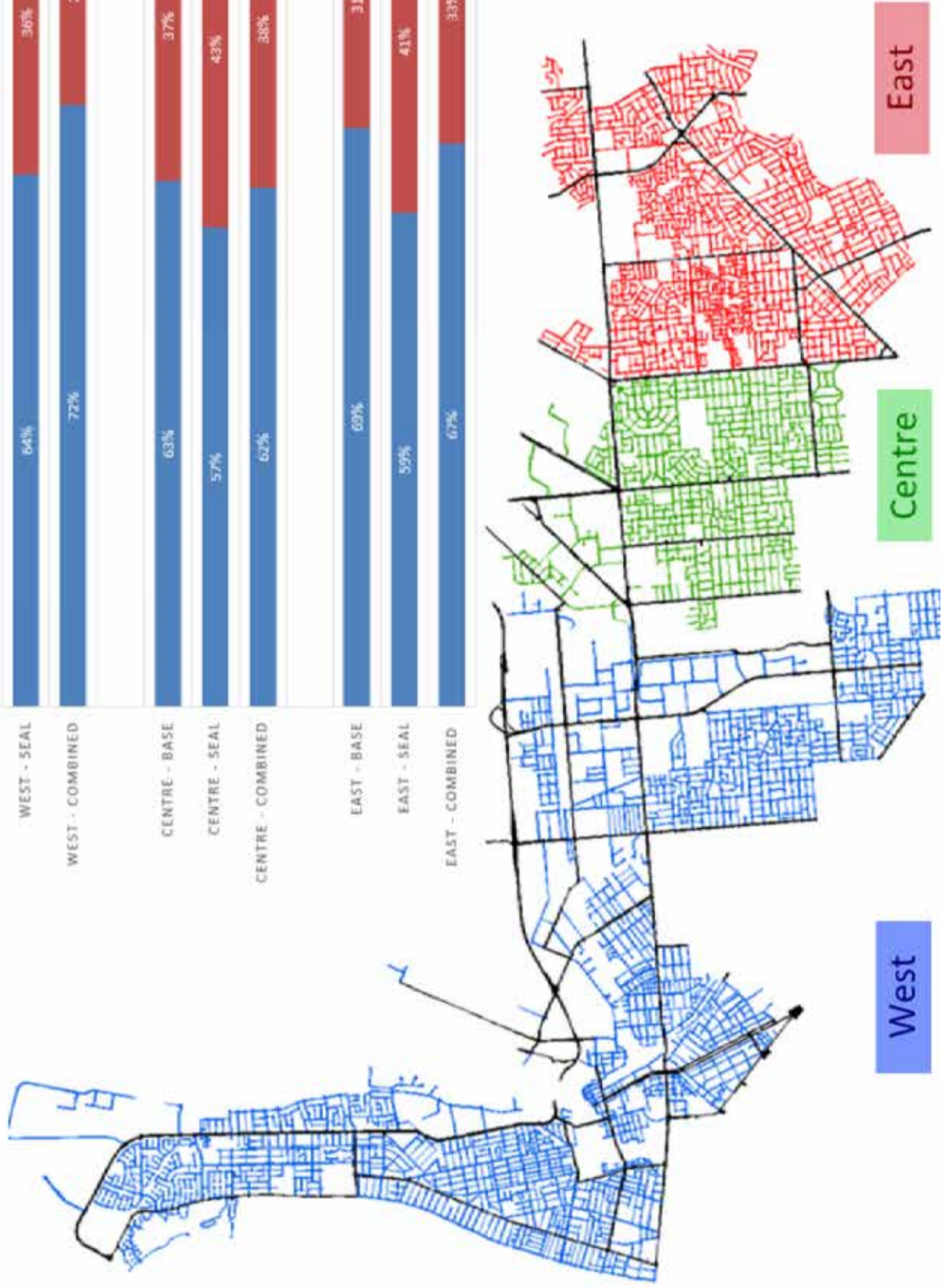
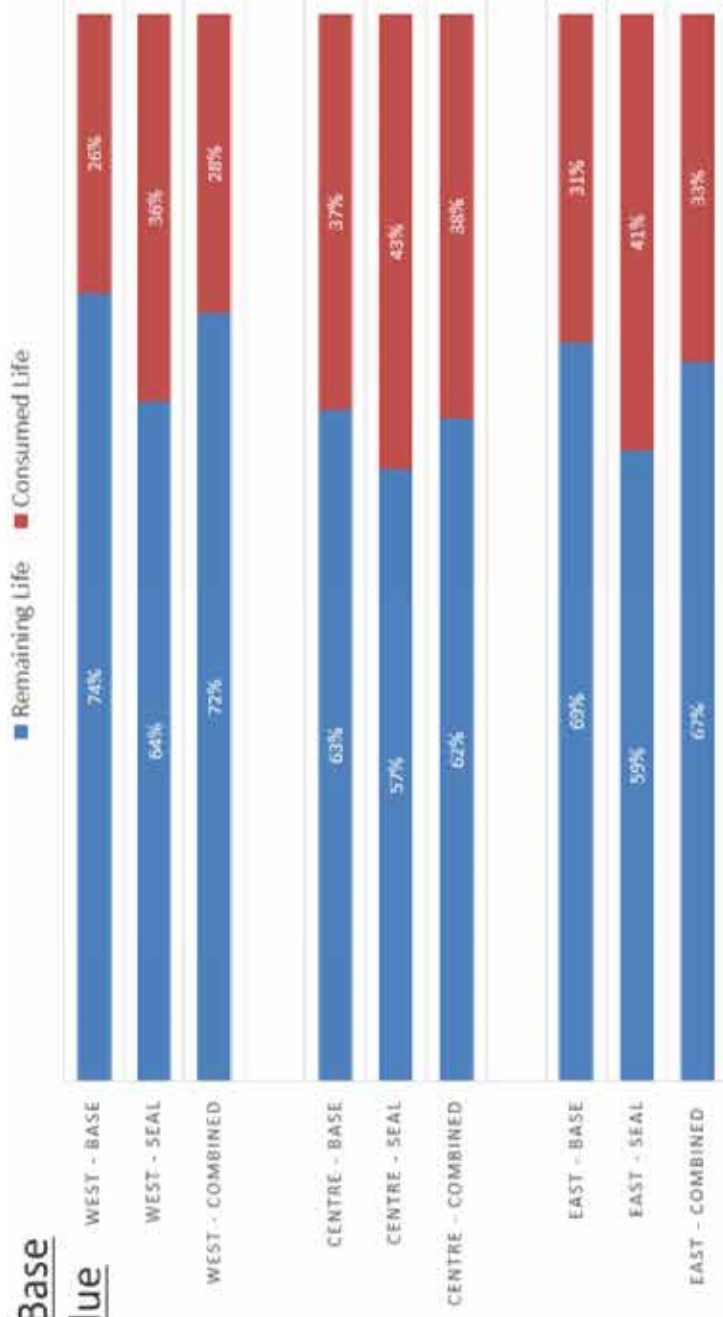
Current Replacement Cost:	\$506,132,053
Current Depreciation:	\$157,204,765
Depreciated Replacement Cost ¹ :	\$348,927,290
Annual Depreciation Expense:	\$7,292,535



Based on current age and condition the remaining life of the network is calculated to be 69% of its total Replacement Cost

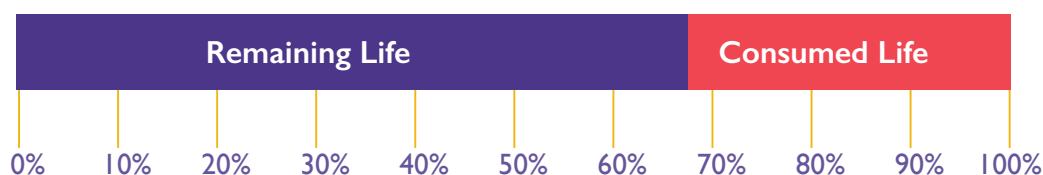
¹Also reported as Written Down Current Replacement Cost (WDCRC).

Remaining life for Seal and Base from Total Replacement Value



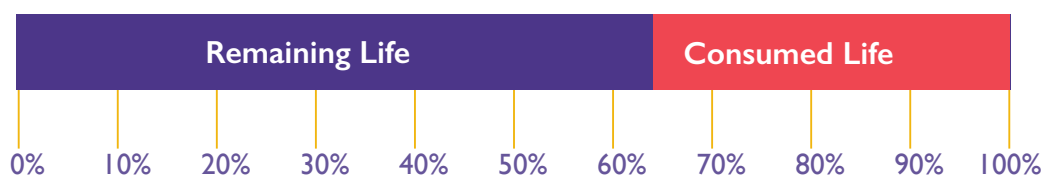
Kerb and Gutter			
Asset category	Soil Type	Number	Replacement Value
West	Stable	757.3	\$121,291,869
Central	Semi Stable	266.6	\$43,117,175
East	Reactive	413.3	\$66,462,912
TOTAL		1437.20	\$230,871,956

Current Replacement Cost	\$230,871,956
Depreciable Amount	\$73,900,818
Depreciated Replacement Cost	\$156,971,138
Annual Depreciation Expense	\$3,201,595



Traffic Devices			
Asset category	Soil Type	Number	Replacement Value
West - Roundabouts & Protuberances	Stable	23	\$5,047,977
Centre - Roundabouts & Protuberances	Semi Stable	64	\$4,089,500
East - Roundabouts & Protuberances	Reactive	71	\$4,536,789
All - Median Islands / Pedestrian Refuge		457	\$5,771,005
TOTAL		615	\$19,445,273

Current Replacement Cost	\$19,445,273
Depreciable Amount	\$7,059,489
Depreciated Replacement Cost ²	\$12,385,783
Annual Depreciation Expense	\$457,241



²Also reported as Written Down Current Replacement Cost (WDCRC).



4 WHAT IS THE CONDITION OF OUR ROAD NETWORK?

16 Asset Management Plan 2020 - Roads

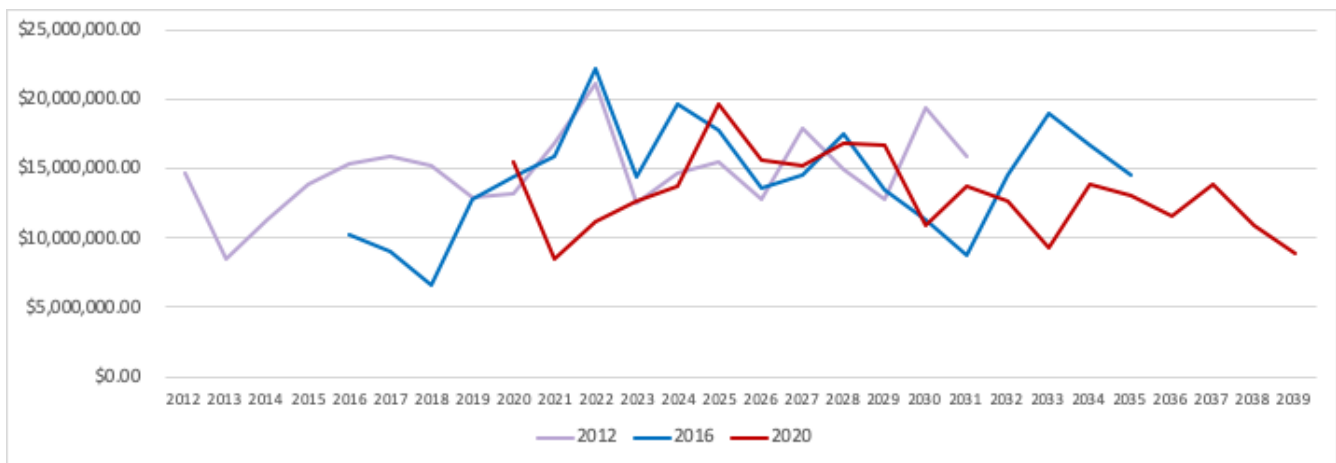
Council has now performed three full network condition audits which provide important information to analyse network performance and to plan future works programs. The condition audits have been tightly specified to minimise variations and allow comparative analysis of data across each audit period. Council has used the same contractor, with the same technical equipment, and same works specification in each of the 3 audit years – being 2012, 2016, and 2019.

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graph LR
    Start[Street Pavement Rehabilitation Priority Model] --> OC[OC = 7.2]
    OC --> Class1[CLASS - COUNTR or COUNTR or URBAN]
    OC --> Class2[CLASS - COUNTR or COUNTR or URBAN]
    Class1 --> CheckSC1[Check SC Data]
    CheckSC1 --> Ravel1[RAVELLING < 5]
    CheckSC1 --> Ravel2[RAVELLING > 5]
    CheckSC1 --> NoSC1[No SC Data]
    Ravel1 --> Resalt1[Resalt REPAIR > 20%]
    Ravel2 --> Resalt2[Resalt REPAIR > 20%]
    NoSC1 --> Resalt3[Resalt REPAIR > 20%]
    Class2 --> CheckSC2[Check SC Data]
    CheckSC2 --> Ravel3[RAVELLING < 5]
    CheckSC2 --> Ravel4[RAVELLING > 5]
    CheckSC2 --> NoSC2[No SC Data]
    Ravel3 --> Resalt4[Resalt REPAIR > 20%]
    Ravel4 --> Resalt5[Resalt REPAIR > 20%]
    NoSC2 --> Resalt6[Resalt REPAIR > 20%]
    Resalt1 --> TargetOC[Target OC]
    Resalt2 --> TargetOC
    Resalt3 --> TargetOC
    Resalt4 --> TargetOC
    Resalt5 --> TargetOC
    Resalt6 --> TargetOC
  
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A benefit of repeatable data capture is that the outputs remain comparable across audits enabling the overall condition of the network to be compared. This demonstrates if the capital and maintenance works programs are achieving the desired outcome (ie. is the network condition getting better or worse) for the investment made. It has also allows some flexibility in adapting to industry product advancement, where for the first time since 2012 a new treatment method has been introduced to the model. Having monitored a trial of rejuvenation products in 2010, administration has been confident in programming a specific amount of this type of treatment to the recent and current works programs. Past modelling has identified a spike in network replacement works in the upcoming 5 years. The rejuvenation products add 7-10 years extra life to the existing seal when used on suitable roads at suitable intervention points.

Chart 4.1: Projected 20 Year expenditure modelling following each road condition audit



The 3 projections are calculated from the condition of the network following each condition audit. Of interest is each projection presents an initial dip in works between years 1 and 2. This may be a consequence of how the pavement model calculated the short term life that recent maintenance activities add to the road asset, whereby each of the 3 projections spike immediately upwards reflecting the need for longer term intervention works.

Savings made through improved project delivery practices implemented in 2018/19 also enabled additional reseal work to be undertaken. Targeted maintenance activities and recent rejuvenation works that add 7-10 years life to appropriate road sections, also appears to have spread the peak in 2021 and 2022 which was consistently identified in the previous 2 audits.

What is apparent is that there is the consistency between years 2023 and 2031 forecasts. This indicates:

- reliability and repeatability in the data collection for each audit, and
- confidence in understanding the performance of the road network and thus future works programming.

Condition

Chart 4.2 depicts the condition of the road network as at November 2019 – where a segment is the start and end of each road (ie from street corner to street corner). The colour ramp indicates the average condition score of segments, by the following description:

- Dark green = very good or new condition – requiring no maintenance work
- Light green = good condition – requiring no to low level maintenance
- Yellow = reasonable condition – potential candidates for rejuvenation to reseal activity
- Orange = poor condition – reseal activity to consideration for reconstruction
- Red = very poor condition – requiring reconstruction.

As the graphic demonstrates, the Overall Condition of the network is good, with the majority of road segments in the 6.8 to 8.6 condition (light green). This highlights that a relatively good level of road service is provided to our community and visitors through current capital works and maintenance programs. The segments that fall above 8.6 (dark green) are either recently completed renewal works or are new roads received as ‘free of charge’ assets through current major land developments. All segments below 6.8 (orange and red) are carefully reviewed to ensure we are renewing the asset with the most cost effective type of works at the correct intervention point.

Although the colour range in the inset display of the 2012/13 audit result is at slight variance to the 2019 range, it is evident that there is a greater number of segments that are in good to very good condition (i.e. mid-range of light green to mid-range of dark green). This variation in network condition is discussed further on page 22, which identifies a slight drop in average network condition across this period.

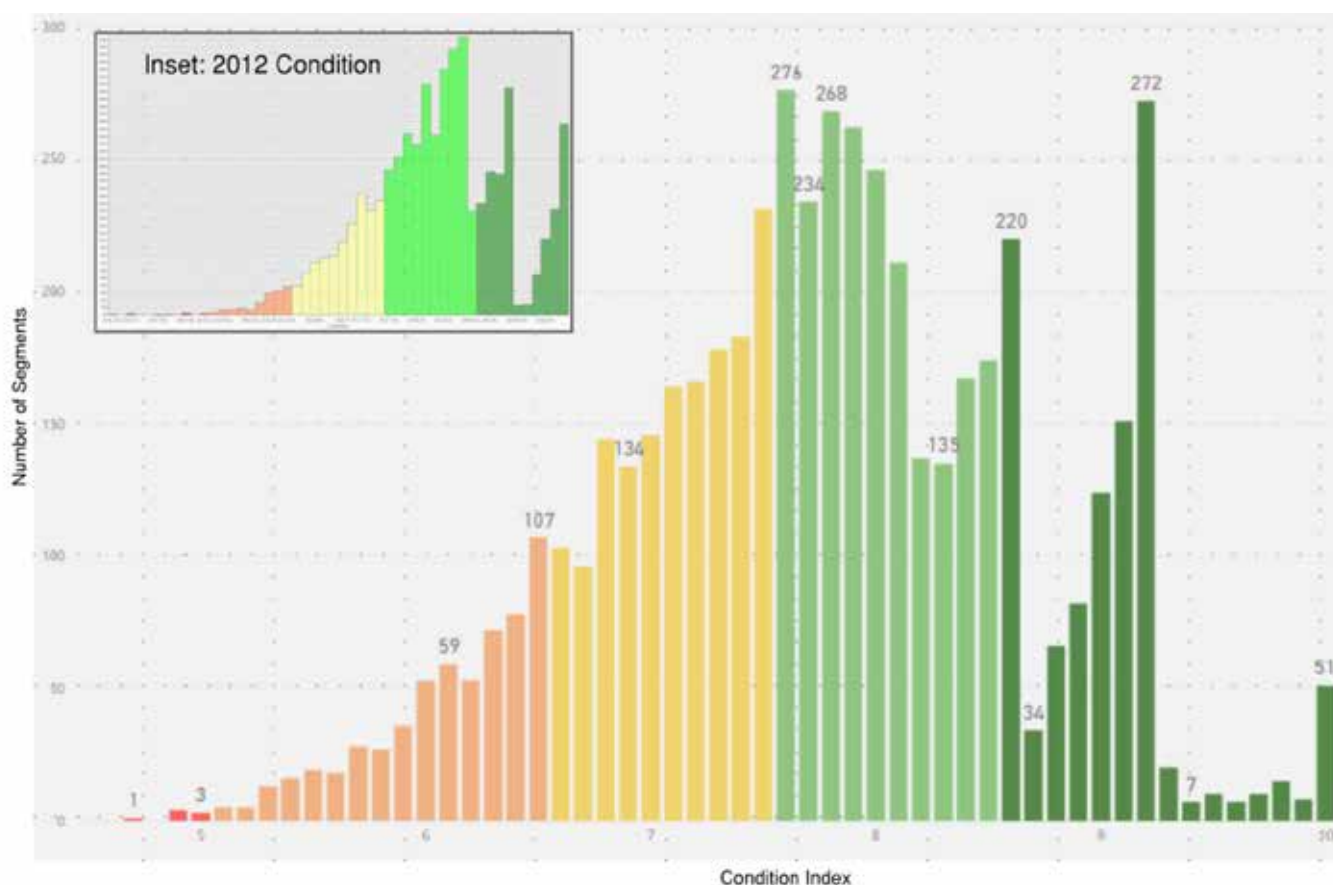
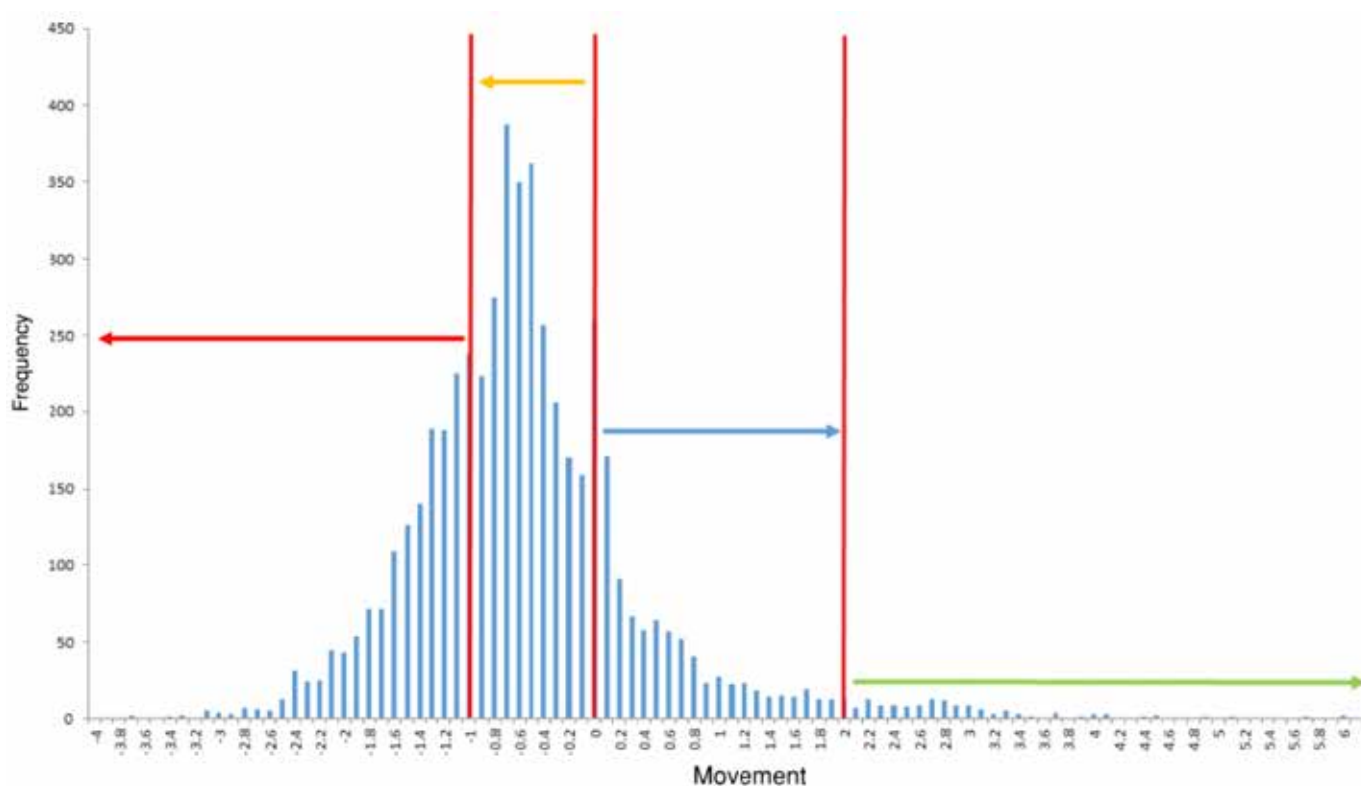


Chart 4.2: 2019 Road Audit: Average Condition of Segments

The following histogram demonstrates the movement of Overall Surface Condition Index (OCI) by segment count between the 2016 and 2019 audits. The SCI is a calculation of defects that in general terms consist of cracking severity, pot hole counts, loss of stone, oxidation of binding material, etc.

- The yellow arrow indicates that the majority of the assets have deteriorated less than 1 point in condition over the 4 year period which is due to as-expected deteriorating factors,
- The blue arrow represents those segments that have increased in score by 2 points, which mainly represents those roads that have received remediation works.
- The green arrow indicates those roads that were previously highly deteriorated and through reseal or re-construction activities have improved by more than 2 points.
- The red arrow indicates those roads that have reached or passed their intervention point, and are now programed for reseal or re-construction works.

Chart 4.3: Histogram: Road OCI Comparison 2015/16 and 2019/20

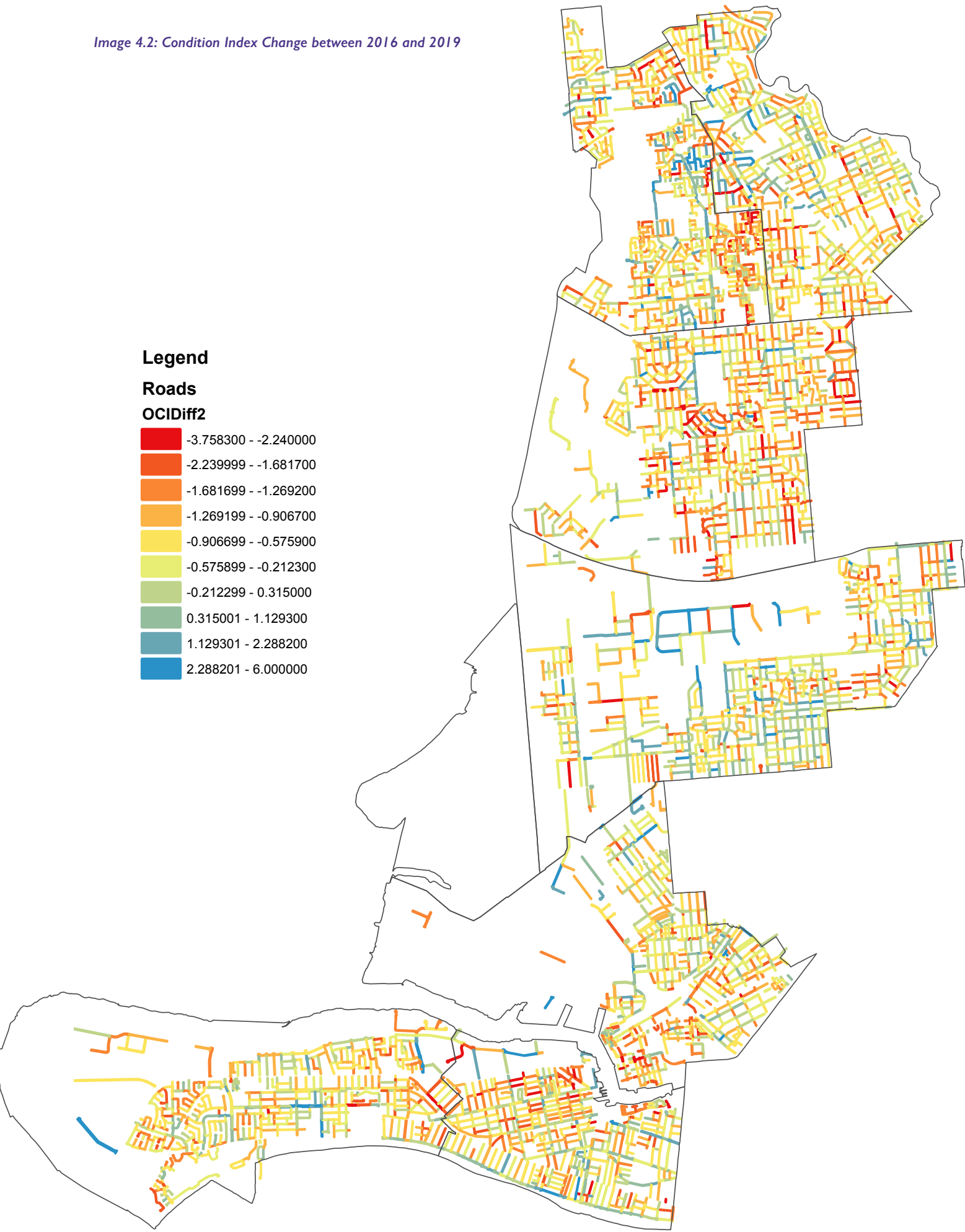


The majority of road segments have reduced by 1.5 points, which indicates that over the last four years, Council has not been renewing at the rate of consumption. This is further identified by the comparison of Overall Condition scores which were calculated from each road audit: 2011, 2016, and 2019 (Chart 4.4)

The same data has been applied to the following heat map, Image 4.2, which provides a geographic representation of where works have improved services and where the asset is beginning to fail. Although a lot of work has occurred in the far eastern region, the central suburbs of Enfield, Kilburn, and Sefton Park have deteriorated by 2 or more points, along with Birkenhead and Peterhead in the western region. It is interesting to identify North Haven roads are now beginning to show signs of age. Roads in this sandy location have provided a stable asset usually lasting beyond their determined lives.

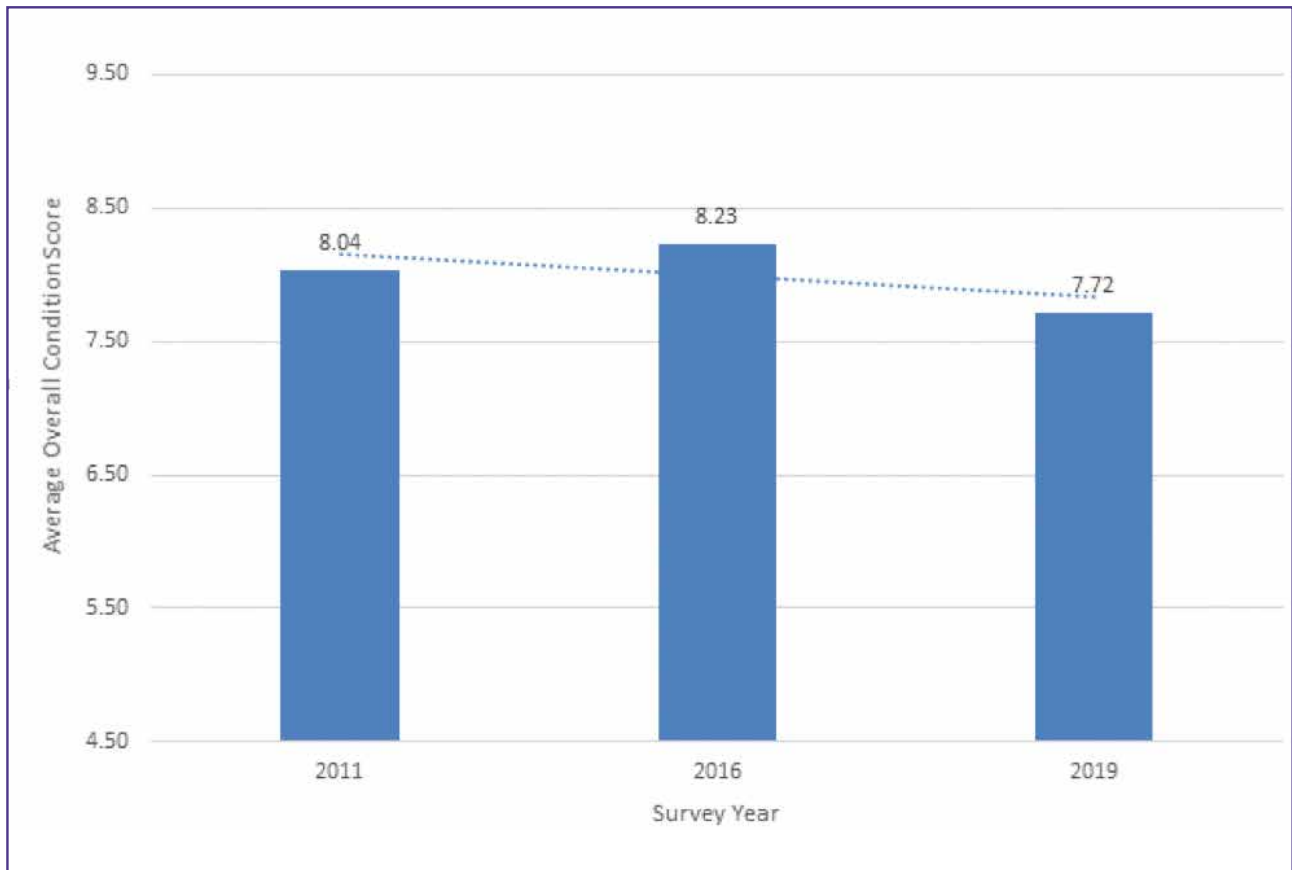


Image 4.2: Condition Index Change between 2016 and 2019



The movement in condition scores further relates to the following comparison of overall average network condition scores. As viewed in chart 4.4, the overall condition of Council's roads has reduced to 7.72. Administration believe that a backlog of works resulted during a period where budget was focussed too heavily on reconstruction and deeplift activities, leaving less capacity for reseal work. As a result, a greater number of roads have digressed by more than 1 point, which is identified in chart 4.3.

Chart 4.4: Overall Condition Index (OCI) Score Comparison



Using the latest condition data and projections, it is the objective of this Asset Management Plan to establish a baseline expenditure level that will enable a works program to deliver an improved OCI rating in 2023 following the next condition audit.

Given the high importance that the community places on the road asset, along with the considerable cost in replacing the asset at the rate of consumption, it is reasonable to establish an overall performance target where the OCI will be a minimum of 8.

The expenditure requirements are further discussed within Section 8.



5 LEVELS OF SERVICE

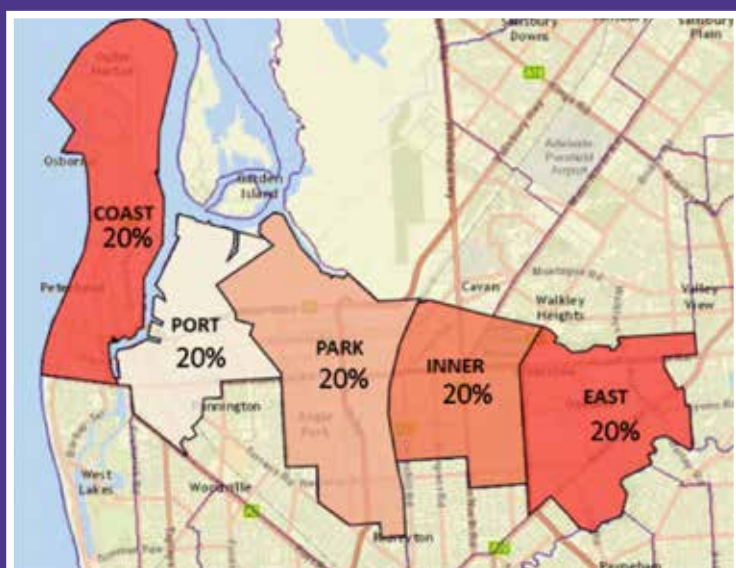


Customer research and Expectations

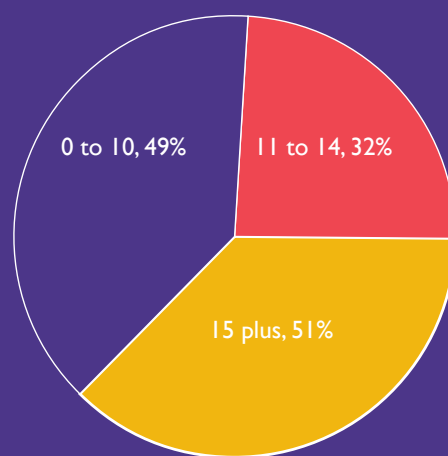
In 2020, a survey was undertaken to measure Community Perception of the varying services provided by Council. The survey requested participants to advise the level of importance of services, and then advise their level of satisfaction with how Council provides this service.

In order to collect the data, 401 households were invited to partake in a telephone interview. The survey targeted an equal number of households in each of the five SLA's (Statistical Local Area) in the Council area. These SLA's included:

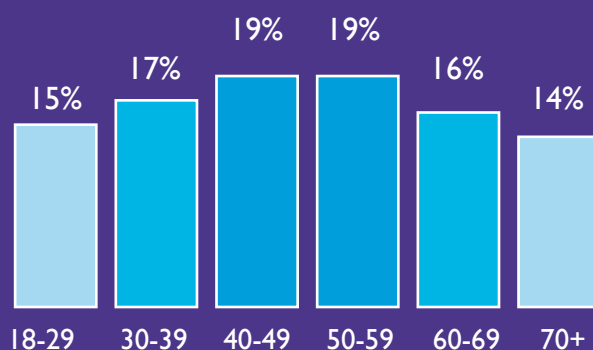
East = 81 Inner = 80 Coast = 80 Parks = 80 Port = 80



Age of Children



Age

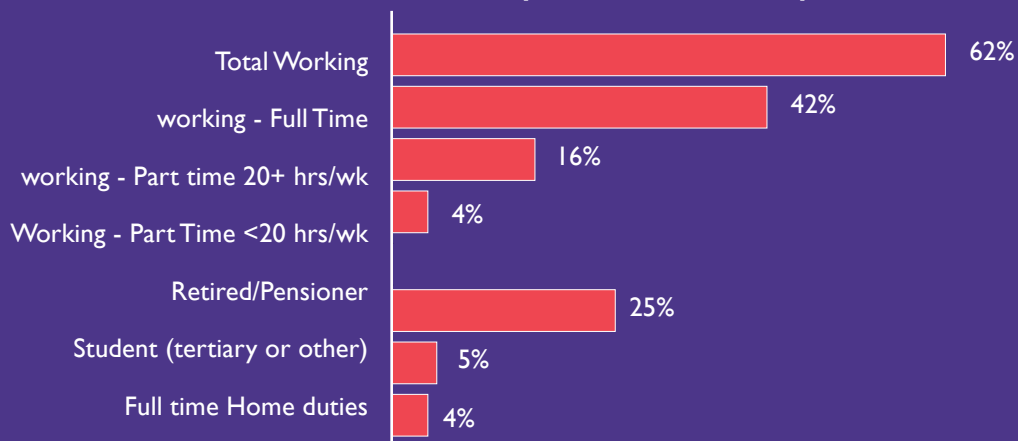


Females
51%



Males
49%

Respondent description



The following quadrant chart 5.1 is a snapshot of the range of services presented within the survey, with the communities resulting consideration for level of importance and associated satisfaction scores.

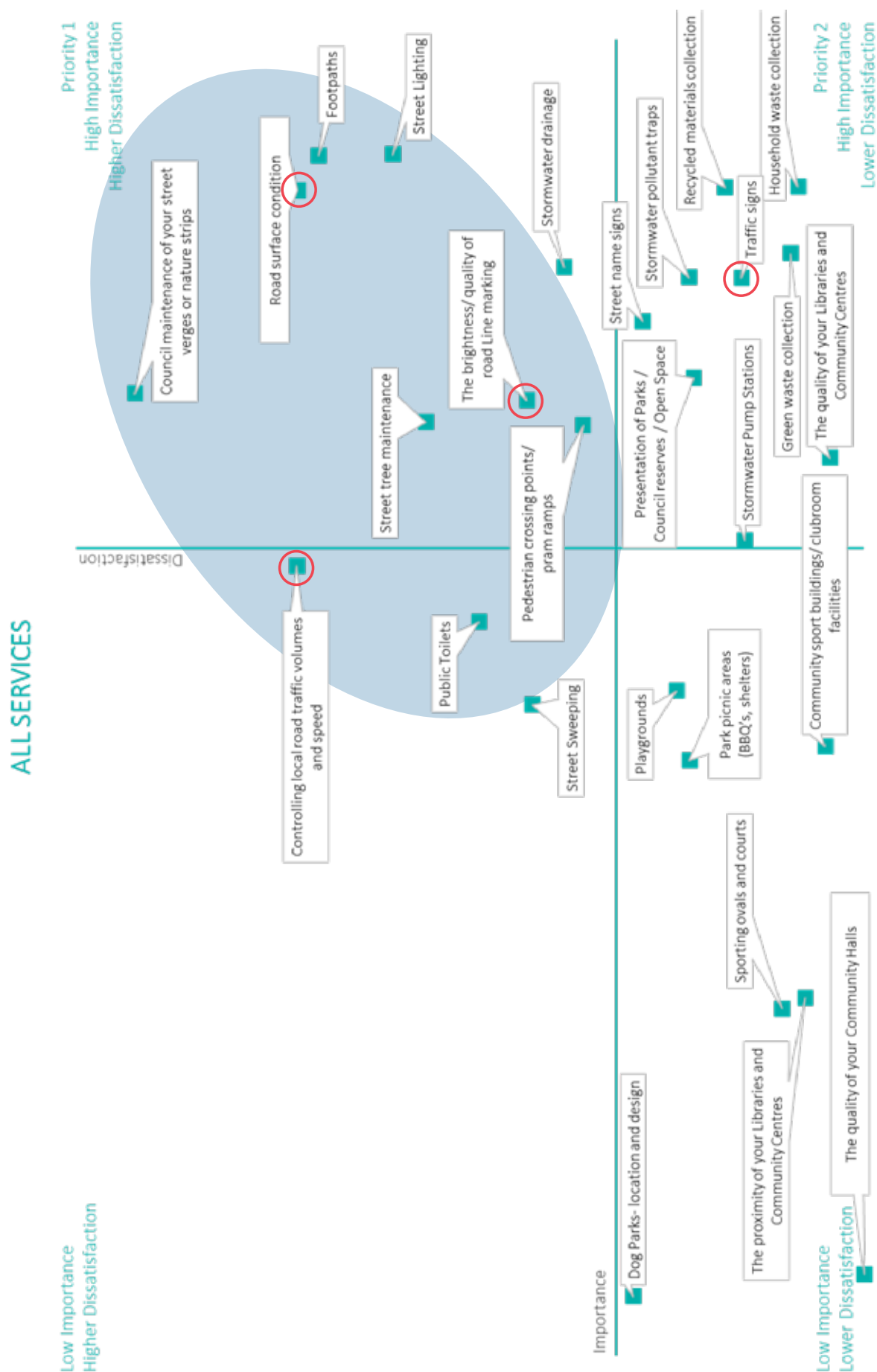


Chart 5.1: Community Perception Quadrant Analysis

The survey result indicates that the community places a high level of importance on the Road surface, with traffic services such as signage and line marking brightness also considered important.

Controlling traffic speed had a more interesting outcome, with the community displaying a mid-level sense of importance amongst all services provided, but expressed a higher level of dissatisfaction. Although a mixed outcome, this still presents a general concern to safety, and suggests Council should continue to work to reduce traffic speed in local areas.

The following table 5.1 depicts all recently completed and commenced Local Area Traffic Management (LATM) projects, along with current studies, and those endorsed for future years. This LATM work was endorsed by Council in March 2019.

Table 5.1: Local Area Traffic Management status

COMPLETED / COMMENCED LATMS (FROM 2013/14)	COMMITTED LATMS (2019/20)	FUTURE LATMS (2021/22+)
Kilburn	Enfield Central & North	Manningham / Hampstead Gardens
North Haven	North South Corridor (‘Torrens to Torrens’ and ‘Regency to Pym’)	Gilles Plains
Enfield South (inc. Broadview & Clearview)		Hillcrest
Rosewater		Port Adelaide
Northfield		
Greenacres		

Image 5.1 demonstrates the commitment made by Council towards reducing both traffic speed and volumes to delivering a safe local road network for the community.

Image 5.1: Council wide LATM projects

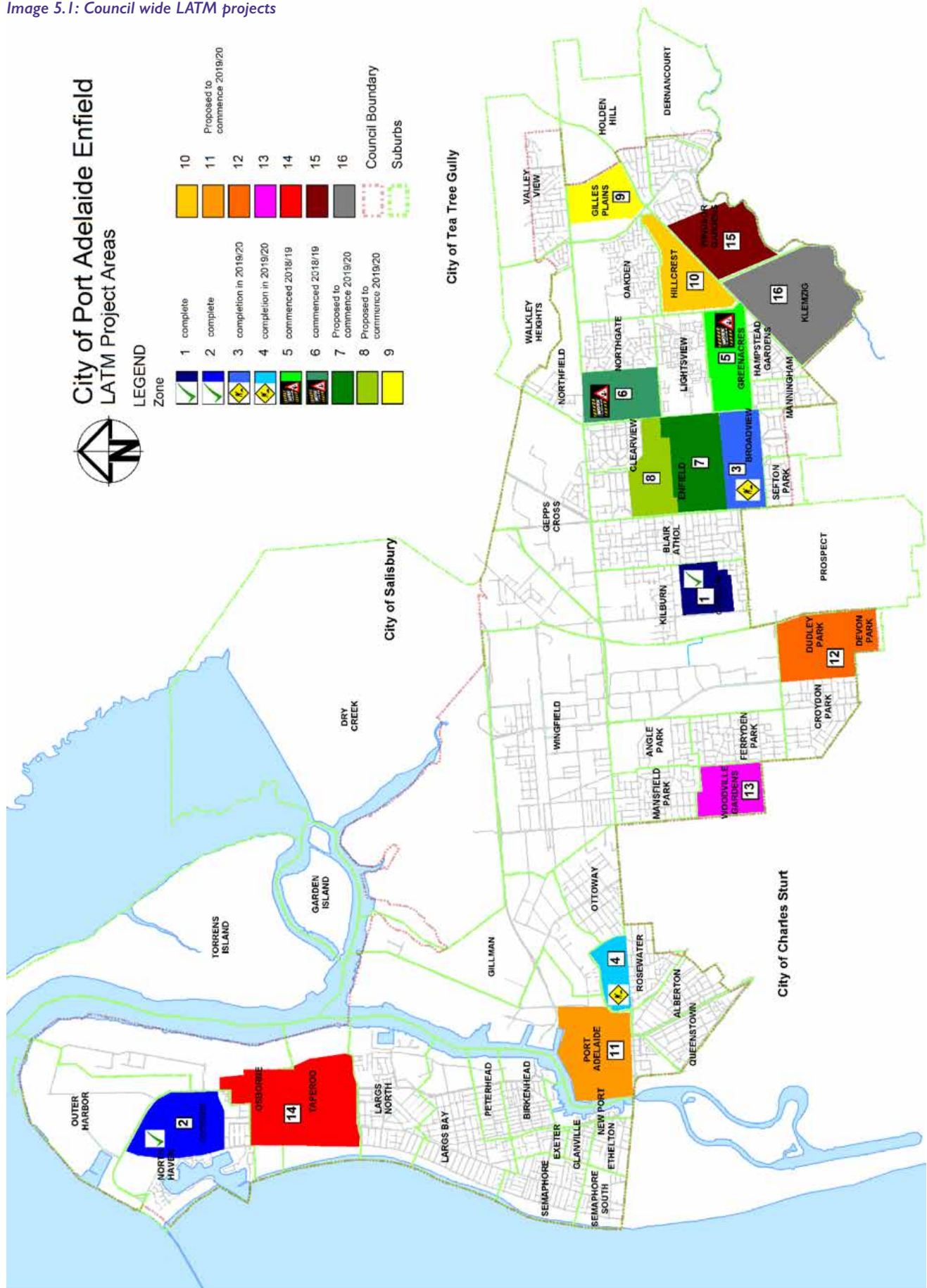
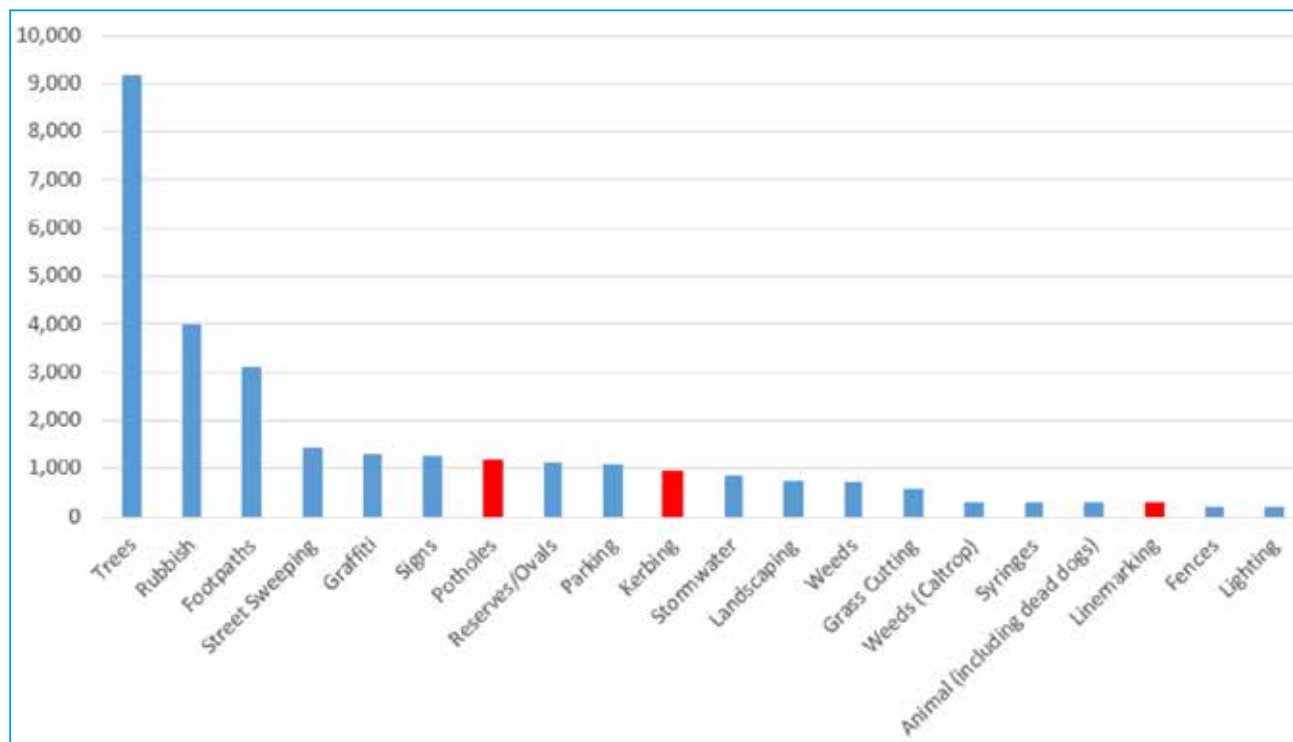


Chart 5.2: Highest Number of Tasks from Customer Requests (2017/18 + 2018/19)



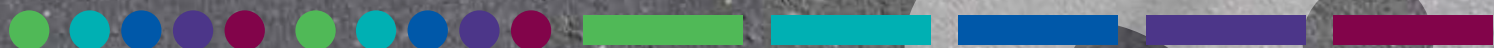
In addition to Community surveys Council also tracks the number of Requests for Work received, and the Tasks that result from these requests. Chart 5.2 above shows the number of work tasks created over the last 2 year period. Council has received 1,180 pothole requests over the 2 year period, along with 954 kerbing requests and 286 line marking requests.

On average 2.3 pothole and 1.8 kerb work tasks are created daily over the past 2 years across the 695km's road network. Council further receives 1 line marking request every 2 days.

Keeping in touch with community perceptions and monitoring the number of customer requests justifies the need for pro-active maintenance works to improve the serviceability of the road network. A number of proactive initiatives have been implemented in the last few years that hopefully will lift the level of services provided to the community. Council has created a second line marking team, with the intent to refresh all line marking across the entire network more frequently.

In collaboration with Council's Infrastructure Technology (IT) team, the Road Maintenance team have developed an in-house application that can capture and rate the condition of roads as they drive across the Council area. This is particularly important where road defects, such as pot holes, continue to recur after general maintenance. This information is captured when developing the following years road rehabilitation works list, where such roads will then be renewed.

6 DEMAND ON SERVICES



To preserve and improve the liveability of our city we need to design, plan and manage our road infrastructure assets in a strategic and innovative way that is focused on meeting the current and future needs of our diverse community. We also need to understand some of the key trends that will shape our city into the future. This includes understanding the impacts of projected demographic, environmental and technological changes.

Perhaps the most obvious demand driver is our ongoing population growth through urban infill. Our city has a growing population and with it an expanding local economy. This growth leads to an increase in demand for services and supporting infrastructure assets. The population at the 2016 Census was 121,230, an increase of 7.5% since the 2011 Census. The population is projected to continue to increase, with continued redevelopment of older areas and new land releases in Port Adelaide, Oakden, and Gilles Plains, with a projected population in 2031 of approximately 143,600 people.

Chart 6.1: Population projection for the City of Port Adelaide Enfield

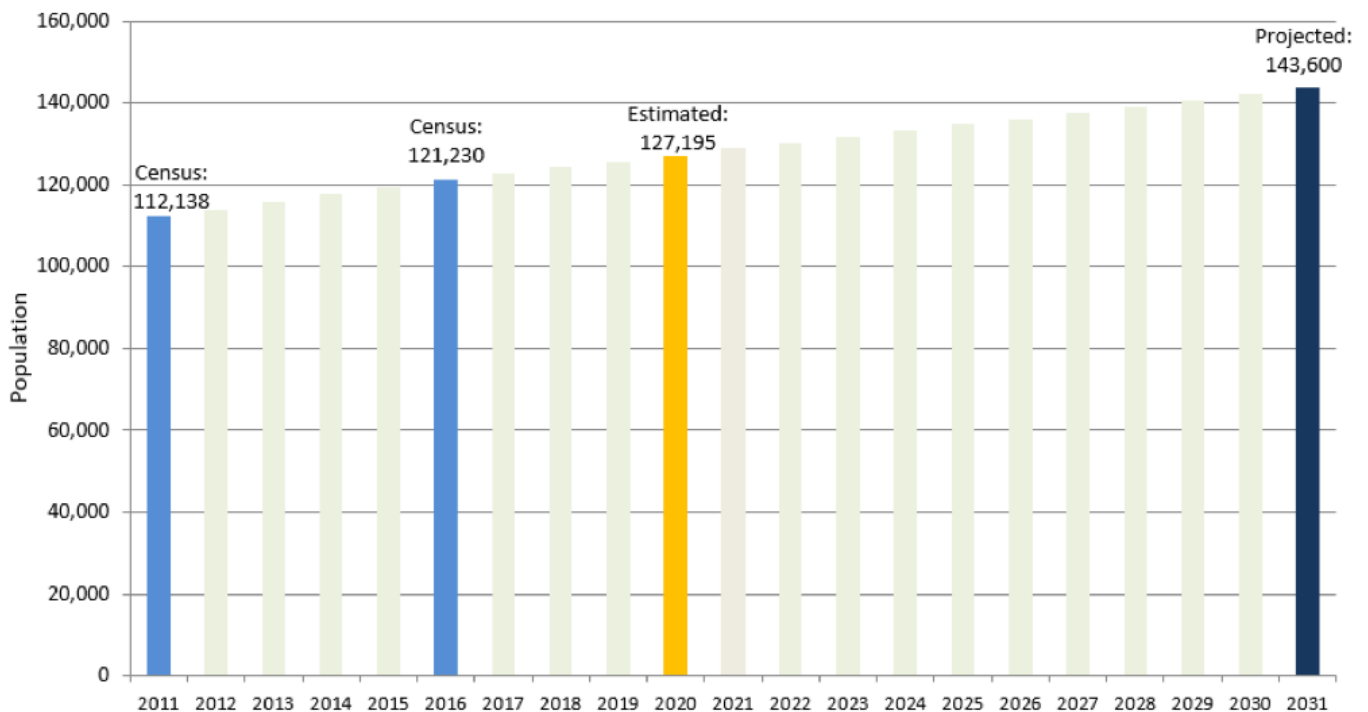


Chart 6.2: Vehicles per household comparison between 2011 and 2016

Number of Household Motor Vehicles	2016	2011
None	5,000	6,000
1	18,500	18,000
2	15,500	14,200
3 or more	6,000	5,000

■ Live and work in the area

■ Work in the area, but live outside

■ Live and work in the area

■ Live in the area, but work outside

■ No fixed place of work

Our city is home to a significant amount of strategic economic infrastructure including port facilities, industrial land, commercial and retail areas and tourism assets. This includes approximately 30% of Adelaide's Industrial land. The biggest area of economic growth in recent years has been in defence related industries, based predominantly on the Lefevre Peninsula. The central area of Council, with suburbs of Wingfield, Dry Creek, and Gillman, further continue to be significant industrial areas which have the potential to become more intensified with the improvements to South Rd through the State's North- South corridor project.

Future Demand - Looking ahead

Drivers affecting demand does not just include population change – but also changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, environmental awareness, etc.

A key Action of the Asset Management Strategy has been to establish a Strategic Custodian Group to help identify and prepare for potential future demand factors that may or will impact the provision of Council services.

Table 6.1 is a list of future trends or factors that may impact the Roads asset class. These could identify a potential gap in Council's planning or resource allocation that could cause a risk to achieving the current level of service expected [or perceived] to be expected by the community.

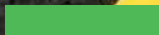
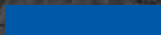
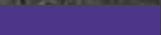
Table 6.1: Demand Drivers, Impacts and Demand Management Response

Demand Driver Type	Primary Factor	Relationship	How this will impact current operations	Potential response (ie Residual Treatment)
Infill Development	Limited On-Street Parking - Smaller frontages & more cars	Urban Design	Traffic Management Increase in resident complaints	Parking Bay Designs Line marking Review Control developments to pair neighbouring driveways to allow some street parking
Infill Development	Road surface damaged by new services trenching and poor reinstatement	Finance (depreciation)	Roads not achieving expected life	Reinstatement Officer position to be appropriately resourced to follow up with utilities and developers
Infill Development	More traffic control, ie roundabouts, line marking, safety bars	Maintenance	Increased maintenance – kerb repair and line marking	Resourcing
Surface temperatures	Road surface a significant contributor to surface temperature increase	Climate adaptation	Increase tree canopy in streets New asphalt cooling products/treatments	Investigation and establishment of tree planting strategy and implementation plan, Carefully review and select industry asphalt cooling products.
Defects	Road cracking and kerb lift through expansion and shrinkage of surface and sub surface through temperature variations	Climate adaptation	Increased maintenance – kerb and road surface repair. Reduced life in road assets – potential increase in depreciation	Consider alternative construction methods to increase flexibility in pavement and surface binder to reduce cracking

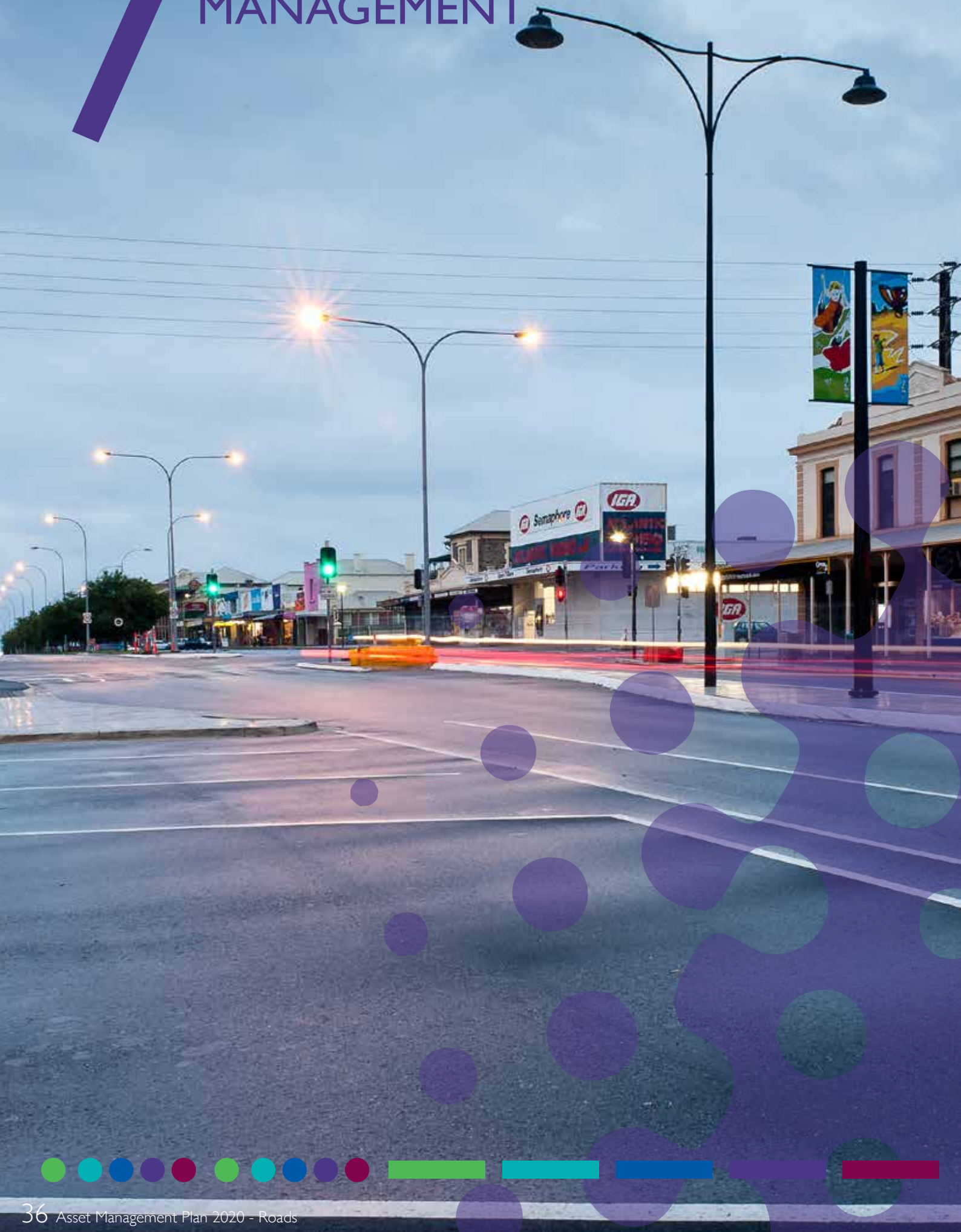


Demand Driver Type	Primary Factor	Relationship	How this will impact current operations	Potential response (ie Residual Treatment)
City growth	New assets	Urban Design	Increased resources required for asset management Additional maintenance & asset renewal	Documenting new assets in IPS Increasing budget for maintenance & asset renewal Increase in staff resource for maintenance & capital works projects.
City growth	Increased Traffic, Air Quality	Population increase, Economic development, Environment	Increased community complaints (traffic, noise and air quality)	Advocacy to State Government eg regarding freight routes, impacts of increased density development etc Integrated Transport Strategy
City Growth	Parking issues	Urban Infill	Increased community complaints	Increase Public Safety Officers (Regulatory services). Advocate alternative transport options. Integrated Transport Strategy
Technology	Demand for alternative forms of transport	Demographic – Social trends	Use of electric bikes - Conflict between cars and cyclists	Review bike plan and sharrow routes through Integrated Transport Strategy
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	Continue with 4 year condition rating programs of all assets
Financial	Global Oil Price	Environment	Increase to material costs (asphalt). Increase to operational costs	Use recycled rubber for use in asphalt binder Implement electric vehicles across fleet
Technology	Electric charging stations	Car parking, Environment	Loss of car parking in commercial precincts	Increase demand on Public Safety Officers – parking complaints
Technology	Driverless Vehicles	Asset Life	Vehicles following same wheel path, creating significant rutting impacts to road pavement	Discuss with industry groups when driverless vehicles become a reality.
Technology	Driverless Vehicles	Car parking Climate adaptation	A reduction in car parking need due to potential for self docking	Review parking requirements in various urban zones. Redesign of streets, which could allow greater verge widths – allowing more trees.
Safety	Vehicle speed limits on urban roads	Traffic	Potential reduction in speed limit in-line with Community expectations	Review through Local Area Traffic Management research and public engagement





7 RISK MANAGEMENT

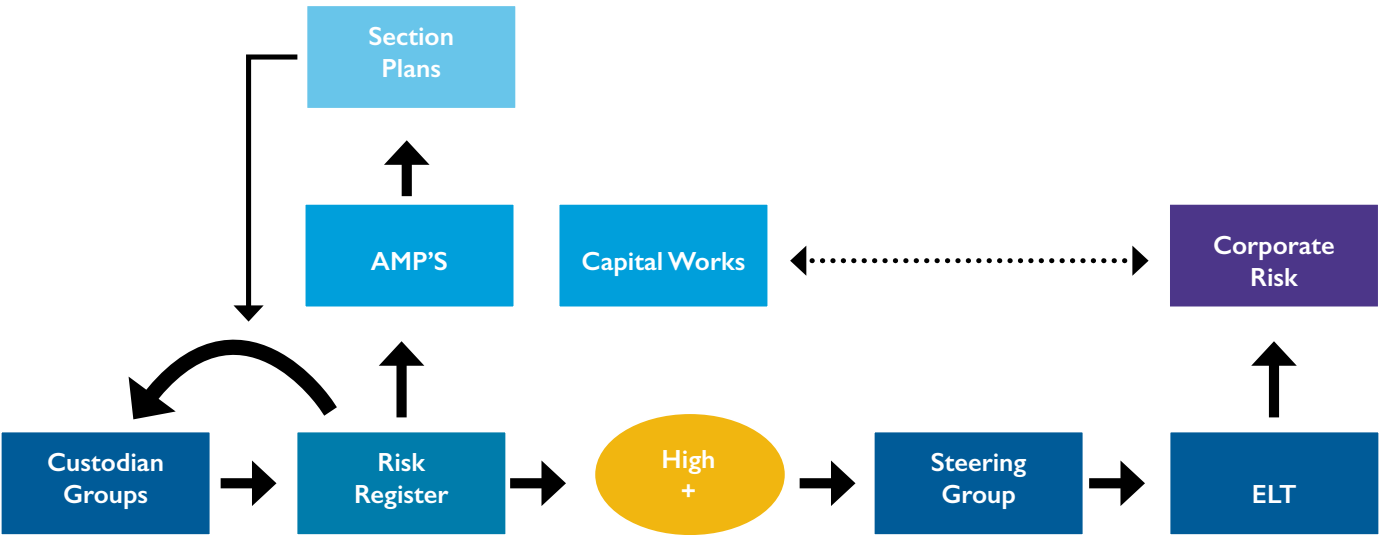


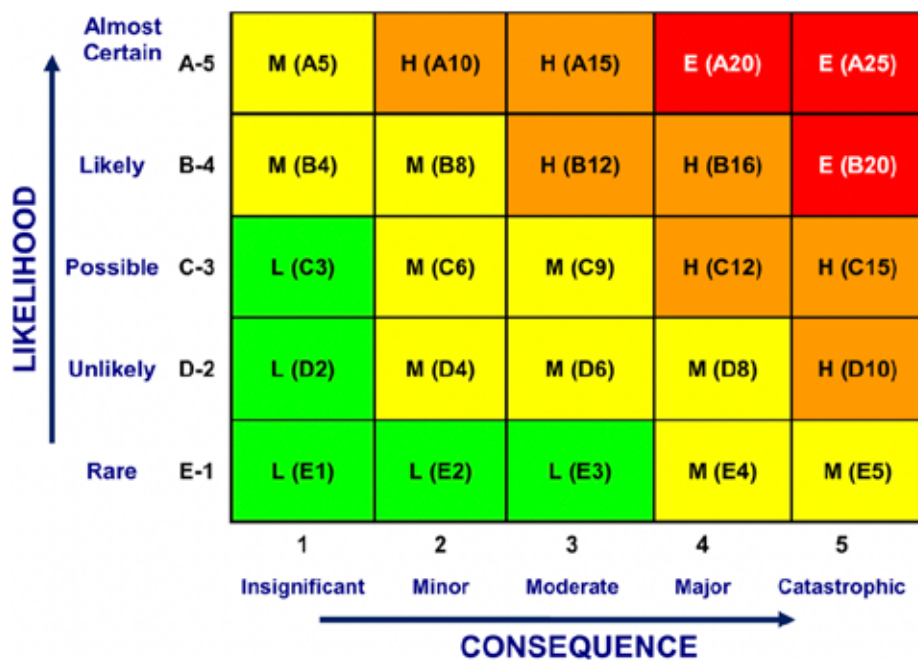
A key Action of the Asset Management Strategy was to establish an Asset Management Risk Register that will identify critical risks that will result in loss or reduction in service from infrastructure assets or a ‘financial shock’ to the organisation. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

The following diagram demonstrates how the identification of risk will inform the Capital Works Program and be managed through Section Plan and Risk register reviews.

Using the Corporate Risk template, the internal Road Custodian Group identified the following risks as summarised in Table 7.1. These risks are reported through the Asset Management Steering Group to Executive Management and Council.

Diagram 7.1: Asset Services Risk Management Flow





RISK LIKELIHOOD TABLE			
Score	Frequency	Chance	Probability
Almost certain	Regularly and frequently occurs. Occurs 9 out of 10 times	Is expected to occur in most circumstances.	>90%
Likely	Has occurred infrequently over the past 2 years. More than 7 times in last 10 years.	There is a strong possibility that the event will occur in normal circumstances.	>65%
Possible	Has infrequently occurred on a number of occasions over the past 5 years.	The event could occur at some time.	>25%
Unlikely	History of an occurrence in the last 10 years. 2 or 3 times in this period.	There is a slight possibility that it could occur at some time.	<25%
Rare	History of an occurrence in last 25 years or no knowledge of any occurrence.	Highly unlikely will occur and only in very exceptional circumstances.	<5%



Table 7.1: Critical Risks and Treatment Plans

Risk Description	Consequence Category Description	Inherent Risk	Treatment Control	Residual Risk	Additional Treatment Control	Risk Acceptable
Not having adequate budget to match road consumption	Service Delivery & Leadership	EXTREME-A20	Condition rating program - 4 year Consider treatment type to intervene earlier - cheaper intervention to deliver more works - Adopting more sustainable treatments and earlier rejuvenation methods to get better value for money Field Staff input in regards to severity of road requiring works	HIGH-B12	Increase Budget Review Service Level Does the 27KM/p.a. need to be reconsidered Consider new treatments and trials and intervention levels	No
Utilising recycled plastics and the impact on life expectancy on the asset	Service Delivery & Leadership	MODERATE-C9	Monitor the performance of these roads in comparison to roads not using the material Research and studies from other Councils Discontinue the rollout of this material across the road network if performance reduced significantly Follow adapt west strategy for design on assets (for example floor levels, increase capacity of pipes etc) Weighted average mean temperature (review due to climate change) for example shrinkage and expansion of asphalt during extreme temperature change Applying different treatments to mitigate the risk will have a cost increase (change in engineering standards and life expectancy). Adopting more sustainable treatments and earlier rejuvenation methods to get better value for money Increase budget Providing adequate resources to work safely Providing training for staff JSA's, SWMS, TRA's in place	MODERATE-D4		Yes
Extreme environmental event and the impact on the road infrastructure	The Environment	MODERATE-C9	Productive toolbox meetings Adequate resourcing to maintain the asset infrastructure Budget increase Streamlining processes Working across Councils Increase budget to deliver same quantity of replacement roads	MODERATE-C6	Additional learnings and research with regards to materials performance and selection of materials	Yes
Extreme environmental event and the impact on the road infrastructure	Service Delivery & Leadership	MODERATE-C9	Competitive procurement Financial monitoring Alternative treatments Improved design to incorporate trees and roads Tree species selection Design guidelines (development)	MODERATE-C6		Yes
Adequate staff resources to meet asset maintenance service standard delivery	Safety & Physical Assets	MODERATE-C9	Monitoring weather warnings, Emergency response activities, setting up transportable pumps in known risk areas Establishing Non Return Valves in known risk areas.	MODERATE-D4		Yes
Adequate staff resources to meet asset maintenance service standard delivery	Service Delivery & Leadership	HIGH-B12		MODERATE-D4		Yes
Significant material price increase	Service Delivery & Leadership	HIGH-C12		MODERATE-B8		Yes
The impact of natural assets on roads (trees)	Safety & Physical Assets	HIGH-B12		MODERATE-D4	Review tree species selection Root barriers Water sensitive urban design (WSUD)	Yes
The impact of waterways on roads	Safety & Physical Assets	MODERATE-B8		MODERATE-B4	At culvert or river crossings, to review design and increase downstream capacity, review culvert size at crossings.	Yes

Risk Description	Consequence Category Description	Inherent Risk	Treatment Control	Residual Risk	Additional Treatment Control	Risk Acceptable
Changes in Community service standards and expectations	Community Wellbeing	MODERATE-C9	Measuring Level of Service through customer survey Condition rating inspection every 4 years Capital Roads program Workshop with Elected Members Service standards - priority of 4 days to make safe, and 14 days to resolve Proactive road defect identification to inform capital program	MODERATE-C9	Review Service Standards Improve community communication on cost to service ratios Proactive road maintenance on minor works Review treatment methods to improve life and improve appearance of roads	Yes
Changes in Community service standards and expectations	Service Delivery & Leadership	MODERATE-C9	Reviewing condition rating every 4 years Reviewing customer satisfaction through community survey Elected Member workshops Service level currently 4 days for priority, and 14 for completed requests Using more short term treatment types such as microseal and liquid roads to improve condition using more cost efficient methods Focusing on replacement to consumption at 27kms	MODERATE D4	Continue condition rating every 4 years, and customer surveys Continue elected member workshops review km's of road replaced review budget requirements review service standards for maintenance	Yes
Service Authorities works on Council roads	Service Delivery & Leadership	MODERATE-B8	Re-instatement Officer to review services associated from developments Defined Service Standards Council replaces defectives works from service provider The Public Assets Coordinator role to ensure developers adhere to the Statement of Requirements (SOR) for major land development, and ensure Developers requirements to hand over design and constructions plans to be appropriately handed to Asset Officer to capture in Asset Management System (IPS)	MODERATE-C6	Define service standard agreement with service authorities Business review utility providers financial impact on council roads recommendations from business review	Yes
Inadequate internal controls and processes for accepting of new assets	Service Delivery & Leadership	MODERATE-A5	Use of Road Custodian Group to capture knowledge of existing members of the field team. Use Corporate asset systems to capture information.	MODERATE-B4	To include asset owners in walkovers and review of design plans. Review Statement of Requirements - specific to each development, incorporating latest design requirements. To receive better, more accurate, AS-CON drawings.	Yes
Loss of corporate knowledge staff turnover	Service Delivery & Leadership	MODERATE-A5	Improved treatment from paving to stencil asphalt Communication with community to alter treatment Review use and consider on a 'case by case' basis only	LOW-C3	Continue with current process of walking roads to confirm treatment, and capturing in Corporate Asset System	Yes
Overuse and inappropriate use of stencil/paved treatments on roads	Community Wellbeing	MODERATE-C6	Review use and consider on a 'case by case' basis only	MODERATE D4	Establish a Transport Strategy - and design guidelines ProActive review of capital program Through SOR and Public Asset Officer reviews - all incoming developer masterplans are in accordance with design guidelines Staff require support from ELT and EMs	Yes
Overuse and inappropriate use of stencil/paved treatments on roads	Service Delivery & Leadership	LOW-C3		LOW-D2		Yes



8

WHAT
DOES IT
COST?



Required 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.

Table 8.1: Actual Maintenance Expenditure

Year	Road	Kerb	Total Road & Kerb	Traffic*
2015/16	\$1,123,976	\$802,702	\$1,926,678	\$1,944,152
2016/17	\$1,324,278	\$1,030,207	\$2,354,485	\$2,014,196
2017/18	\$1,307,716	\$767,648	\$2,075,364	\$1,871,487
2018/19	\$1,351,869	\$970,982	\$2,322,851	\$1,754,809
2019/20	\$1,398,892	\$987,204	\$2,380,096	\$1,761,735

The Traffic category has been separated, as this expenditure generally relates to gardening maintenance in traffic devices, traffic studies, sign replacement, and replacement of line marking. These services do not contribute to maintaining the life of the asset, but do deliver important services to community safety.

Table 8.2: Assets to be Maintained

Asset Type	Quantity	Replacement Value	Annual Depreciation
Road length	695.6 km's	\$506,132,105	\$7,170,481
Kerb and Gutter length	1437.2 km's	\$230,871,956	\$3,201,595
Traffic Control Infrastructure	615	\$19,445,273	\$457,241

The feedback received through the recent customer survey indicated that the City's residents place a high level of importance of a well maintained road network, with a higher level of dissatisfaction towards traffic speeds. The qualitative feedback suggested an absolute desire to repair potholes, which is further supported by the amount of customer requests received for both pothole and kerbing repair works.

The total of the road and kerb annual maintenance budget of \$2.2m is 20% of the \$10.8m annual depreciation cost of this important infrastructure.



Keeping with Growth

The City of Port Adelaide Enfield presents considerable opportunity for Major Land Development across the entire Council area. The following table identifies the Major Land Developments since 2010, and what new developments will contribute to Council's asset register.

Table 8.3: Major Land Developments within Council

Major Land Development since 2010	New Major Land Developments
Lightsview	Dock I
Northridge (Enfield High school)	Blair Athol Urban Redevelopment
Croydon Park TAFE site	Feltchers Slip
Angus Estate (Mansfield Pk Primary School)	Neptune Tce
Osmond Tce (Gilles Plains)	Strathmont Centre site (Oakden)

Council has fluctuating network growth from year to year which is difficult to trend, however since 2012 the network has grown approximately 0.5% per year through Major Land developments. This growth provides an approximate 4km's of new road asset each year. Using this growth rate of 0.5%, the following chart demonstrates the need to budget maintenance expenditure in-line with projected network growth.

Chart 8.1: Road and Kerb Maintenance Expenditure to Projected Network Growth

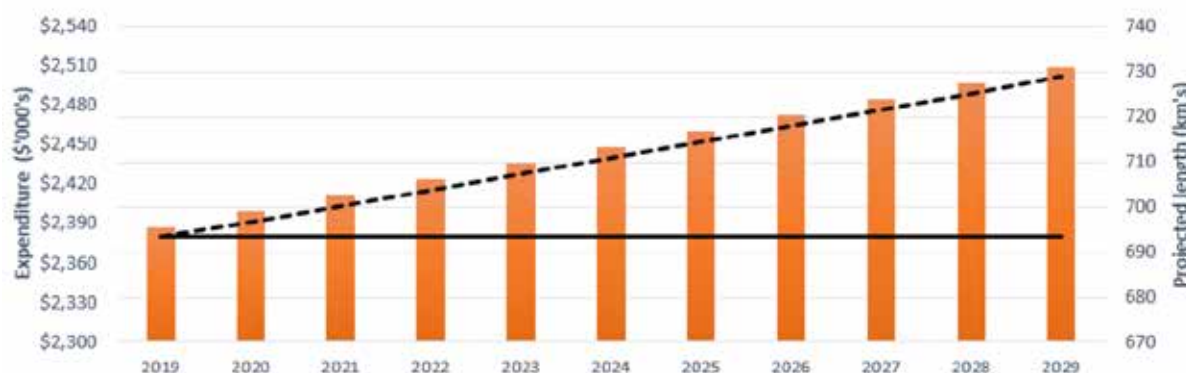


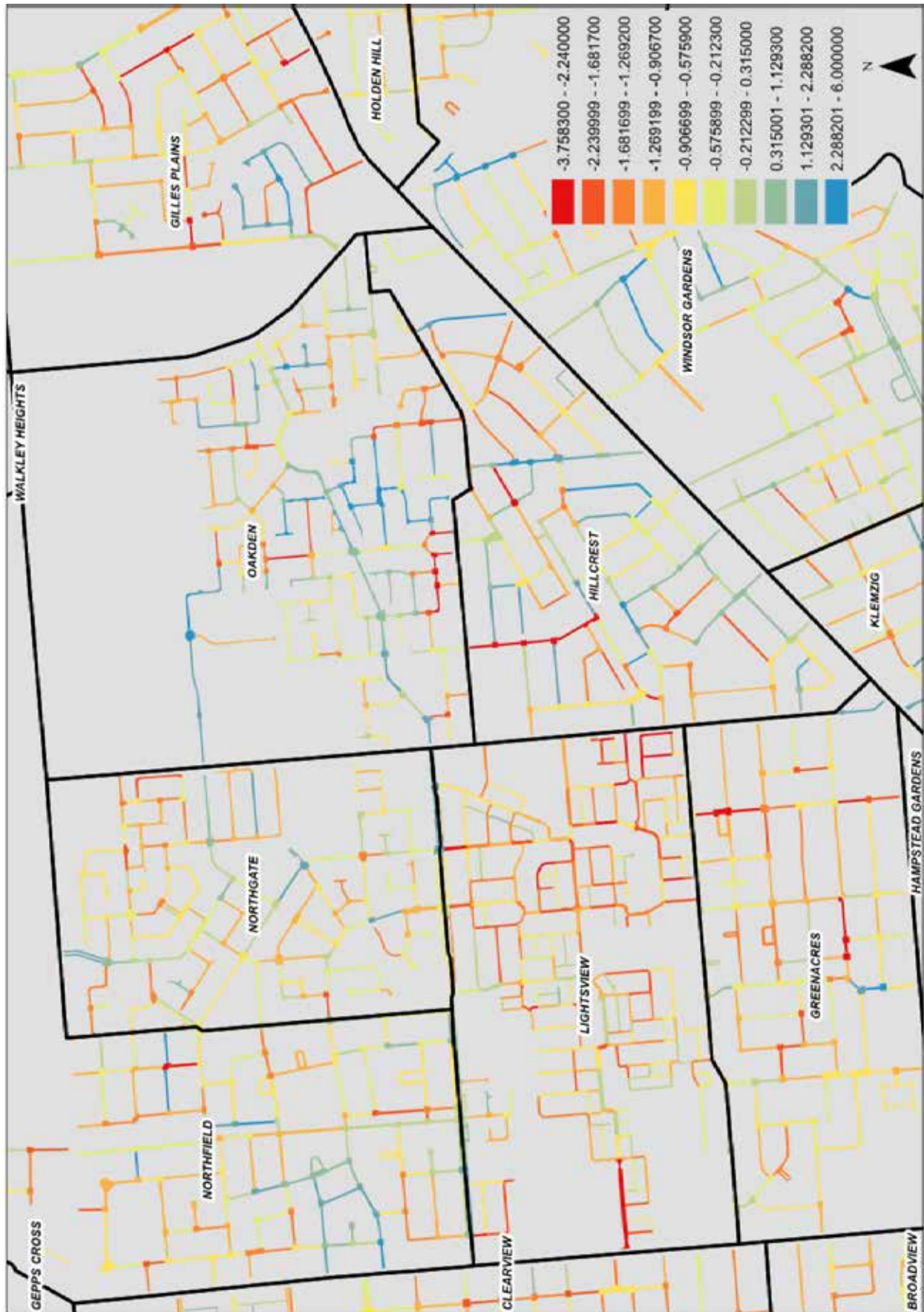
Image 8.1 identifies the shift in the condition index over the past 4 years which is as a result of either deterioration (roads turning orange to red) or works intervention (green to blue).

What is of interest is that Stage I of Lightsview commenced 14 years ago in 2006, which is now beginning to show signs of deterioration – in fact many of the roads are identified as orange to red. Although there are some varying reasons for the level of deterioration, such as a higher than normal level of construction traffic, the majority of cases are simply due to the reactive nature of the soil in this region.

As with all road infrastructure gifted to Council through major land developments, Council must continue to increase budgets in line with network growth.

This is particularly relevant to adhering to community expectation levels (customer requests) and achieving the outcomes of the City Plan 2030. As discussed in Section 5, works resulting from customer requests for road and repair, and line marking services are collectively in the top 5 requests of all Council services, and the Community Perception survey notably identified roads as a highly important service.

Image 8.1: Condition Index change between 2016 and 2019 – Eastern region



Projecting Capital Expenditure for Long Term Planning

Renewal and 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.

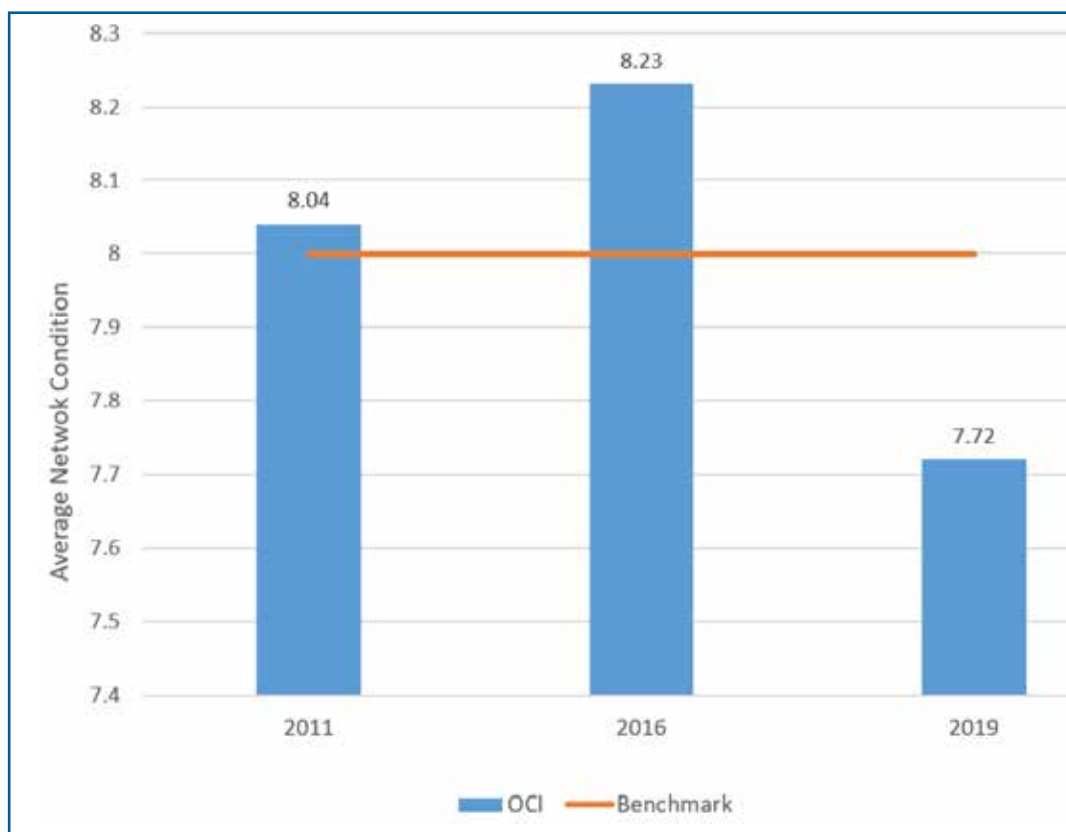
What are our expenditure objectives? - Establishing a Benchmark

As previously identified on page 16, the consistent method in conducting all past condition audits has enabled this Council to establish a reliable performance benchmark. This measure of performance is based on monitoring our level of spend and reviewing the Overall Condition Index following each audit.

Having the benefit of 3 condition audits, and an asset management system (IPS) that is well maintained and effective at capturing work costs, this Asset Management Plan suggests that the Performance indicator should be set at 8.0.

The 2016 Road Asset Management Plan established the following value of works, which was based on a linear annual spend using the estimated value of works from the 2016 condition audit.

Chart 8.2: Average Network Condition (OCI) Score Comparison



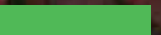
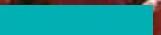
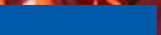
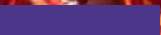


Table 8.4: The 2016 Asset Management Plan Renewal Expenditure Projections

Target Year	Value of Works	Linear (Value of Works) Required Budget
2016	\$10,284,200	\$12,570,242
2017	\$9,065,178	\$12,758,077
2018	\$6,581,895	\$12,945,912
2019	\$12,829,688	\$13,133,747
2020	\$14,360,161	\$13,321,582
2021	\$15,881,106	\$13,509,417
2022	\$22,204,857	\$13,697,252
2023	\$14,448,157	\$13,885,087
2024	\$19,630,849	\$14,072,922
2025	\$17,840,573	\$14,260,757
2026	\$13,606,892	\$14,448,592
2027	\$14,607,673	\$14,636,427
2028	\$17,472,094	\$14,824,262

*Highlighted is the required 2020 works budget at \$13.3M.

Although Councils 2019 average OCI score has returned 7.75, below the expected performance benchmark of 8.0, our technical staff are confident that this score was impacted by a period of higher than normal reconstruction and deep-lift type of work activities conducted, along with potentially over investing in kerb replacement. In 2018 and 2019, our capital works staff have concentrated heavily on increasing the kilometres of network replacement to match network consumption. This simply calculated as:

Network Length (695km's) / Average Surface life (25yrs) = 28 km's

As mentioned earlier in Section 4 (p.18), Administration has for the first time added 'Rejuvenation' as a treatment type to Council's in-house Predictive Model. The objective of this adjustment is to develop a works program more likely to achieve the require 28km a year target.

In 2024, Council will:

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

Objective 2: Have rejuvenated & renewed an average of 28km's of road over the 4 years.

*OCI score to be +/- .1 of 8 to allow for potential variance in data collection



What should we budget to achieve our objectives?

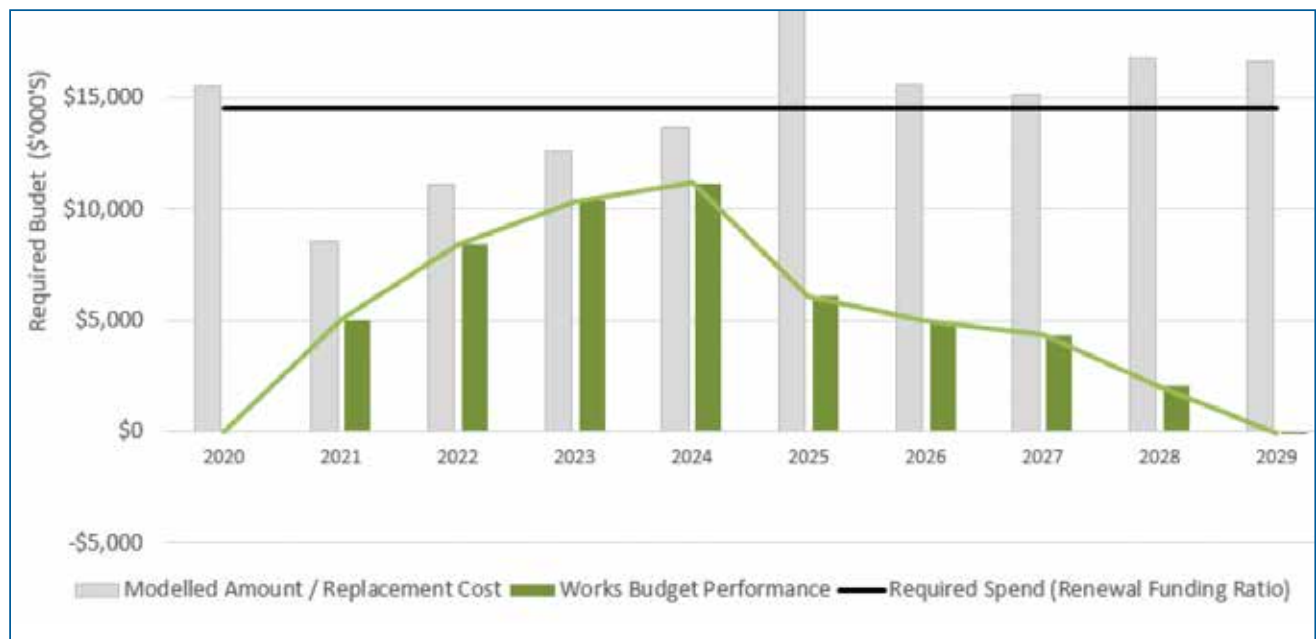
This Council uses the Asset Renewal Funding Ratio as its indicator for Asset Management performance. The Asset Renewal Funding Ratio is defined as:

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a Long Term Financial Plan (LTFP) relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Using net present value of works identified from the 2019 condition audit to calculate the targeted annual spend to achieve a Renewal Funding ratio of 100%, Council will require an annual present value (PV) budget of \$14.54M.

Chart 8.3: Required Spend to achieve 100% Renewal Funding Ratio



The green bars track the progress of Council's works program against the determined annual spend of \$14.54M budget per year (black line). The grey bars depict the modelled renewal works projected per year. The green bars indicate how far ahead or behind the modelled amount Council would be over the next ten years. The green line traces the progress, demonstrating that Council will have completed the projected works program (grey bars) on the 10th year – identifying that this budget will provide 100% of the funding required to renew the asset over the ten year projection period.

As can be seen that between years 2021 and 2024, Council will be ahead of the projected renewal program in preparation for years 2025 onwards where all projected annual renewal costs exceed the budgeted \$14.54M. This is demonstrated by Chart 8.3.

As previously discussed on pages 17 and 18 of this document, the long term focus of Administration has been to manage and control the nature in which the condition of the network has been captured. This has approach has ensured consistency in projections post audit modelling, which has enabled confidence in the use of this data for future projections.

With a high level of confidence, Administration have developed a 20 year projection of renewal budget. The following is a scenario based chart (8.4), trending expenditure levels for both 10 and 20 year Renewal Funding Ratio's.

Table 8.5 provides the Renewal Funding Ratio's (RFR) delivered through varying expenditure budgets over the 10 and 20 year projection periods.

Table 8.5: Renewal Funding Ratio Analysis by proposed expenditure levels

RFR Projection Period	Period Works Value	RFR (%) by Proposed Annual Budget (PV) \$'000's			
		\$14,548	\$14,109	\$13,670	\$13,231
10 Years	\$145,482,166	100.00%	96.98%	93.96%	90.95%
20 Years	\$264,624,992	109.95%	106.63%	103.32%	100.00%

*RFR = Renewal Funding Ratio

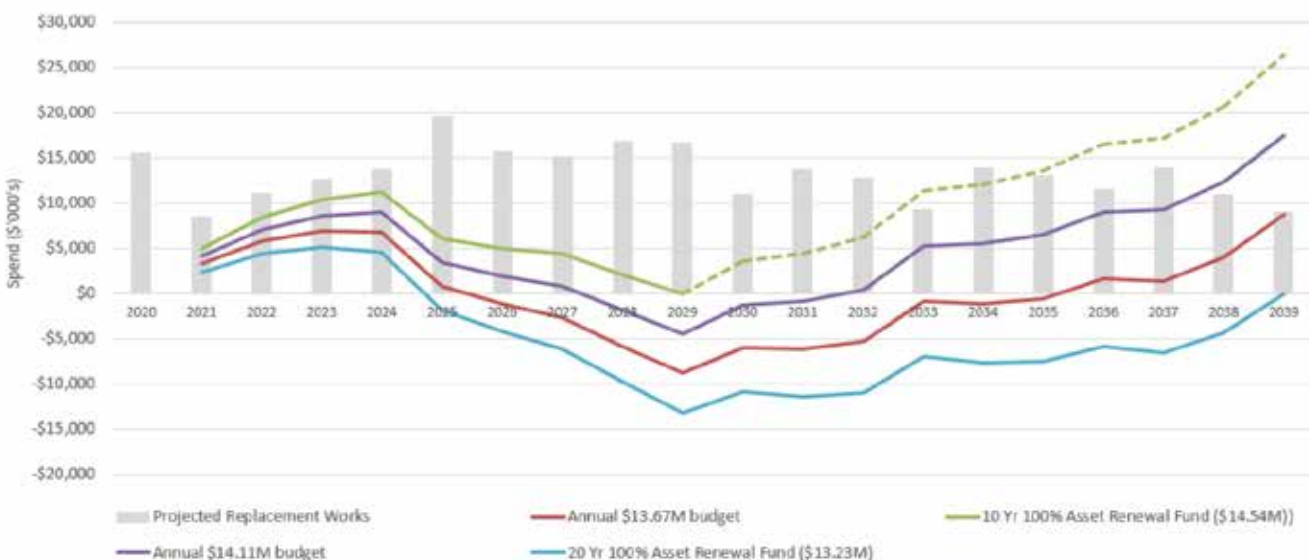
This scenario presents an interesting business case for establishing a budget that will achieve the two objectives set within this AMP – the first to achieve a network OCI score of 8, and the second to increase our kilometres of road renewal to near 28km's.

Chart 8.4 below, portrays an interesting scenario of making decisions for the short term versus a longer term vision of sustainable financial management. Various spending options have been provided, developed from the renewal projections modelled from the 2019 condition audit data.

Given that Road infrastructure is Councils biggest capital cost per year, with an annual depreciation expense of approximately \$10.4M, it is the asset class that has the most impact to Council's capital and operational costs. It is therefore imperative to manage the future spend with diligence. It is also Administrations belief that a constant budget across the long term is both better for controlling Council rate volatility, and also better for managing in-house resourcing and works planning.

As mentioned in the third dot point of chart 8.4, the inner tertile (middle third) presents the appropriate zone to be focusing the long term budget. It must be noted that a lesser renewal budget will reduce the performance of the network. This will likely increase Maintenance expenditure given the potential for more potholes, environmental cracking, and kerb repairs.

Chart 8.4: 20 Year Scenario Budgets using Renewal Fund Ratio's for LTFF



- The Green line achieves a RFR of 100% over 10 years, however should this level of spend continue Council will be approx. \$13M ahead of the works program in 2039. The RFR in year 20 would be 110%
- The Blue line achieves a RFR of 100% over 20 years. Although this is the lowest level of spend the Community may perceive Council as delivering a low service level with potentially deteriorated roads from 2026 through to 2039.
- The purple and red lines define the limit of the inner tertile (middle third). Within this range Council reduces its risk of underperforming assets however also balances the financial impact to rate payers.

The Proposed Expenditure

This AMP has been developed in consideration of the City Plan 2030, which under the Leadership theme requires value for the rate dollar, identifies the need to be accountable by striving for community satisfaction of services through engaging with people, relevant organisations and businesses.

<h2>LEADERSHIP</h2> <h3>What it looks like</h3> <ul style="list-style-type: none"> • Strategic • Accountable • Engaged 	<h2><i>A City confident in its leaders</i></h2> <h3>Indicator</h3> <p>proportion who say Council delivers value for the dollar</p> <p>proportion who are satisfied with Council services</p> <p>proportion who say Council is engaging with the people and relevant organisations and businesses</p>
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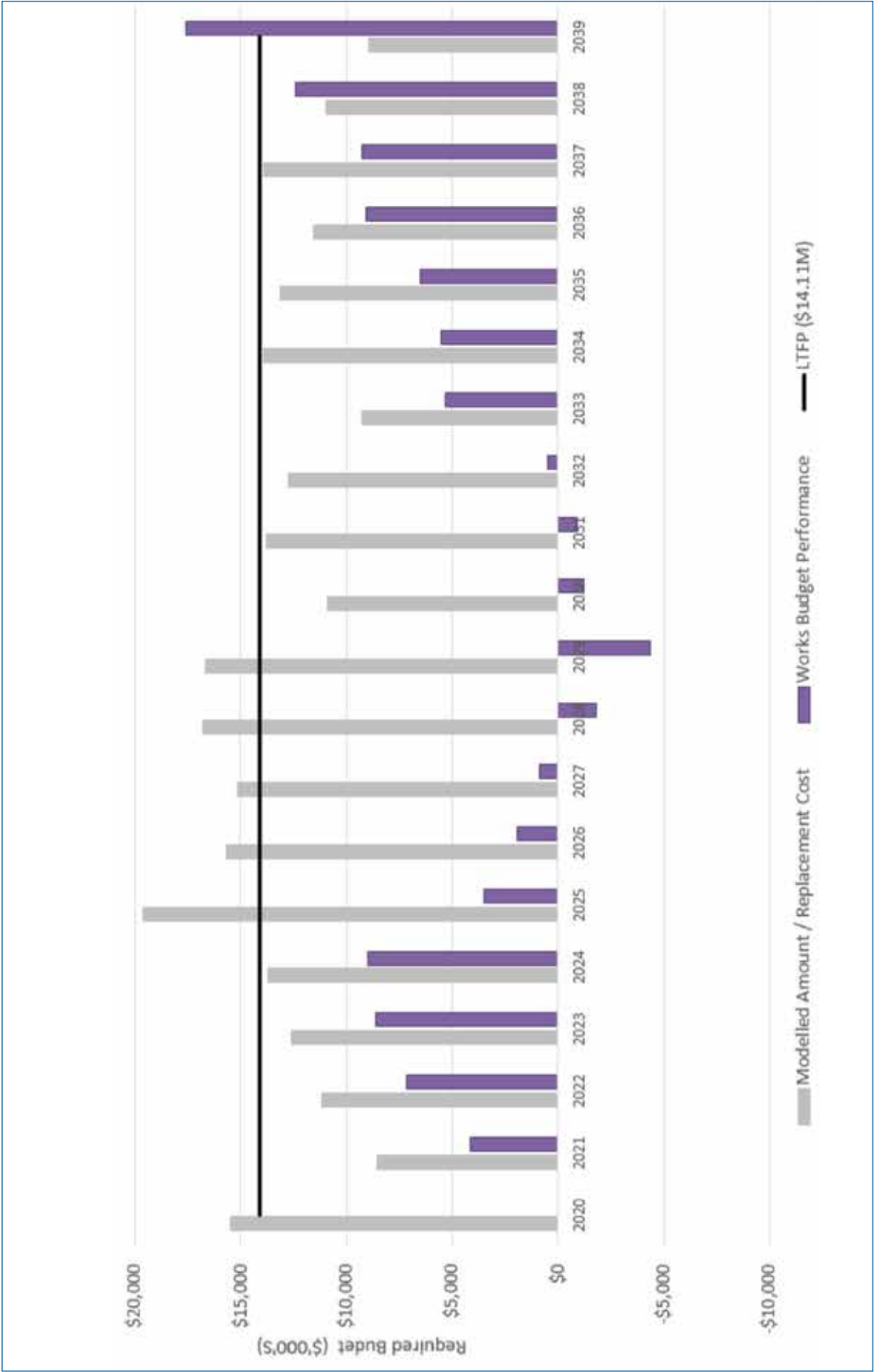
With the following key points in mind, the long term annual renewal budget should be set at a Present Value (PV) of \$14,110,000 for Road and Kerb, with a network growth factor of 0.5% per year. A separate budget of \$2,200,000 for Traffic Control should further be established as Capital New / Upgrade.

- The combined Replacement Cost of Road and Kerb is \$736 Million with an Annual Depreciation Cost of \$10.4 Million.
- The current network OCI score is below the benchmark level of 8. It is also the lowest score of all three condition audits.
- Council needs to increase the kilometre of Renewal to keep up with asset consumption. This has been identified as a High residual risk.
- Through major land developments, the Council road network increased on average by 3-4km's each year (0.5%)
- The recent community survey identified the road network to be of very high importance, with high dissatisfaction towards urban road traffic speed and volumes.
- Council's population is increasing at a rate of 7.5% per Census period, and per household car ownership is increasing.
- There are 200,000 car trips within Council's road network every work day. This is set to increase with population increase.
- Temperature variations by Climate Change is causing road degradation through soil expansion and shrinkage.
- Likely increase to global crude oil price, relating to increase to asphalt prices and other operational costs.
- Identified risk of potential lower useful life of alternative recycled products in asphalt binder, however looking to increase use to achieve environmental initiatives.
- A lower annual Capital Renewal budget will likely increase the cost of future Maintenance budgets.

The following chart 8.5 depicts the performance of the \$14.11M annual budget against the projected annual cost of works. This chart is in Present Value with no network growth. This level of expenditure is expected to achieve the above dot points.



Chart 8.5: Modelled Capital Renewal Budget at \$14.11 Million per year (PV) excluding network growth



Informing the Long Term Financial Plan (LTFP)

The proposed annual budget of \$14.11M for roads renewal will deliver the following Renewal Funding Ratio's:

10 Year: 96.98%

20 Year: 106.23%

Using the 2011 and 2016 Condition audits as a benchmark for network performance, and reviewing our level of expenditure to achieve an improved condition in 2022 establishes a financial model to maintain what is considered an expected level of service by our Community.

The average capital replacement budget over the last 4 years has been \$12.54M, which in conjunction with an average maintenance spend of \$2.3M has seen a reduction in the network OCI to 7.72.

This total expenditure has proven unsuccessful in satisfying the performance benchmark established by this version of the Roads Asset Management Plan. This is further justified by the number of road tasks created through customer requests, and the community perception survey that identified the road asset as extremely important with a higher level of dissatisfaction when considered against other asset types. The level of dissatisfaction received further reflects the level of importance the community places on the road asset.

The \$14.11M is derived through the consideration of network performance over the long term against the projected renewal program from the recent condition audit in 2019. The proposed expenditure is reflective today against the 2019 network length. As modelled on page 44, the network is growing annually at an approximate rate of 0.5%. Accordingly, this network growth factor should also apply to the renewal budget.

Table 8.6: Projected Maintenance and Capital Expenditure for LTFP

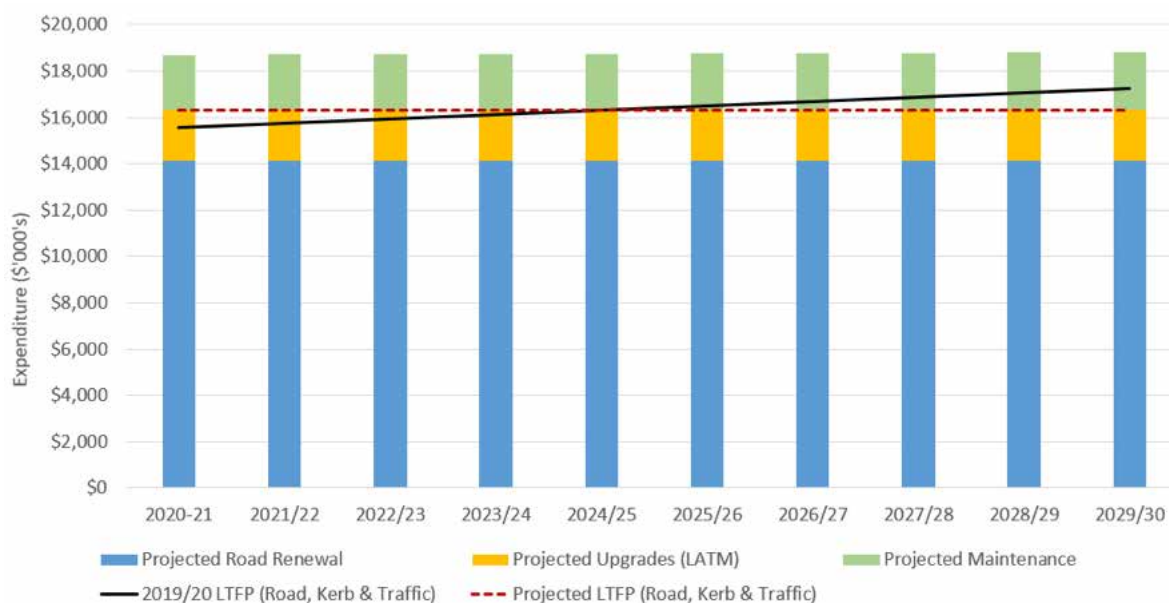
Year	0.5% Growth
2020/21	\$14,110,000
2021/22	\$14,180,550
2022/23	\$14,251,453
2023/24	\$14,322,710
2024/25	\$14,394,324
2025/26	\$14,466,295
2026/27	\$14,538,627
2027/28	\$14,611,320
2028/29	\$14,684,376
2029/30	\$14,757,798

Chart 8.6 details the proposed expenditure by this Asset Management Plan.

The blue columns reflect the proposed budget for road renewal at \$14.11M with network growth at 0.5%, with the yellow columns identifying the endorsed LATM upgrades by Council at the March 2019 meeting. The green columns is maintenance, which also includes the 0.5% growth rate to match network growth from major developments. The solid black line is the current LTFP expenditure for Traffic and Roads combined. The red dashed line is the proposed expenditure from this AMP that will inform the next LTFP, if endorsed by Council.



Chart 8.6: Projected Maintenance and Capital Expenditure for LTFP



Note: The 2020/21 Annual Business Plan and Budget includes an additional \$2M than committed in 2019/20 LTFP.

The above chart identifies a saving across the 10 year projection period, with the red dashed line slightly under the current adopted LTFP in 2029/30. This is particularly important, given that the above chart is further reflecting growth in the network which was not considered in the previous Roads AMP.

It should be noted that the red dashed line is based on present value, therefore the LTFP and related Annual Business Plan and Budgets should apply the relative annual CPI price indexing.

This level of spend can achieve 28km's of renewal works each year, which will match the consumption of this important asset. By delivering 28km's of renewal works, the OCI will improve to achieve the established benchmark objective of 8.

Ultimately, the expenditure levels modelled within this AMP will provide a financially sustainable level of service at an acceptable level of risk, to present and future customers. However, and as identified through chart 8.4 (p.50), should the Elected Members require a higher level of service, then a higher level of expenditure will be required to reflect that decision.



9 FINANCIAL SUMMARY

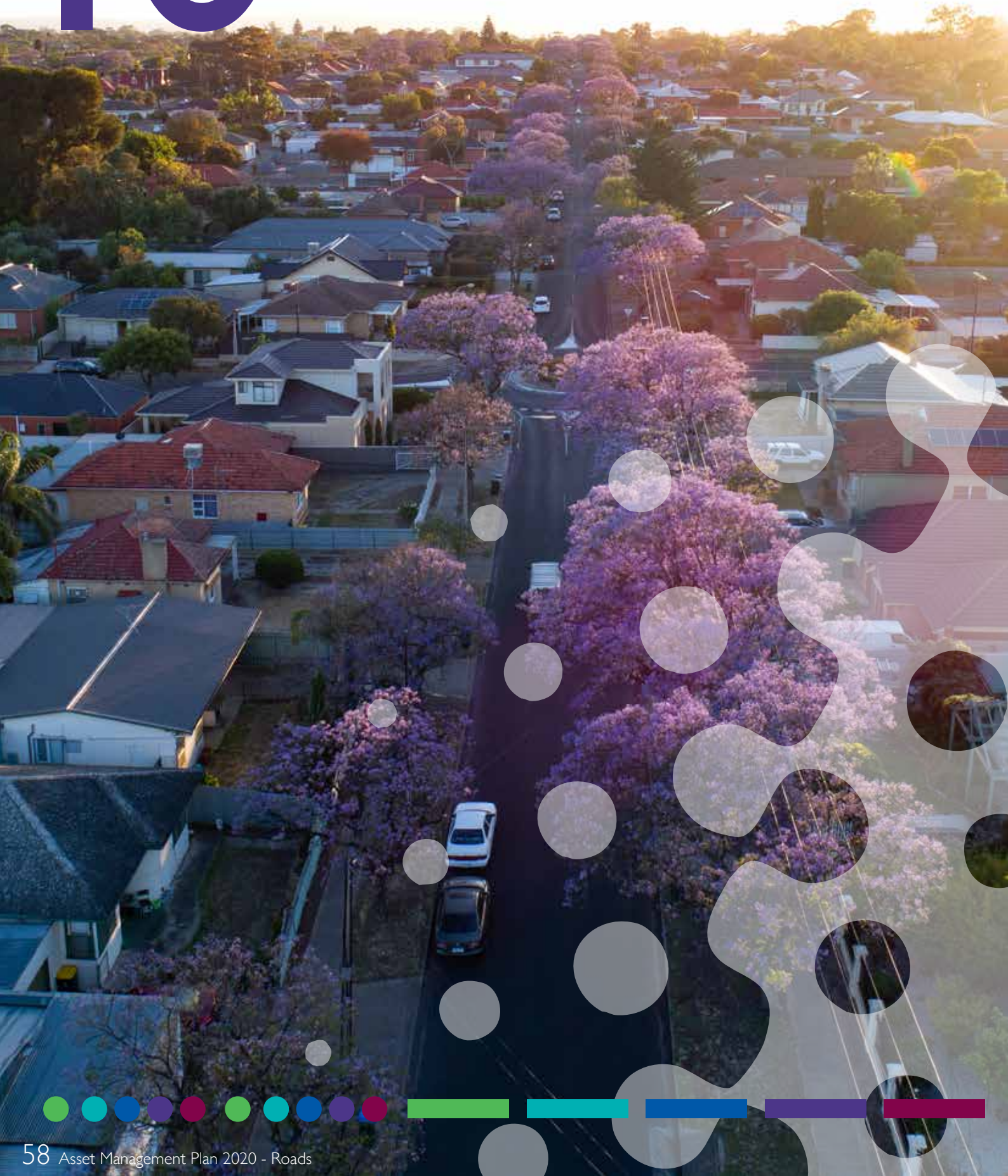


YEAR END 30 JUNE	ROAD AND KERB MAINTENANCE BUDGET	LTFP RENEWAL BUDGET	LTFP UPGRADE BUDGET (LATM)
2020/21	\$2,391,900	\$14,110,000	\$2,200,000
2021/22	\$2,403,860	\$14,180,550	\$2,200,000
2022/23	\$2,415,879	\$14,251,453	\$2,200,000
2023/24	\$2,427,958	\$14,322,710	\$2,200,000
2024/25	\$2,440,098	\$14,394,324	\$2,200,000
2025/26	\$2,452,298	\$14,466,295	\$2,200,000
2026/27	\$2,464,560	\$14,538,627	\$2,200,000
2027/28	\$2,476,883	\$14,611,320	\$2,200,000
2028/29	\$2,489,267	\$14,684,376	\$2,200,000
2029/30	\$2,501,714	\$14,757,798	\$2,200,000

Please note that the above figures are in present value, and are subject to CPI increase each year



10 IMPROVEMENT PLAN



Item Ref	Item Description	Responsibility
1.	Continue with the established Roads Custodian Group.	Asset Planning
2.	Undertake Road condition Audit by 2023	Asset Planning
3.	Monitor and review the performance of the reseal/reconstruction programs, and investigate improvements to complete additional km's to achieve network consumption levels.	Custodian Group
4.	Investigate measures to capture additional life to road segments by maintenance activities.	Asset Planning
5.	Monitor the performance of rejuvenation treatments on the network to measure their efficacy and performance	Custodian Group
6.	Continue trialing environmental sustainable resurfacing products, and measuring performance against existing treatment materials	Custodian Group
7.	Continue to review useful lives	Asset Planning
8.	Review method of capturing Planned Maintenance work to accurately account for planned vs reactive activities.	Asset Planning



GLOSSARY



Annual service cost (ASC)

1. Reporting actual cost
The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
2. For investment analysis and budgeting
An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Asset renewal funding ratio

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 [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date.

The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Deferred maintenance

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.



Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

Expenses

Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Financing gap

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

The defined service quality for a particular service/ activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost *

1. Total LCC The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. Average LCC The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.



Life Cycle Expenditure

The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

Planned maintenance

Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

- **Reactive maintenance**

Unplanned repair work that is carried out in response to service requests and management/supervisory directions.

- **Specific maintenance**

Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

- **Unplanned maintenance**

Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operations

Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Operating expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.



Operating expense

The gross outflow of economic benefits, being cash and non cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operating expenses

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio

Ratio of estimated budget to projected expenditure for operations, maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Operations, maintenance and renewal gap

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of annual asset renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *

A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months.

Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.



Service potential

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/ public sector to value assets, particularly those not producing a cash flow.

Service potential remaining

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the Council.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, Glossary

*Additional and modified glossary items shown **







CITY OF
Port Adelaide Enfield