



STRATEGIC Asset Management Plan

Version 1 July 2020

 City of Ryde

Lifestyle and opportunity
@ your doorstep

Document Control		SAMP Template IIMM Sec 4.2.3 Format			
Document ID: City of Ryde SAMP v9.doc					
Rev No	Date	Revision Details	Author	Reviewer	Approver
1	July 2020	Updated SAMP for 2020	SD		

TABLE OF CONTENTS

EXECUTIVE SUMMARY	4
1 INTRODUCTION	6
1.1 Scope of Asset Management System	7
1.2 Purpose and Structure of Asset Management System	7
1.3 The Planning Framework	8
1.4 Asset Management Objectives	10
1.5 Responsibility for the SAMP	10
1.6 Planning Timeline	10
2 STRATEGIC ORGANISATIONAL CONTEXT	11
2.1 Services Provided	11
2.2 Our Stakeholder/Customer Expectations and Issues	11
2.3 Strategic Challenges	12
3 ASSET PORTFOLIO	16
3.1 Financial Status	16
3.2 Asset register	17
4 ASSET MANAGEMENT OBJECTIVES	18
4.1 Where do we want to be?	18
4.2 What does it cost?	20
5 ASSET MANAGEMENT PLANNING APPROACH (ACTION PLAN)	21
5.1 Levels of Service	21
5.2 Demand Management	21
5.3 Infrastructure Risk Management	22
5.4 Operations and Maintenance Strategies	22
5.5 Renewal / Replacement Strategies	23
5.6 New and Upgrade Assets Strategies	24
5.7 Disposal Plan	24
5.8 Service Consequences and Risk	24
5.9 Assumptions and Confidence Levels	25
5.10 Improvement Plan	26
6 FINANCIAL SUMMARY	28
6.1 Financial Indicators and Projections	28
6.2 Funding Strategy	28
6.3 Expenditure Forecasts	28
7 CONCLUSION	31
8 REFERENCES	32

EXECUTIVE SUMMARY

At present, Council manages over 150 services and is responsible for \$1.5 billion worth of assets with an annual budget of more than \$200 million.

These assets include land, buildings, infrastructure (roads, bridges, footpaths, and drainage systems), parks, sporting and recreational facilities and other associated operating assets that provide services essential to our community's quality of life.

The Strategic Asset Management Plan

This Strategic Asset Management Plan (SAMP) forms part of Council's 'Resourcing Strategy' suite of documents and enables us to show how:

- Our asset portfolio will meet the service delivery needs of its community into the future;
- Our asset management policies are to be achieved; and
- The asset management system will integrate with the Ryde 2028 Community Strategic Plan (CSP).

The SAMP is prepared following a review of the Council's service delivery practices, financial sustainability indicators, asset management maturity and fit with Council's vision for the future outlined in the CSP.

The CSP ties in with Council's Four Year Delivery Plan and One Year Operational Plan. The Four Year Delivery Plan provides a four year outlook of what will be done to achieve the vision and outcomes in the CSP while the One Year Operational Plan maps the actions and projects Council plans to deliver over the financial year including the resources needed to deliver them and the annual capital works program.

The SAMP outlines an asset management improvement plan detailing a program of tasks to be completed and resources required to bring Council to a minimum 'core' level of asset maturity and competence.

The plan summarises activities and expenditure projections from four (4) asset management sub-plans to achieve the asset management objectives.

Strategic issues

Over the coming decade, it is predicted that the City of Ryde will undergo significant change. It is anticipated that the City of Ryde Local Government Area (LGA) will house an additional 25,000 people by 2028 and 50,000 more by the year 2036 as forecast by the Northern District Plan.

The future will see the economy growing, more people will be working and studying within our LGA and it is forecast that up to a more than a third more cars will be utilising our already busy roads.

Current situation

Our aim is to continually improve maturity of asset management activities where the benefits exceed the costs. Costed improvement actions and target dates have been identified and documented in the Improvement Plan (Section 5.10).

This SAMP is based on a low to medium level of confidence information. Successful implementation of the Improvement Plan will increase the levels of confidence.

Financial projections are predicated on existing service levels remaining largely the same over the next 10 years whilst catering for the predicted increase in population.

Importantly, Council has resolved to redevelop the Civic Centre site by demolishing the existing buildings and replacing them with a range of modern assets including a new multipurpose community and cultural centre, a new administration building with both civic and commercial elements, a new public domain that connects the two major buildings, on-site basement parking, extensive landscaping and surrounding road re-alignment works.

Financial implications

The projected operating outlays necessary to provide the services covered by this SAMP are based on best projections made in Council's Long Term Financial Plan growth forecasts.

Based on the projections the following can be determined:

- The projected operations and maintenance of existing and new assets over the 10 year planning period is estimated at \$312.4M or \$31.2M on average per year.
- The projected required renewal costs (including upgraded and new assets) over the 10 year planning period is estimated at \$216.9M or \$21.7M on average per year.
- The projected expansion and acquisition (factored into the LTFP) over the 10 year planning period is estimated at \$443.3M or \$44.3M on average per year.

The combined projection of asset management

expenditure (including operating costs) over the next 10 years is estimated at \$972.6M or \$97.3M on average per year.

The estimated available funding for this period is \$952.4M or \$95.2M on average per year as per the long term financial plan. This is a shortfall of approximately \$20.1M over the life of the plan, primarily associated with the commissioning of a potential new library in the outer years of the Long Term Financial Plan. These projections will be reviewed and refined progressively every year.

The reality is that only what is funded in the long term financial plan can be provided. The emphasis of this SAMP is to communicate the consequences that this will have on the service provided and risks, so that decision making is “informed” and determine a funding strategy where required.

The allocated funding shows a deficit of \$2M on average per year of the projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan. This is shown in the figure below.

It is also important to note that the 3 key asset management ratios over the next 10 years.

Council’s Backlog Ratio will continue to exceed the benchmark, while the Infrastructure Asset Renewal Ratio will continue to comfortably exceed its target of 100%. The Asset Maintenance Ratio is expected to diminish below the benchmark of 100% (primarily from a shortfall in unbudgeted operational costs in future years) which could be partially offset by a redistribution of renewal funds to asset maintenance. Excluding operational costs, the ratio should comfortably exceed 100% in the future without a significant detrimental impact on the Infrastructure Asset Renewal Ratio.

Opportunities

By the end of 2020, Council will finalise the majority of its Asset Management data capture to ensure that funds are being appropriately allocated to correct asset classes while ensuring service levels are being maintained. This will ensure optimum service levels are maintained for each asset class and funding allocated accordingly.

Risks

There are risks associated with providing the service and not being able to complete all identified initiatives and projects. We have identified major risks as:

- Fragmented data and systems;
- Lack of confidence in the recorded quantity and condition of assets within the LGA;
- Low confidence decision support; and
- Resourcing of ongoing in-service monitoring and evaluation.
- We will endeavour to manage these risks within available funding by:
- Continuing to capture an updated profile of all assets within the LGA;
- Continuing to implement a consolidated asset data system;
- Prioritising and allocating resources to critical assets; and
- Implementing priority actions from the Improvement Plan.

Asset management approach

The key outcomes from the SAMP include:

- An Improvement Plan to manage risk, reduce lifecycle cost and achieve target service levels;
- Enabling data and system improvements;
- Governance and business process improvement via a Knowledge Management Strategy; and
- The alignment of best practice asset management with the IP&R Resourcing Strategy.

The next steps

Implementation of the SAMP will include the following improvement activities:

- Regular reporting of service and asset performance against set targets;
- Implement an Integrated Asset Management System as part of an enterprise software solution.; and
- Implement a resourcing plan to support enhanced levels of asset capital and maintenance planning, reporting and general strategic asset management.

1. | INTRODUCTION

The Strategic Asset Management Plan (SAMP) “includes documented information that specifies how organisational objectives are to be converted into asset management objectives, the approach for developing asset management plans and the role of the asset management system in supporting achievement of the asset management objectives”¹.

This SAMP is an integral part of our planning framework. This includes the organisational (Community) Strategic Plan, asset management (AM) policy, AM strategy/SAMP, AM plans for individual portfolios and operational plans and work programs. There is a clear alignment from the organisational vision and objectives, AM policy, AM objectives, AM plans, operational plans, work programs through to performance measures as shown in Figure 1.

Figure 1: Asset Management Planning Framework

Source, IIMM Fig 4.2.2, p 4|22.



The SAMP underpins a business process vital to the achievement of the strategic objectives, much in the same way as a financial strategy.

1.1 Scope of Asset Management System

1.1.1 Asset Management System

The AM system is “the set of inter-acting elements of an organisation to establish AM policies and objectives, and processes to achieve those objectives”².

The AM system is applied to the delivery of the AM objectives and services from the following four (4) asset portfolios:

1. Buildings (including Ryde Aquatic Leisure Centre and Libraries);
2. Parks, Sporting and Recreational Facilities;
3. Road Infrastructure;
4. Stormwater.

The AM system scope is determined after consideration of:

- AM objectives;
- External and internal issues relevant to the purpose of the organisation;
- Stakeholder requirements;
- Interaction/linkages with other management systems; and
- Criteria for AM decision making³.

1.2 Purpose and Structure of Asset Management System

The AM system is to assist the organisation achieve its AM objectives. It includes “all the functions, people, processes, information and tools that deliver AM objectives”⁴. The AM objectives are the results to be achieved from the AM system. AM objectives are guided by organisational objectives and the AM policy and drive AM practices undertaken by the organisation⁵.

The AM system structure includes

- AM Policy;
- AM Plans for the asset portfolios detailed in Sec 1.1;
- Integration of AM processes, activities and data with other organisational functions including service delivery, quality, accounting, risk management, safety, and human resources;
- Reporting of AM objectives and resources to achieve the objectives in annual budgets; and
- Reporting of AM objectives achievements in annual reports.

¹ IPWEA, 2015, IIMM, Sec 4.2.3, p 4|28.

² 2IPWEA, 2015, IIMM, Sec 2.1.1, p 2|3.

³ 3IPWEA, 2015, IIMM, Sec 2.1.1, p 2|3.

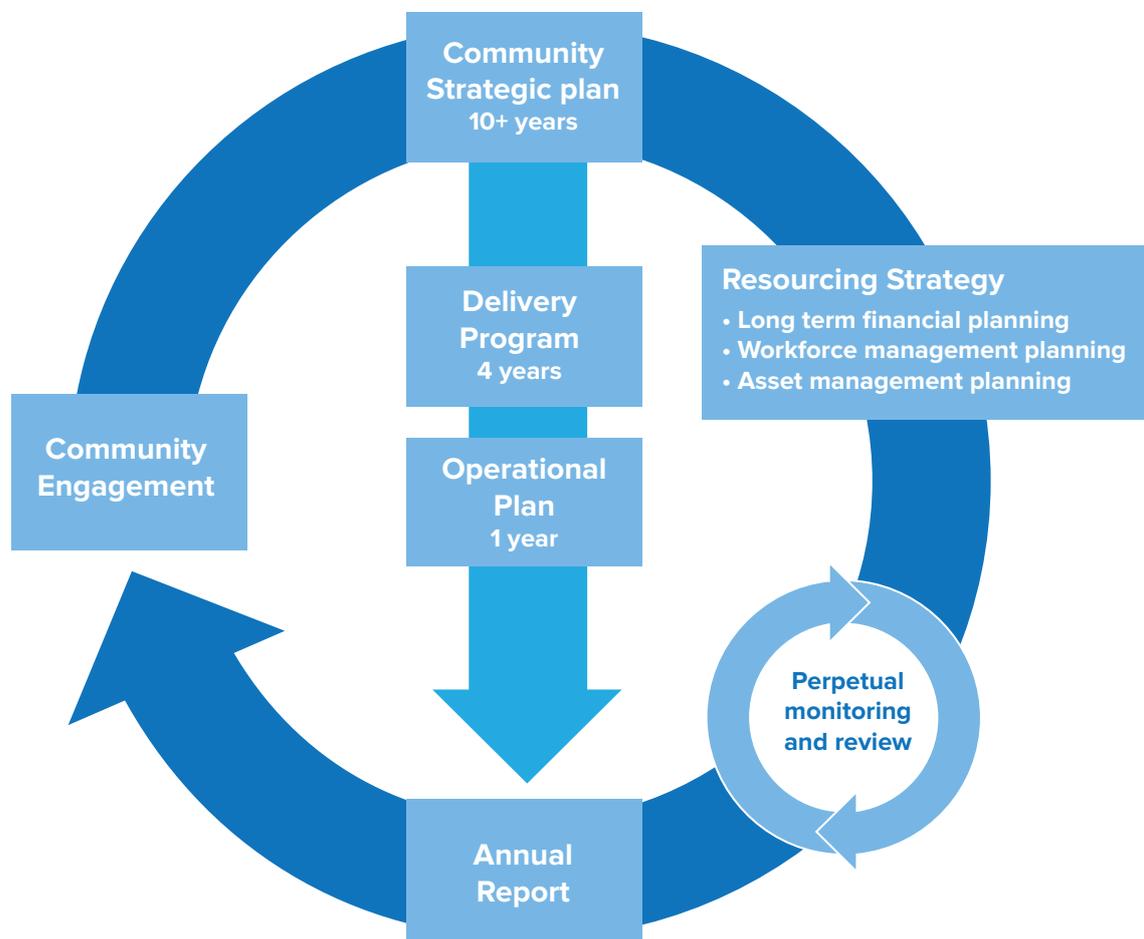
⁴ IPWEA, 2015, IIMM, Sec 2.1.1, p 2|3

⁵ IPWEA, 2015, IIMM, Sec 2.1.3, p 2|13

1.3 The Planning Framework

Local councils in NSW are required to undertake their planning and reporting activities in accordance with the *Local Government Act 1993* and the *Local Government (General) Regulation 2005* and are required to be working within the Integrated Planning and Reporting framework as shown below.

Figure 2: NSW Local Government Integrated Planning and Reporting Framework



An outline of the three key planning elements of the framework is described below:

Community Strategic Plan

The Community Strategic Plan is the highest-level plan that a Council will prepare. The purpose of the plan is to identify the community’s main priorities and aspirations for the future and to plan strategies for achieving these goals.

Resourcing Strategy

The Community Strategic Plan provides a vehicle for expressing long-term community aspirations. However, these will not be achieved without sufficient resources – time, money, assets, and people – to actually carry them out.

The Resourcing Strategy consists of four components:

- Long Term Financial Planning;
- Workforce Management Planning;
- Information and Communications Technology Planning, and
- Asset Management Planning.

This Asset Management Strategy is a requirement of the Asset Management Planning component.

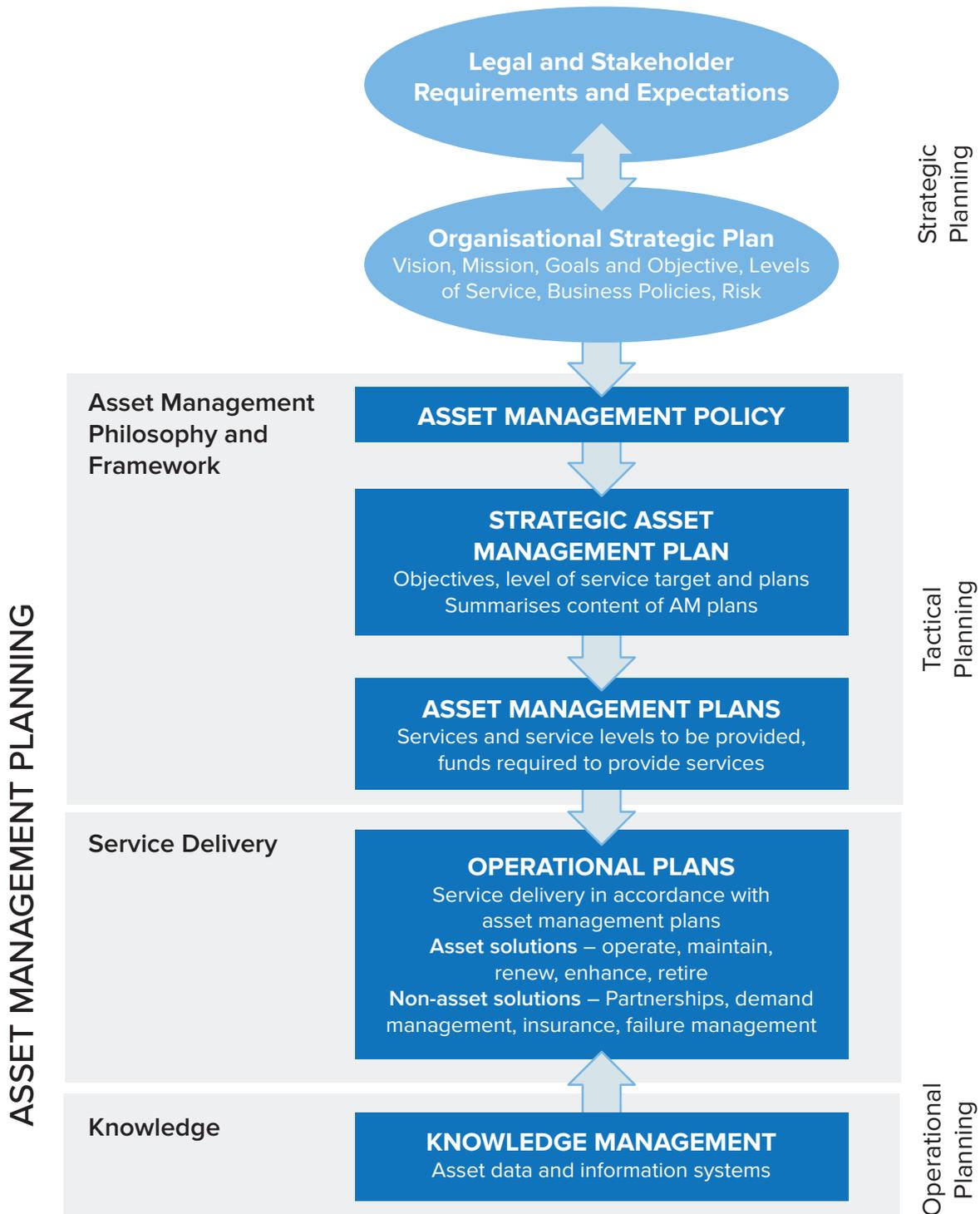
Delivery Program and Operational Plan

This is the point where the community’s strategic goals are systematically translated into actions. These are the principal activities to be undertaken by the council to implement the strategies established by the Community Strategic Plan within the resources available under the Resourcing Strategy.

The SAMP is an integral component of this planning framework. It is derived from our Community Strategic Plan and sets the structure for AM Plans for included asset portfolios. The AM Plans are linked to the long-term financial plan which forms the basis for development of annual budgets to deliver agreed levels of service for available resources. The annual budget sets the framework for annual work plans and division and staff performance targets.

Figure 2 shows how the AM system fits within our planning framework.

Figure 3: Strategic Asset Management fit in Planning Process



1.4 Asset Management Objectives

The AM objectives are developed from our strategic plan and include a:

- Review of risks including the potential impacts from failure of:
 - Assets, or
 - AM activities on achieving AM objectives, individually or in combination
- Review of the importance of assets related to their intended outcomes, objectives and product or service requirements;
- Check on the applicability of AM objectives during the AM planning process⁶.

AM objectives are to be specific, measurable, achievable, relevant and time bound (SMART). AM objectives are developed in Section 4.

AM plans are to be formulated and documented to achieve the AM objectives. This includes documentation of decision making criteria, processes for managing the complete life cycle of assets, addressing risks and opportunities, activities to be undertaken, resources, responsibilities, timelines, performance criteria and financial implications⁷.

1.5 Responsibility for the SAMP

The Manager of Assets and Infrastructure is responsible for development and maintenance of the SAMP. The SAMP will be reviewed at regular intervals by top management as part of the AM System review with review outcomes reported to the Council.

1.6. Planning Timeline

The SAMP has a planning horizon of 10 years. It is based on detail in AM plans developed with a 10 year planning horizon.

The SAMP is reviewed periodically and aligns with the current 4-year Delivery program and Operational Plan. This SAMP will also be updated upon changes to the Asset portfolio or LTFP funding.

⁶ ISO 2014, ISO 55002, Sec 6.2.1, p 9

⁷ IPWEA, 2015, IIMM, Sec 4.2.3, p 4|29

2. | STRATEGIC ORGANISATIONAL CONTEXT

This section details the most significant issues and risks and opportunities facing the organisation over the period of the plan and presents options for addressing those issues including those that cross all parts of the organisation (HR, ICT, finance, etc.) as they are likely to impact on our ability to achieve our AM objectives.

2.1 Services Provided

We manage over 150 services for the residents, visitors and businesses in the City of Ryde community including:

- Roads and Catchment programs maintain infrastructure to the agreed standards;
- Waste and Recycling programs maintain a clean and sustainable City;
- Our Open Space and Sport and Recreation programs include active and healthy living initiatives;
- The Community and Cultural Program which celebrates our rich diversity; and
- Land Use Planning and Economic Development programs that plan for our future and growing employment.

These services are an essential component to the liveability and economic prosperity of the community.

2.2 Our Stakeholder/Customer Expectations and Issues

We provide services to a range of stakeholders, customers and community users. These include:

- Residents;
- Visitors staying in the area;
- Businesses and industry within the area;
- Business and industry users and visitors passing through the area, and
- Governments and regulators.

Customer expectations are challenging the organisation to respond to changing economic conditions and preferences. These can include implementing strategies to improve economic conditions and increase attractiveness in the area while keeping costs down. Customer Experience is gauged formally every 2 years and is monitored in an on-going basis through customer requests and complaints.

When the performance gap between importance and satisfaction of community priorities is analysed, traffic flow and congestion the area of least relative satisfaction and amongst the highest importance. Other service areas ranking highly include long-term planning, community input to decision making and financial management amongst others tabled below.

Table 1: Current customer expectation challenges.

RANKING	SERVICE / FACILITY	IMPORTANCE MEAN	SATISFACTION MEAN	PERFORMANCE GAP
1	Traffic flow / congestion	4.51	2.74	1.77
2	Long-term planning for the area	4.52	2.80	1.72
3	Community input to council decision-making	4.40	2.91	1.49
4	Financial management	4.37	3.05	1.32
5	Road safety	4.74	3.50	1.24
6	Maintaining local roads	4.43	3.23	1.20
7	Development and building applications	3.98	2.78	1.20
8	Illegal dumping	4.43	3.30	1.13
9	Provision of council information to the community	4.35	3.25	1.10
10	Maintaining footpaths	4.38	3.30	1.08

Our challenge is to provide services expected by the community at an appropriate level that is financially sustainable.

2.3 Strategic Challenges

Demographic Challenges

Table 1 shows the demographic change expected over the planning period. This included changes in population and changes in population characteristics such as ageing of the population, migration, or loss of younger residents to other areas.

Table 2: Demographic Change and Demand Impact

ITEM	PRESENT POSITION	EXPECTED POSITION	DEMAND IMPACT
Population	In 2020, the population of Ryde was estimated to be 131,000.	By 2031, the population is forecast to grow by 23% to more than 160,000.	Increasing pressure to maintain existing infrastructure and provide upgrade/new assets.
Population Characteristics	In 2016, approximately 22% of people residing in the City were children (aged under 19 years), 47% were young adults (20 to 49), 31% were older adults (50 years and over).	By 2031, the proportion of people in the 20 to 49 age group are expected to decline 3% to 34% and the proportion of people in the 50 years and over age group are expected to increase 2% to 33%. Additionally By 2036 there is expected to be an increase of approximately 45% of the number of people 0-24 years old and an increase of approximately 85% increase of those aged 65+ ⁸ .	Could reduce demand for certain facilities and increase for others.

A growing and changing population will require new workplaces and investment in transport, services, green spaces and community facilities to maintain the current standard of liveability and lifestyle that is currently offered.

Managing Traffic Flow and Congestion

City of Ryde residents use their own car for approximately 70% of trips that they make. Almost 80% of people coming to the City of Ryde use their car.

Every weekday there are up to 200,000 vehicle movements on the four major state roads that traverse the City of Ryde and more than 110,000 Opal Card taps on more than 1,200 bus, train, and ferry services.

All major roads in the City are at or near capacity during peak times. Limited availability of parking can restrict access to our centres and jobs.

By 2036, the number of journeys across Greater Sydney are projected to increase by 40% (from 2016). This means that by 2031 an additional 76,000 private vehicle trips per day will be made by residents, if people's choices about how they travel do not change.

The economic, social, and environmental impacts of traffic congestion in the City of Ryde can be significant, and the evidence available indicates that they are increasing. If not managed effectively, excessive congestion can ultimately impede mobility and adversely affect the City's attractiveness as a place to live and invest.

⁸ Northern District Plan- March 2018 Planning Priority N3-P27/28

Asset Management Systems and Reporting

Knowledge exists in many corporate locations that are currently managed by business managers in various departments. Each application that has a knowledge management component should have a system owner with an overarching governance structure that enables informed and transparent decisions.

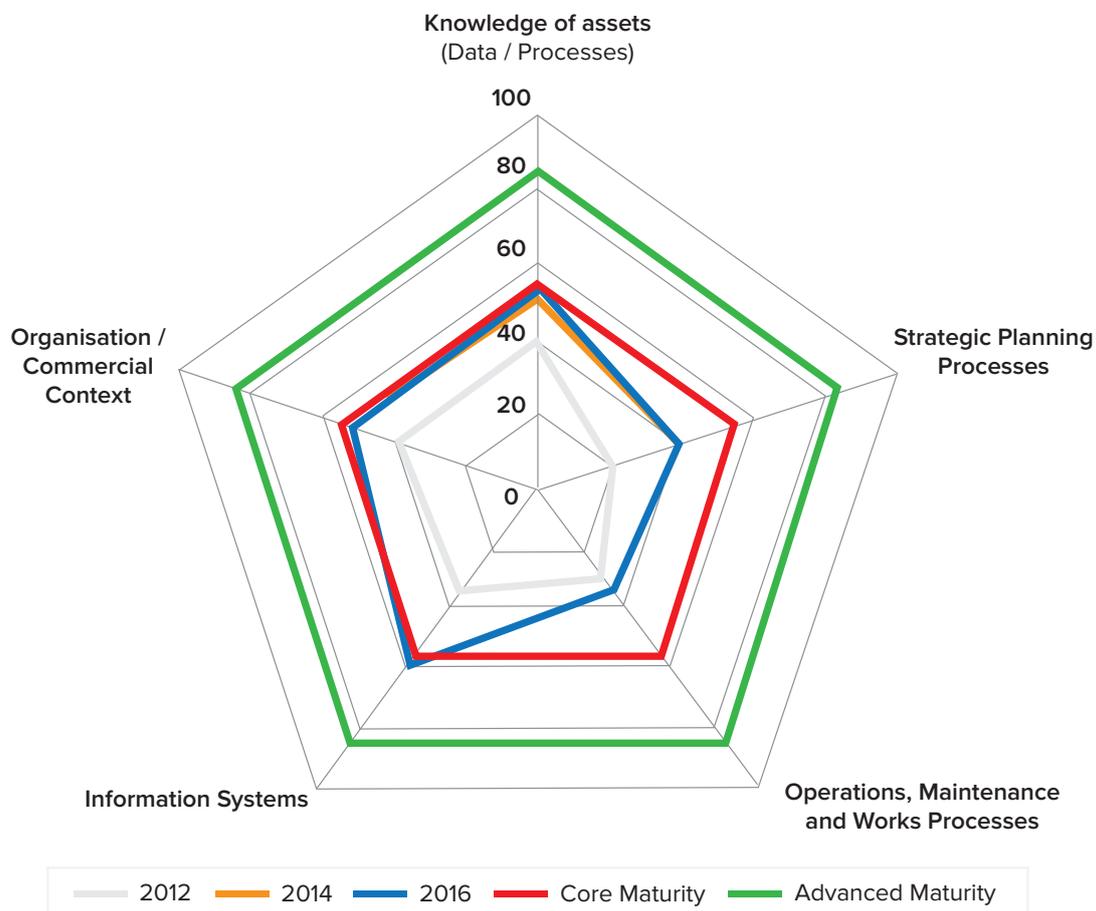
The current system owner concept is a “best of breed” approach to enterprise applications. This has led to a fragmented approach to knowledge management and there is acknowledgement that migrating to a single enterprise software model will improve this situation.

The development of accessible, integrated corporate knowledge across all information topics is essential to efficient evidence based decision making.

Fragmentation of systems, data and business processes remains the main barrier to efficient and effective decision support.

We have taken steps to improve our asset and financial management performance including assessing our asset management maturity using the IIMM Asset Management Gap Analysis Assessment tool. Our target is to achieve and maintain ‘Core’ maturity. Figure 3 shows the current and target assessment for the five elements of the assessment tool.

Figure 3: Maturity Assessment



Improvement in ‘core’ maturity is indicated by movement of the blue ◆ (current maturity) line to the red ■ (‘core’ maturity) and green line ▲ (desired or aspirational target maturity).

As shown in the radar chart, Council has achieved core maturity in some areas and but still requires improvement in Strategic Planning, Operations, Maintenance, and Works Processes. Council has made improvements from the past assessment completed in 2016 across most areas and is continuing to review its practices.

In recent times, the focus has been dealing with the development boom and increase in contributed assets as well as applying appropriate condition audits to works programs.

Review of the Maturity Assessment will be undertaken with the implementation of revised asset data in the 2020/21 financial year in conjunction with the implementation of a new Asset Management System.

Our Strategic Planning, Operations, Maintenance, and Works Processes are below 'core' level maturity and investment is needed to improve this position.

Financial Context

The purpose of this Strategic Asset Management Plan is to develop the strategies to achieve the asset management objectives through balancing of asset service levels, cost and risk. The development of appropriate strategies needs to be undertaken in the context of limited financial resources and competing funding priorities.

An allocation has also been included in Council's LTFP for a potential new Library at Macquarie Park. Ryde's future growth brings with it additional capital, renewal, maintenance and operational costs and places pressure on general revenue to adequately maintain service levels for the community.

Opportunities and Risks

We have identified opportunities relevant to the services included in this strategic asset management plan including:

- Integration of inventory, performance, and service level data

Relevant risks to the strategic asset management plan in the future are:

- Data and system fragmentation;
- Lack of confidence in the recorded quantity and condition of assets within the LGA
- Low confidence decision support; and
- Resourcing of ongoing in-service monitoring and evaluation

Infrastructure risk management plans for these and other relevant risks are summarised with risk management activities and resource requirements incorporated in the relevant asset management plans.

The Ryde Central Project

Council, at its meeting on 24 March 2020, resolved to proceed with the redevelopment of the site owned by Council, referred to as Ryde Central, which previously accommodated Council's administration and civic centre in the Ryde Civic Centre Building and includes the Ryde Civic Hall located at Devlin Street, Ryde (the Project).

The Project's primary objective is to reactivate the Ryde Central site after many years of planning and a number of previous proposals that did not proceed for various reasons. After the Ryde Civic Centre was vacated by Council in 2016, Council offices were relocated to leased premises in North Ryde. The Civic Hall was until recently the only active space remaining on the site but was closed due to the COVID-19 pandemic and is near the end of its lifespan.

The scope of the redevelopment of the Ryde Central site is the creation of a number of major asset components as follows:

- A six-storey administration and commercial building in the south of the site (referred to as the 'civic building'). The civic building is to be used as Ryde Council's main administration building and includes a café on the ground floor, 2 floors of lettable commercial space for external tenants, 3 levels of office space for Council staff and administrative functions, a separate level for the Council chambers and publicly accessible meeting rooms, and a food outlet on the rooftop level;
- A multi-purpose community and cultural building in the north of the site (referred to as the 'community building'). The community building contains a hall with seating for up to 700 persons, activity rooms, meeting rooms, an art exhibition / function space, public amenities and a bar – all designed for community and public access and use;

- Two levels of basement car parking shared between the two buildings. The basement contains 236 car spaces over 2 levels. There is also an additional 78 spaces available in the existing at-grade parking area on Blaxland Road;
- Provision of a public plaza, open space areas and landscaping throughout the site. The public plaza is to be located primarily on the western side of the site and comprises open paved areas, large grassed area, seating, alfresco dining, and landscaping. A community garden is also proposed on the northern end of the site; and
- Realignment of Blaxland Road to form a new T-intersection at Parkes Street.
- The Project provides Council with an opportunity to advance the strategic priorities of Council by:
 - creating and delivering a much needed and enhanced community space which is 4 times larger than that currently provided on the site with flexibility of that space to cater for a diverse range of community needs;
 - re-establishing Council's civic and administrative presence on the site through development of a new administration and civic centre which then negates the need for Council to rent space elsewhere;
 - enabling Council to retain 100% ownership of the site in a manner considered both affordable and feasible;
 - controlling development to ensure a thoughtful, low scale / low impact use of the site with purposefully integrated open space, landscaping and public domain; and
 - providing Council with opportunities for additional income streams from new complimentary uses leased to third parties such as additional commercial space and retail outlets.

Council has undertaken significant work to date and has identified that these objectives can be achieved in a manner that is viable and financially sustainable.

Following the awarding of the Tender, Taylor Construction Group have commenced work on the Project with completion currently expected in early 2023.

3. | ASSET PORTFOLIO

3.1 Financial Status

We manage many assets to provide services to our community. The assets provide the foundation for the community to carry out its everyday activities, while contributing to overall quality of life. The financial status of the Council’s assets is shown in Table 5. At the end of June 2019, the total replacement value of council controlled assets is calculated at almost \$1.08 billion with a Depreciated Replacement Cost of almost \$1.07 billion and an Annual Depreciation expense of \$14.1M

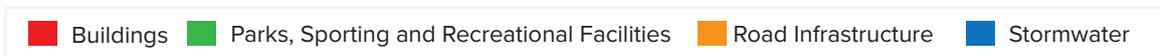
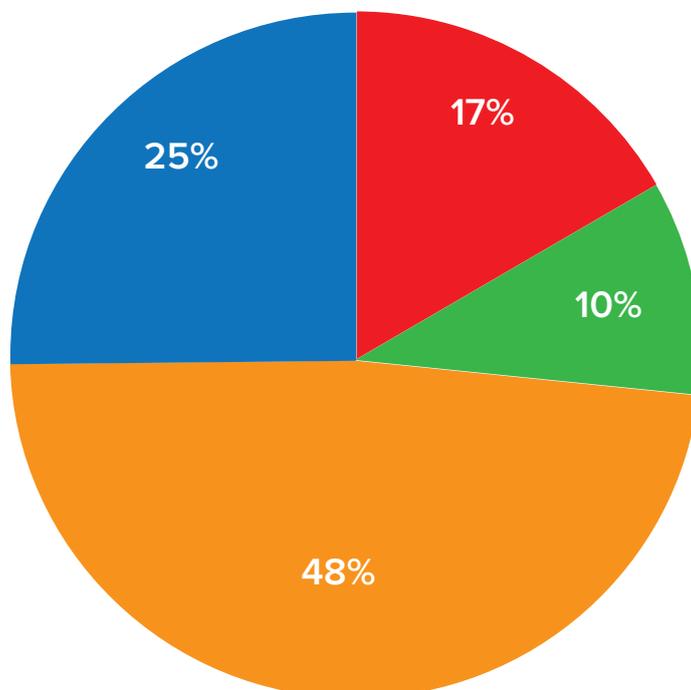
Table 3: Asset Portfolio Financial Status

ASSET CLASS/ CATEGORY	REPLACEMENT VALUE	DEPRECIABLE AMOUNT	DEPRECIATED VALUE	ANNUAL DEPRECIATION
Buildings	\$180,743,000	\$180,743,000	\$90,569,000	\$2,592,000
Parks, Sporting and Recreational Facilities	\$107,823,000	\$97,558,000	\$81,832,000	\$1,753,000
Road Infrastructure	\$517,259,000	\$516,104,000	\$402,717,000	\$7,940,000
Stormwater	\$271,512,000	\$271,512,000	\$204,166,000	\$1,823,000
Total	\$1,077,377,000	\$1,065,917,000	\$779,284,000	\$14,108,000

*Note: Does not include values for Operational, Community or Crown Lands.

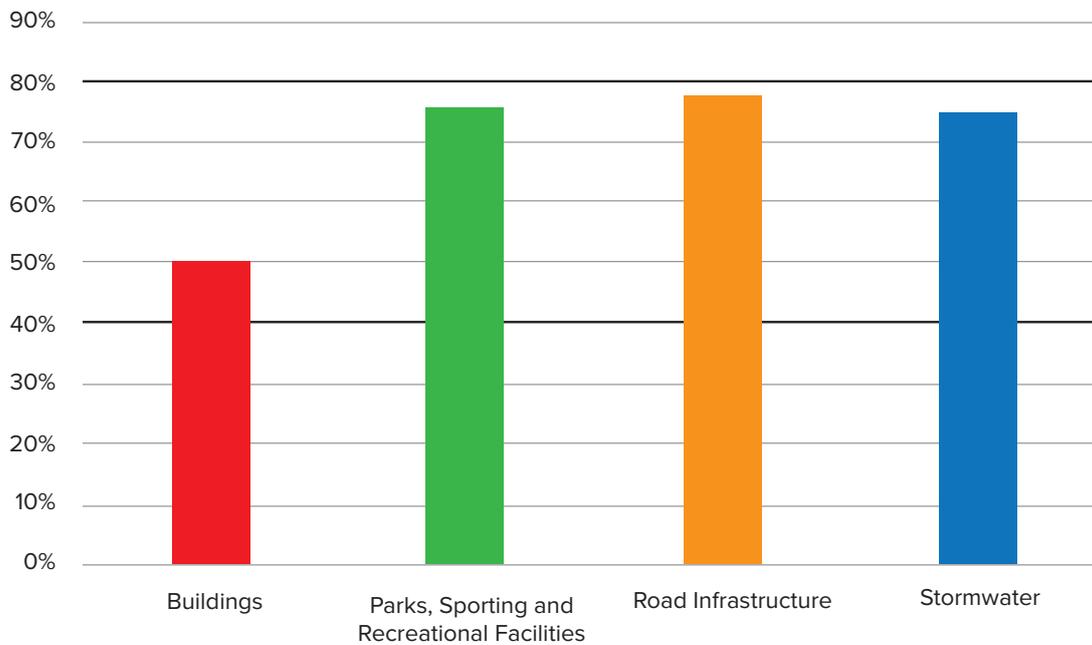
Figure 5 shows the replacement value of our infrastructure assets (i.e. non-current fixed assets).

Figure 5: Asset Replacement Values by percentage



The asset consumption ratio of each asset category (average proportion of ‘as new’ condition left in assets) is shown in Figure 5A. The chart shows the depreciated replacement cost less residual value of the organisation’s depreciable assets relative to their depreciable amount.

Figure 5A: Asset Consumption Ratio



The Asset Consumption Ratio seeks to highlight the aged condition of Council’s physical assets with the target ranging between 40% and 80%. The chart shows most assets have more than 70% of life remaining with Buildings which accounts for less than 10% of total asset value is on 50%.

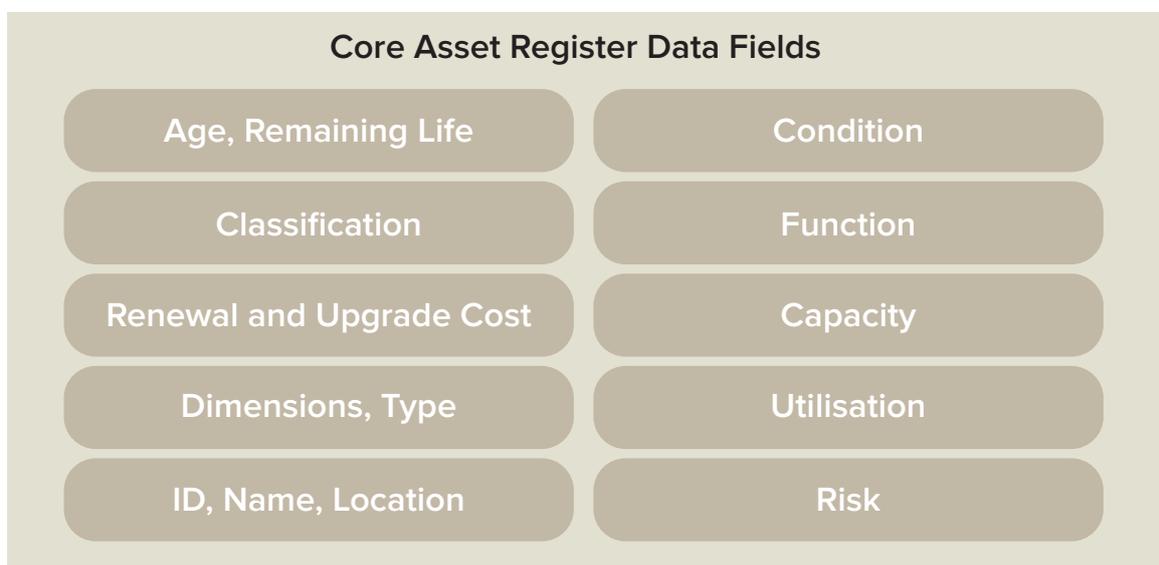
The Australian Infrastructure Financial Management Guidelines inform us if a local government is responsibly maintaining and renewing / replacing its assets in accordance with a well-prepared asset management plan, then the fact that an Asset Consumption Ratio may be relatively low and/or declining should not be cause for concern – providing it is operating sustainably.

3.2 Asset register

This SAMP is based on the best available information from our infrastructure asset registers and corporate systems. Access to reliable asset information is critical to the success of good asset management in the organisation.

The International Infrastructure Management Manual promotes the use of a minimum group of data fields in a single source point for decision support as shown below.

Figure 6A: Core Asset Register Attributes



Council has undertaken a comprehensive asset data collection exercise in the 2019/20 financial year. This data has not yet been finalised, but will be used to update the 2020/21 financial year figures.

4. | ASSET MANAGEMENT OBJECTIVES

The AM objectives developed in this SAMP plan provide the essential link between the organisational objectives and the AM plans that describe how those objectives are going to be achieved. The AM objectives are developed from our strategic plan and a range of requirements including corporate goals and stakeholder, regulatory and legislative requirements.

The AM objectives are aligned to the organisational objectives in the strategic plan, with the objective of establishing alignment from the organisational objectives through the AM objectives to AM initiatives, projects, and performance measures.

The AM objectives incorporate our desire to ensure that infrastructure assets are managed in an efficient and sustainable manner and asset cost is optimised over the asset's lifecycle. AM objectives transform the required outcomes (product or service) to be provided by the assets, into activities typically described in the asset management plans.

4.1 Where do we want to be?

Organisational Objectives

This SAMP is prepared under the objectives set out in Council's Community Strategic Plan; its vision, mission, outcomes and priorities.

Our vision of Ryde in 2028 is:

The place to be for lifestyle and opportunity @ your doorstep

Our mission is:

Working with our community and partners to provide strategic leadership, effective projects and quality customer service.

Asset Management Vision

To ensure the long-term financial sustainability of the organisation, it is essential to balance expectations for services with the ability to fund infrastructure assets used to provide the services. Maintenance of service levels for infrastructure services requires appropriate investment over the whole of the asset life cycle. To assist in achieving this balance, we aspire to develop and maintain asset management governance, skills, process, systems, and data in order to provide the level of service needed at present and in the future.

In line with the vision, the objectives of the strategic asset management plan are to:

- Ensure that our infrastructure services are provided in an economically optimal way, with the appropriate level of service to residents, visitors and the environment determined by reference to our financial sustainability;
- Safeguard our physical assets and employees by implementing appropriate asset management strategies and appropriate financial resources for those assets;
- Adopt the long term financial plan as the basis for all service and budget funding decisions
- Meet legislative requirements for all our operations;
- Ensure resources and operational capabilities are identified and responsibility for asset management is allocated;
- Ensure operational and service delivery risks are adequately managed;
- Continually improve our asset, risk and financial management and service delivery performance; and
- Provide high level oversight of financial and asset management responsibilities through regular reporting to the Council on development and implementation of the Strategic Asset Management Plan, the Long Term Financial Plan and Council's Annual Financial Statements.

Strategies to achieve this position are outlined below.

How will we get there?

This Strategic Asset Management Plan proposes strategies to enable the organisational objectives and asset management policies to be achieved.

Table 4: Asset Management Strategies

No.	STRATEGY	DESIRED OUTCOME
1	Reduce life cycle costs while managing risk by the alignment of a 4-year rolling program for capital and operating expenditure with long term financial plan revenue and expenditure projections into annual budgets.	Long term financial planning drives budget deliberations and the long-term implications of all services are considered in annual budget deliberations.
2	Report our service level, financial and risk performance against organisational objectives in the Annual Report.	Performance information is available for the Council and Community.
3	Develop and maintain a long term financial plan covering 10 years incorporating asset management plan expenditure projections with a sustainable funding position outcome.	Sustainable funding model to provide our services.
4	Develop and periodically review the strategic asset management plan covering at least 10 years for all major asset classes (80% of asset value).	Identification of services needed by our customers and the required funding to optimise 'whole of life' costs.
5	Review and update the Strategic Asset Management Plan and Long Term Financial Plans when adoption Council's Operational Plan. Communicate any consequence of funding decisions on service levels and service risks.	We are aware of changes to service levels and costs arising from budget decisions.
6	Develop and maintain a risk register of operational and service delivery risks showing current risk levels, risk management treatments and report regularly to the Council on current high-level risks.	Risk management of operational and service delivery risks is an integral part of governance.
7	Ensure Council decisions are made from accurate and current information in the asset register, on service level performance and costs and 'whole of life' costs.	Improved decision making and greater value for money.
8	Report on our resources and operational capability to deliver the services needed by our customers in the annual report.	Services delivery is matched to available resources and operational capabilities.
9	Ensure responsibilities for asset management are identified and incorporated into staff position descriptions.	Responsibility for asset management is defined.
10	Implement an improvement plan to realise 'core' maturity for the financial and asset management competencies within two years.	Improved financial and asset management capacity within the organisation.

Taking the Continual Improvement Approach

Continuous improvement should be driven through monitoring and review processes. Continuous improvement of the AM System can occur in a variety of different ways:

- At the whole 'system' level;
- At the network performance level; and
- At the business process level.

ISO 55001 also requires evaluation of performance at different levels with Cl. 9.1 referencing the need to evaluate asset performance, AM performance and the effectiveness of the AM System.

Risks if actions are not completed

There are risks for the Council if the improvement actions are not completed. These include:

- Inability to achieve strategic and organisational objectives;
- Inability to achieve financial sustainability for the organisation's operations;
- Current risks to infrastructure service delivery are likely to eventuate and response actions may not be appropriately managed; and
- We may not be able to accommodate and/or manage changes in demand for infrastructure services.

4.2 What does it cost?

The required outlays (operations, maintenance, renewal and upgrade/new expenditure) necessary to sustain services per asset category over the next 10 years is estimated to cost in the order of \$972.6M or \$97.3M on average per year⁹.

The estimated available funding for this period is \$952.4M or \$95.2M on average per year as per the long term financial plan.

This is a shortfall of approximately \$20.1M over the life of the plan, primarily associated with the commissioning of a potential new library in the outer years of the Long Term Financial Plan. These projections will be reviewed and refined progressively every year. The 10 year expenditure forecast for each asset category is shown in Table 5 below.

Table 5: 10-Year Required Outlays to sustain services by Asset Category

Service	OPERATIONS AND MAINTENANCE (\$'000)	CAPITAL RENEWAL EXPENDITURE (\$'000)	EXPANSION / NEW EXPENDITURE (\$'000)	TOTAL (\$'000)
Buildings	146,475	69,969	214,640	431,085
Parks, Sporting and Recreational Facilities	103,783	30,761	130,031	264,574
Road Infrastructure	60,311	113,791	88,133	262,235
Stormwater	1,784	2,293	10,582	14,659
Total	312,353	216,814	443,386	972,552
LTFP	261,546	247,481	443,386	952,412
Difference	50,807	(30,667)	-	20,140
	84%	114%	100%	98%

Knowing the extent and timing of any required increase in outlays and the service consequences of funding shortfalls will assist us in providing adequate services to our communities in a financially sustainable manner. This is the purpose of the AM Plans and Long Term Financial Plan.

⁹ In real terms net of inflation.

5. | ASSET MANAGEMENT PLANNING APPROACH (ACTION PLAN)

The AM planning approach provides direction for AM Plans to achieve the organisational objectives. This includes documentation of decision making criteria, processes for managing the complete life cycle of assets, addressing risks and opportunities, activities to be undertaken, resources, responsibilities, timelines, performance criteria and financial implications.

5.1 Levels of Service

We have defined service levels in two terms.

Community Levels of Service measure how the community receives the service and whether the organisation is providing community value.

Community levels of service measures used in the asset management plan are:

1. Condition *...How good and/or safe is the service?*

Our current and projected community levels of service for the services covered by this strategic asset management plan are shown in the AM Plans summarised in this strategic asset management plan.

Technical Levels of Service - Supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the organisation undertakes to best achieve the desired community outcomes and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as availability, cleansing, mowing, etc.;
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (e.g. road patching, building and structure repairs);
- Renewal – the activities that return the service capability of an asset like that which it had originally (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement); and
- Upgrade/New – the activities to provide a higher level of service (e.g. widening a road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).

The role of the Business Manager is to plan, implement and control technical service levels to influence the customer service levels. Feedback from the community along with the technical assessment of assets allows the Business Manager to determine if levels of service establish the level of performance and costs are performing as expected or require further analysis.

Our current and projected technical levels of service for the services covered by this Strategic Asset Management Plan are shown in the AM Plans summarised in this strategic asset management plan.

5.2 Demand Management

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures. Examples of non-asset solutions include providing joint services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

Opportunities identified for demand management are shown in Table 6.

Table 6: Demand Management Opportunities

Service Impact	DEMAND MANAGEMENT PLAN
Limited availability of parking can restrict access to our centres and jobs.	Raise awareness of sustainable transport options, such as walking, cycling and car-pooling amongst both staff and the community.
Increasing traffic and congestion.	Raise awareness of sustainable transport options, such as walking, cycling and car-pooling amongst both staff and the community.
Changing demographics could reduce demand for certain facilities and increase for others.	Monitor community expectations and communicate service levels and financial capacity with the community to balance priorities for infrastructure with what the community is prepared to pay for.

5.3 Infrastructure Risk Management

An assessment of risks associated with service delivery from infrastructure assets conducted for each relevant asset management plan identified 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.

Critical risks, being those assessed as ‘Very High’ - requiring immediate corrective action and ‘High’ – requiring prioritised corrective action identified accordingly. These risks are regularly reported to management and Council.

5.4 Operations and Maintenance Strategies

Operations activities affect service levels including quality and function, such as cleanliness and appearance through street sweeping and grass mowing frequency, intensity and spacing of street lights and cleaning frequency and opening hours of building and other facilities.

Maintenance includes 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 such as road patching and excludes rehabilitation or renewal.

Where maintenance expenditure levels are such that will result in a lesser level of service, the service consequences and service risks have been identified and service consequences highlighted in the respective AM Plan and service risks considered in the Infrastructure Risk Management Plan.

We will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. Proposed operations and maintenance strategies in this SAMP are:

- Scheduling operations activities to deliver the defined level of service in the most efficient manner;
- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes.
- Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost);
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting high risks and their residual risks after treatment are applied to management;
- Review current and required skills base and implement workforce acquisition, training and development to meet required operations and maintenance needs;
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options;

- Maintain a current hierarchy of critical assets and required operations and maintenance activities;
- Develop and regularly review appropriate emergency response capability; and
- Review management of operations and maintenance activities to ensure we are obtaining best value for resources used.

5.5 Renewal/Replacement Strategies

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 or lesser required service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new works expenditure.

Renewal and replacement strategies proposed under this SAMP are:

- Planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner
- Undertaking project scoping for all capital renewal and replacement projects to identify:
 - The service delivery 'deficiency', present risk and optimum time for renewal/replacement
 - The project objectives to rectify the deficiency;
 - The range of options, estimated capital and life cycle costs for each option that could address the service deficiency;
 - And evaluate the options against evaluation criteria adopted by Council ; and
 - Select the best option to be included in capital renewal programs.
- Maintain a current infrastructure risk register for assets and service risks associated (by infrastructure class) and reporting high risks and their residual risks after treatment plan is applied;
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs;
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required; and
- Review management of capital renewal and replacement activities to ensure we are obtaining best value for resources used.

Renewal ranking criteria was developed from consideration of renewal/replacement need for assets that:

- Have a high consequence of failure;
- Have a high utilisation and subsequent impact on users would be greatest;
- The total value represents the greatest net value to the organisation;
- Have the highest average age relative to their expected lives;
- Have high operational or maintenance costs; and
- Where replacement with modern equivalent assets would yield material savings.

Criteria used for ranking renewal and replacement proposals are documented in the applicable AM Plans and will be prioritised based on funding.

5.6 New and Upgrade Assets Strategies

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets (donated or gifted assets) may also be acquired at no cost to the organisation from land development or arising from government grants.

Strategies for creation, acquisition of new assets and upgrade of existing assets proposed in this SAMP are:

- Planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner;
- Undertake project scoping for all capital upgrade/new projects to identify;
 - The service delivery 'deficiency', present risk and required timeline for delivery of the upgrade / new asset;
 - The project objectives to rectify the deficiency including value management for major projects
 - The range of options, estimated capital and life cycle costs for each option that could address the service deficiency;
 - Management of risks associated with alternative options;
 - And evaluate the options against evaluation criteria adopted by Council; and
 - Select the best option to be included in capital upgrade/new programs.
- Review current and required skills base and implement staff acquisition, training and development to meet required construction and project management needs; and
- Review management of capital project management activities to ensure we are obtaining best value for resources used.

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or customer/community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop preliminary Capital expenditure and Operational expenditure estimates. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in the respective asset management plans.

5.7 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation.

Assets identified for possible decommissioning and disposal are shown in the respective asset management plans summarised in this strategic asset management plan. Presently, there are no assets earmarked for disposal.

5.8 Service Consequences and Risk

The organisation has prioritised decisions made in adopting the asset management plans summarised in this Strategic Asset Management Plan to obtain the optimum benefits from its available resources.

The AM plans are based on balancing service performance, cost and risk to provide an agreed level of service from available resources in our long-term financial plan.

Deferred initiatives and projects, their service and risk consequences are yet to be determined and will be provided in future revisions of this Plan.

5.9 Assumptions and Confidence Levels

This section details the key assumptions made in presenting the information contained in this strategic asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan and risks that these may change are shown in Table 7.

Table 7: Key Assumptions made in Strategic Asset Management Plan and Risks of Change

KEY ASSUMPTIONS	RISKS OF CHANGE TO ASSUMPTIONS
The assets will remain in the organisations ownership and control throughout the planning period.	Low
Planned and reactive maintenance is to take place in accordance with relevant guidelines/standards.	Low
Financial projections are based on historical expenditure and revenue trends and assume there will no significant change.	Medium
Regulations/standards relating to operations will remain the same over the planning period.	Medium

The expenditure and valuations projections in this strategic asset management plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management.

The estimated confidence level for and reliability of data used in this strategic asset management plan is shown in Table 8.

Table 8: Data Confidence Assessment for AM Plans summarised in Strategic AM Plan

AM PLAN	CONFIDENCE ASSESSMENT	COMMENT
Buildings Parks, Sporting and Recreational Facilities Road Infrastructure Stormwater	Uncertain to Reliable.	Data based on sound records, procedures, investigations, and analysis which is incomplete or unsupported, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is substantially complete but up to 25% is extrapolated data and accuracy estimated $\pm 20\%$.

Over all data sources, the data confidence is assessed as low to medium confidence level for data used in the preparation of this Strategic Asset Management Plan.

Actions to mitigate the adverse effects of data quality are included within Table 9 Improvement Plan.

5.10 Improvement Plan

The asset management improvement tasks identified from an asset management maturity assessment and preparation of this strategic asset management plan are shown in Table 9.

Table 9: Improvement Plan

TASK No.	TASK	RESPONSIBILITY	RESOURCES REQUIRED	TIMELINE
1	Asset Register Assess the Remaining Life of all assets on a priority basis and align with up to date performance data and knowledge.	Assets and Infrastructure	Existing budget Staff time	Ongoing
2	Review and update the year of acquisition or date of last renewal and replacement cost data in the asset register on a priority (value) basis.	Assets and Infrastructure	Existing budget Staff time	December 2021
3	Adopt and implement an Infrastructure Asset Hierarchy as a basis for consistent reporting across the organisation.	Assets and Infrastructure	Existing budget Staff time	June 2021
4	Review the accuracy and currency of location and inventory related data.	Assets and Infrastructure	External Contractors	December 2020
5	Develop and maintain a unit rates table on annual basis to ensure valuations are up to date.	Assets and Infrastructure	Existing budget Staff time / External Consultants	December 2020
6	Review and implement Function, Capacity and Use across all assets.	Assets and Infrastructure	Existing budget Staff time	December 2021
7	Forward Projections Ensure funding models reflect the resources required meeting the timely renewal of existing assets and those identified and implemented under the Strategic Plan.	Finance	Existing budget Staff time / External Consultants	June 2021
8	Develop and adopt a prioritisation framework for renewal and upgrade/new projects.	Assets and Infrastructure	Existing budget Staff time/ External Consultants	March 2021
9	Increase confidence and prioritise renewal and upgrade/new estimates based on risk.	Assets and Infrastructure	Existing budget Staff time	December 2020

TASK No.	TASK	RESPONSIBILITY	RESOURCES REQUIRED	TIMELINE
10	<p>Levels of Service</p> <p>Develop and confirm current and desired customer/community and technical levels of service to understand and report on a sustainable service delivery model.</p>	Assets and Infrastructure / Customer Service	Existing budget Staff time	December 2020
11	<p>State of the assets reporting to show current and 10-year target and affordable service levels for condition, function and capacity indicators.</p>	Assets and Infrastructure	Existing budget Staff time	June 2021
12	<p>AM Plan</p> <p>Maintain an annual review of the plan incorporating an update of service level performance, financial and expenditure projections and risk.</p>	Assets and Infrastructure	Existing budget Staff time	December 2021
13	<p>Implement a continuous improvement strategy to assess and report on the performance of controlled assets.</p>	Assets and Infrastructure	Existing budget Staff time	March 2021

6. | FINANCIAL SUMMARY

This section contains the collective financial requirements resulting from all the information presented in the previous sections of this SAMP and subordinate AM Plans and is designed to provide a whole of organisation perspective. The funding allocation will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

6.1 Financial Indicators and Projections

The Asset Renewal Funding Ratio indicates whether projected capital renewal and replacement expenditure are able to be financed in the long-term financial plan. It is calculated by dividing the projected capital renewal expenditure shown in the AM Plans by the estimated capital renewal budget provided in the long-term financial plan. Over the next 10 years, we are forecasting that we will have 177% of the funds required for the optimal renewal and replacement of assets.

6.2 Funding Strategy

The funding strategy to provide the services covered by this strategic asset management plan and supporting asset management plans is contained within the organisation’s financial strategy incorporated into Council’s Long Term Financial Plan.

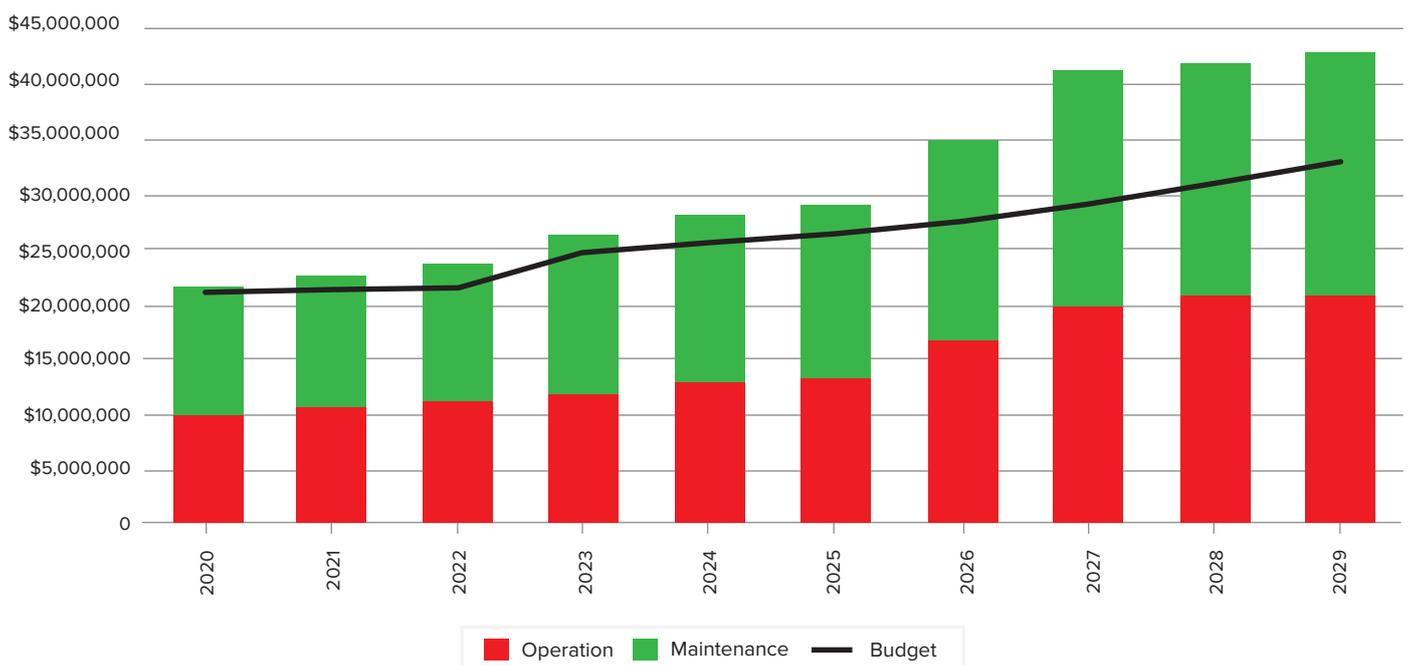
6.3 Expenditure Forecasts

Operations and Maintenance Expenditure Projections

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 7. The projected operations and maintenance of existing and new assets over the 10 year planning period is estimated at \$312.3M or \$31.2M on average per year. The estimated available operating funds for this period is \$261.6M or \$26.2M on average per year as per the long term financial plan.

This translates to an average Asset Maintenance Ratio of 86% (target is 100%). The \$50.7M (\$5 M per year) represents a funding shortfall primarily driven in the outer years of Council’s Long Term Financial Plan. This is due to the potential commissioning of a new Library based in Macquarie Park (forecast to be commissioned in the 2026 financial year). However, as previously noted, Council’s 10 year long term financial plan projects operating surpluses that have not yet been allocated to asset related projects or operations between year’s 5 and 10.

Figure 7: Operations and Maintenance Expenditure Projections

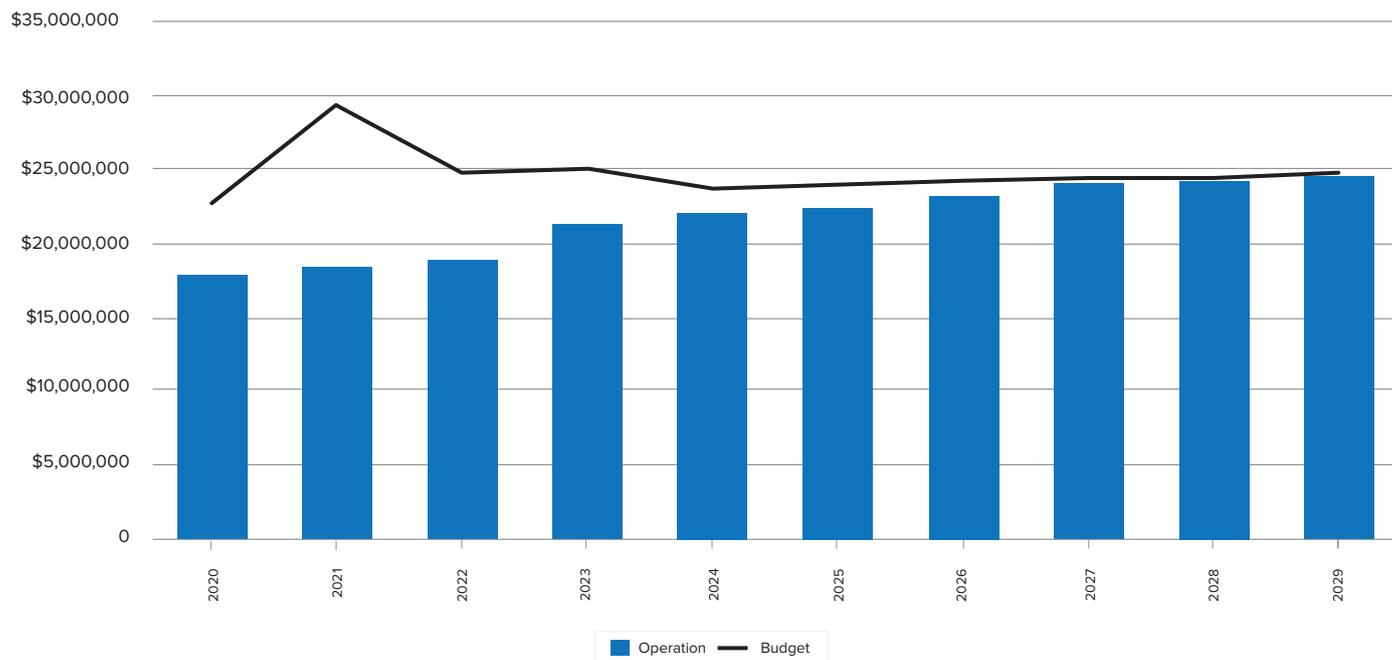


Capital Renewal Expenditure Projections

Figure 8 shows the projected future renewal and replacement expenditures are forecast to increase over time as the asset stock ages. The projected capital renewal of existing assets over the 10-year planning period is estimated at \$216.8 or \$21.7M on average per year. The estimated available renewal funding for this period is \$247.4M or \$24.7M on average per year as per the long term financial plan.

Based on the current projections, there are surplus funds equating to \$30.7M over the period the Long Term Financial Plan or \$3.1M per year allocated towards the cost of asset renewal over the planning period. This surplus could be used to offset some of the funding shortfall relating to asset maintenance expenses.

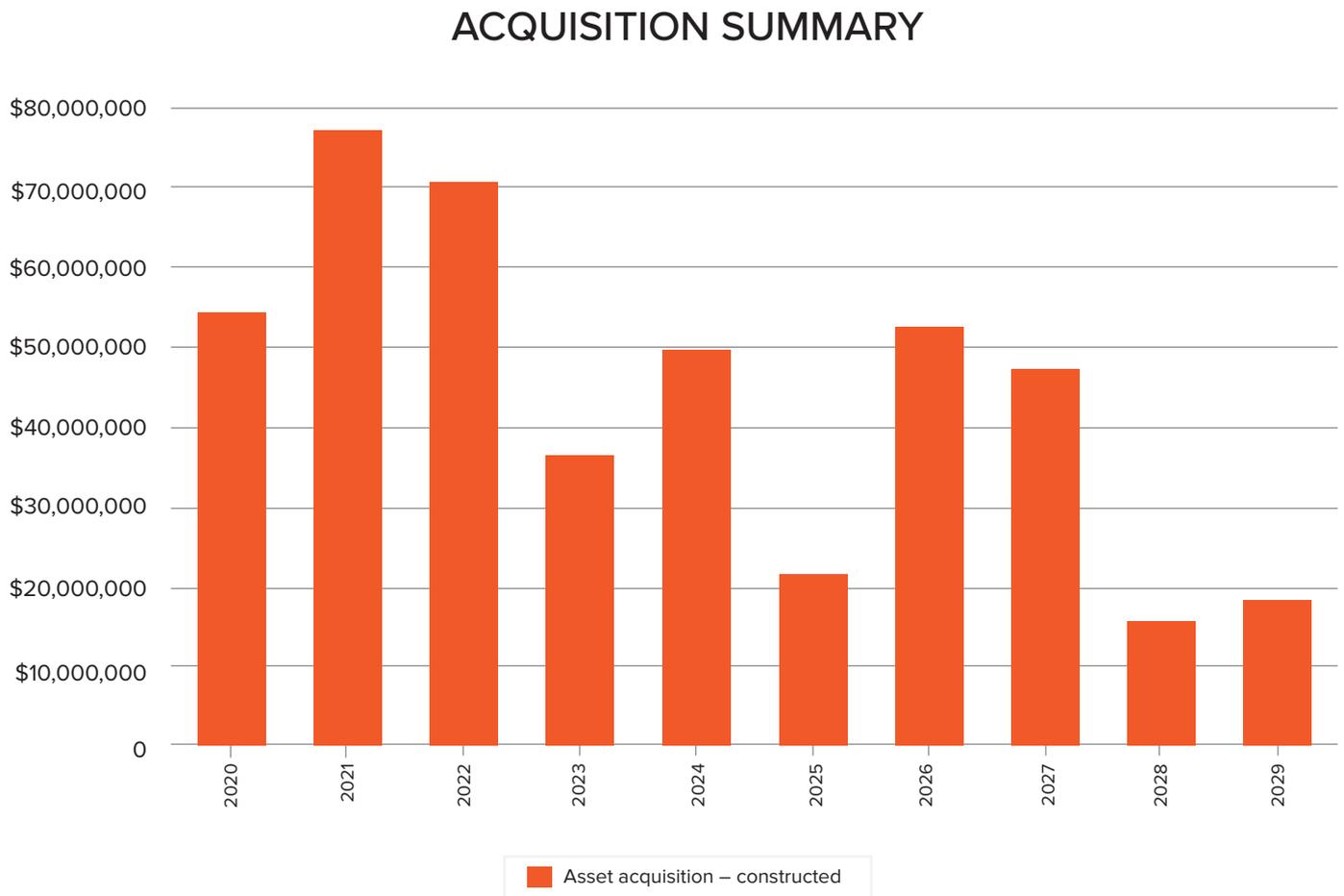
Figure 8: Capital Renewal Projected Expenditure



Capital New / Upgrade Projections

The Long Term Financial Plan includes \$443.4M worth of new capital assets being commissioned over the next 10 years, primarily funded by Section 7.11 contributions or Voluntary Planning Agreements. Projected upgrade/new asset expenditures and estimated long-term financial plan outlays are summarised in Figure 9. The provision of upgrade/new assets over the 10 year planning period to meet growth and demand and has been fully accommodated in the organisation's Long Term Financial Plan through those nominated funding sources.

Figure 9: Capital New/Upgrade Projected Expenditure



7. | CONCLUSION

The Strategic Asset Management Plan is reviewed and updated in line with the adoption of Council's Delivery Program and Operational Plan. The Manager Assets and Infrastructure is responsible for ongoing maintenance and review of the SAMP.

The effectiveness of this Strategic Asset Management Plan can be measured in the following ways:

- The degree to which the required projected expenditures identified in this strategic asset management plan are incorporated into the organisation's long term financial plan;
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures consider the 'global' works program trends provided by the summarised asset management plans;
- The degree to which the existing and projected service levels and service consequences (for what we cannot do), risks and residual risks are incorporated into the organisation's Strategic Plan and associated plans; and
- The Asset Maintenance Ratio and the Asset Renewal Ratio achieving a target of 100%, whilst maintaining the Asset Backlog Ratio below a target of 2%.

8. | REFERENCES

- City of Ryde, Long-term Financial Plan
- City of Ryde, Delivery Plan
- City of Ryde, Operational Plan and Budget
- City of Ryde Communications and Engagement Strategy, 2014
- ISO, 2014, ISO 55000, Asset management – Overview, principles and terminology, International Organization for Standardization, Geneva.
- ISO, 2014, ISO 55001, Asset management – Management systems - Requirements, International Organization for Standardization, Geneva.
- ISO, 2014, ISO 55002, Asset management – Management systems – Guidelines for the application of ISO 55001, International Organization for Standardization, Geneva.
- IPWEA, 2015, International Infrastructure Management Manual, Institute of Public Works Engineering Australia, Sydney www.ipwea.org/iimm
- IPWEA, 2014, 'NAMS.PLUS3 Asset Management', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 'Australian Infrastructure Financial Management Manual, Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/aifmm.
- Ryde 2028 Community Strategic Plan



Customer Service Centre,
1 Pope Street, Ryde NSW 2112
Locked Bag 2069, North Ryde NSW 1670
Customer Service 9952 8222
Email: cityofryde@ryde.nsw.gov.au
www.ryde.nsw.gov.au

 City of Ryde

Lifestyle and opportunity
@ your doorstep