Liverpool city council
creating our future together

Infrastructure Assets
Asset Management Plan
June 2015

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1 EXECUTIVE SUMMARY

Introduction - what is asset management?

Asset management is a comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of community benefits[1]. The emphasis is on the assets being a means to an end, not an end in themselves. Accordingly, this asset management plan for Council's infrastructure assets has been prepared to guide Council's ongoing investment in capital and maintenance works in a way that supports service delivery in the most effective manner.

This Plan provides long term asset requirements and corresponding financial forecasts through a ten year rolling priority program of works. These programs aim to maintain and renew Council's infrastructure assets so that it continues to provide acceptable levels of service to our community over the long term and in a cost effective manner.

Background - why asset management?

Council provides many services that aim to deliver social, environmental and economic outcomes for the community of Liverpool. For majority of these services Council relies on its large portfolio of infrastructure assets, which are currently valued in excess of $1.96 billion. These include public roads and other transport related facilities; floodplain and drainage networks; parks, reserves and recreational facilities; property and buildings.

Council aims to manage all its assets at a level that ensures necessary standards of service are achieved and maintained over time in an efficient and cost effective manner and asset management plans are the vehicle by which Council can provide an acceptable long-term infrastructure management framework.

Catalysts for improved asset management

Infrastructure represents a major investment by Council and its importance to the delivery of service is a sufficient driver for more formalised asset management practices. However, various state and national public inquiries including the 2006 independent inquiry into the financial sustainability of Local Governments and the report cards show a concerning picture of infrastructure standards and Councils ongoing ability to fund the required renewals. In response to these concerns, the Department of Local Government introduced amendments to the Local Government Act 1993 for a new planning and reporting framework for NSW local government requiring:

- preparation of a long-term Community Strategic Plan; and
- preparation of a resourcing strategy to achieve the objectives established by the community strategic plan including a long-term financial plan, workforce management plan and asset management plans for all assets under the control of Council.

[1] AUSTROADS 1997 - *Strategy for Improving Asset Management Practice*

The new legislation also requires Councils to prepare an Asset Management Strategy and an overarching council endorsed Asset Management Policy. This asset management plan has been guided by the principles and outcomes identified in Council's Asset Management Policy and Strategy.

Objectives of this asset management plan

This Infrastructure Asset Management Plan aims to demonstrate responsive management of Council's assets (and services provided from these assets), compliance with regulatory requirements, and to communicate funding required to provide the required levels of service. This Plan is expected to facilitate prudent and responsible management of Council's infrastructure assets.

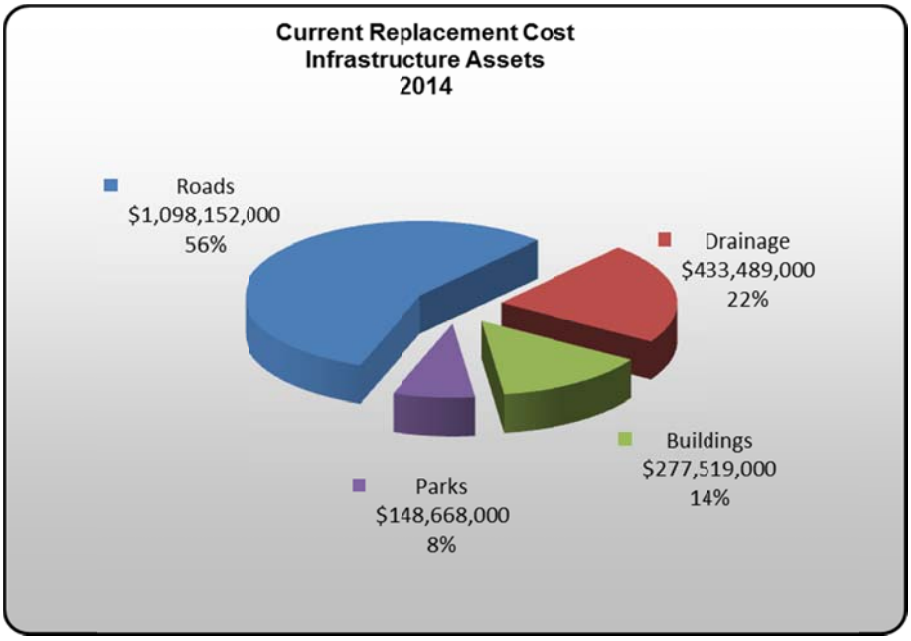
Benefits of improved asset management

The benefits of formalised asset management practices include:

- better allocation of limited council resources
- improved alignment of assets with services and community expectations
- improved understanding of service level options, costs and risks resulting in improved risk management and more sustainable decisions
- reduced demand for new council assets through better integration of service planning and asset planning
- more effective use and maintenance of council assets
- improved processes and accountability for capital and recurrent works
- use of non-asset solutions to meet service demand
- improved governance and accountability through improved decision making based on better understanding of the benefits and costs of alternatives therefore actions and decisions are optimal and focused on real needs

Council's asset portfolio

Council is responsible for the control and care of a vast portfolio of infrastructure assets and the scope and value of assets covered by this Asset Management Plan is shown below.



Over the last few years, Council has built up a comprehensive data base of all its assets, which has enabled Council to undertake necessary planning and valuation of its assets most efficiently and to a high level of accuracy.

Council's ongoing asset surveys have provided valuable data to objectively determine its current condition and performance. This has enabled Council to proactively develop maintenance and renewal strategies and programmes that are responsive and cost effective. The following provides a summary of condition and performance information for some of Council's key assets.

Detailed information on each of the above asset categories including asset condition, current and target performance, required maintenance and renewal activities, and corresponding funding requirements is contained in later sections of this Plan.

Levels of Service

The whole premise of asset management is that asset requirements and asset management strategies need to be driven by defined and acceptable service levels and performance standards. Level of service is a generic term used to describe the quality of services provided by an asset e.g. for roads, it is usually defined in terms of convenience of travel and safety performance. The following provides examples of levels of service characteristics for infrastructure assets that have been used to guide the development of maintenance and renewal targets.

Asset category	Levels of service characteristics
Roads - sealed roads	▪ ride quality ▪ user requirements for width & accessibility ▪ safety - clear signage & line marking (at least not confusing) ▪ travel time
Drainage - stormwater drainage system	▪ drainage capacity and efficiency ▪ structural integrity of drainage structures ▪ level of flood protection provided to properties and roads ▪ pedestrian and traffic safety
Buildings - community facilities	▪ compliance with building & fire regulations ▪ user requirements and availability ▪ clean & healthy facilities ▪ accessibility of facilities
Parks - children's play equipment	▪ condition and appearance ▪ compliance with Standards ▪ availability of playground equipment

The existing levels of service provided by Council's assets have been determined predominantly through condition surveys as well through a rigorous in-house consultation process which involved examination of historical patterns of complaints, defects, responsiveness and quality of repairs.

Similar process was used to develop desired levels of service and performance measurement processes. The gap identified between existing and desired service levels guided the development of asset management strategies and programmes to deliver the required level of service over the term of this Plan.

Demand for new assets

Demand projections for new infrastructure as well the need for major improvements to existing infrastructure have been identified in this Plan. The provision of this infrastructure is considered necessary to support the major residential and industrial growth predicted for the Liverpool area, particularly the south west growth centre. The following table provides estimates of type and quantity of new infrastructure required over the next ten years based on the predicted population growth as well as to meet demand for new assets in existing established areas of Liverpool.

Additional infrastructure	Quantity	Replacement Value
Roads	150km	$123,000,000
Footpaths & cycleways	165km	$22,000,000
Kerb & gutter	400km	$56,000,000

Additional infrastructure	Quantity	Replacement Value
Bridges	13	$5,000,000
Street lights	2450	Non council asset
Bus shelters	340	$4,000,000
Stormwater drainage	100km	$49,690,000
Flood retarding basins	5	$9,624,000
Gross pollutant traps	41	$1,562,000
Community buildings	2	$19,000,000
Sports amenity buildings	2	$1,772,000
Sports fields	2	$2,960,539
Passive reserves	21	$3,437,192
Playgrounds	21	$1,121,000
Foreshore Parkland	1	$679,737
TOTAL		**$304,324,000**

While the initial cost of provision of this additional infrastructure will be borne primarily by developers, the ongoing operation and maintenance liability will transfer to Council upon handover and acceptance of these new assets. These future costs, including increases in depreciation charges, are identified and considered in developing forecasts of future operating and maintenance costs.

Risk management

Council has adopted an Enterprise Risk Management Policy in December 2014 which provides the basis for Council's risk management approach and establishes the risk management responsibilities of Council in accordance with Australian Standard for Risk Management, AS/NZS ISO 31000:2009.

Council has implemented many management practices and procedures to identify and manage risks associated with providing services from infrastructure assets. The priority programmes for infrastructure renewal and upgrade are determined using engineering analysis, economic justification as well as risk assessments. The risk-based approach adopted in the development of works programs identifies specific risks associated with the ownership and operation of infrastructure assets and develops strategies to mitigate these risks.

In line with Councils risk management approach outlined in its Enterprise Risk Management Policy and Strategy, a comprehensive risk management documentation based on Australian Standard for Risk Management, AS/NZS ISO 31000:2009 will be developed as part of future review of Council's Asset Management Documentation.

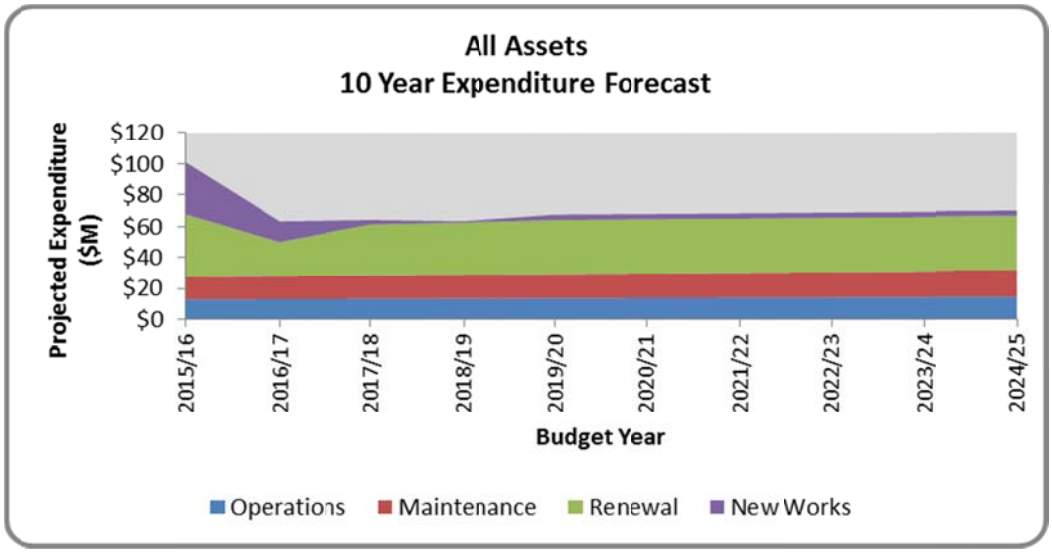
Life cycle management and expenditure forecasts

The long term priority program presented in this Plan reflects Council's adopted strategy

to manage its assets at the desired levels of service while optimising life cycle costs. Life cycle management involves consideration of all management options over the life of an asset from creation to disposal and this Plan details the key work activities considered necessary to manage and operate Council's assets. This includes operational and maintenance activities, restoration and renewal activities, enhancement and development activities and finally decommissioning and disposal activities.

The following presents a summary of ten-year expenditure forecast for Council's infrastructure assets.

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Asset Activity	**$100,960**	**$64,806**	**$64,262**	**$66,344**	**$67,611**	**$68,039**	**$68,473**	**$68,963**	**$69,344**	**$69,722**
Operations	$12,879	$13,091	$13,280	$13,465	$13,658	$13,850	$14,043	$14,236	$14,428	$14,621
Maintenance	$14,399	$14,799	$15,065	$15,301	$15,547	$15,793	$16,039	$16,285	$16,531	$16,777
Renewal	$40,638	$24,541	$32,988	$36,834	$35,006	$34,995	$34,991	$35,043	$34,985	$34,925
New Works	$33,119	$13,375	$2,930	$743	$3,400	$3,400	$3,400	$3,400	$3,400	$3,400



While funding to be allocated towards the adopted rolling program of works will be determined each year when the annual budget is formulated and adopted, Council aims to maintain the projected annual expenditure levels. The size of Council's annual budget allocations for its capital works and, importantly, how these budgets are apportioned to the various programmes, will have major implications for Council's future financial liability.

Infrastructure sustainability and service management

As of 30 June 2014, Council's infrastructure backlog is about $62.9M. Council has significantly increased the renewal funding in 2015/16 and onwards to reduce this backlog to benchmark level of less than 2%. With increased renewal funding, Council aims to reduce the backlog to below $32M by 2018/19, reducing its infrastructure

backlog ratio to below 2%. As can be seen from the table below, Council aims to reduce infrastructure backlog ratio below 0.7% from 2020/21 onwards.

	Financial Year										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Infrastructure Backlog Ratio	5.2%	3.9%	2.9%	2.9%	2.3%	1.9%	1.3%	0.7%	0.7%	0.7%	0.6%
Renewal Ratio	0.85	0.57	1.39	0.79	1.10	1.22	1.14	1.13	1.12	1.11	1.09
Maintenance Ratio	1.09	1.12	1.14	1.13	1.14	1.15	1.16	1.17	1.19	1.18	1.20

Council has planned its future renewal expenses in line with its projected depreciation expenses so that the long term average of building and asset renewal ratio remains above 100%. Council has estimated required maintenance cost based on required ongoing maintenance activities over the life of an asset to achieve minimum of its design useful life. Council's forecasted maintenance budget is in line with required maintenance expenditure for the next 10 years achieving the asset maintenance ratio above 100%.

Asset management practices and improvements

Finally, this Plan makes an assessment of status of Council's current asset management practices, identifies improvements and makes recommendations in areas where opportunities exist to improve the systems and processes for greater effectiveness.

2 INTRODUCTION

Liverpool City Council is responsible for the management, care and control of a wide range of physical assets with a combined replacement cost of over $1.96 billion. These include public roads and other transport related facilities; floodplain and drainage networks; parks, reserves and recreational facilities; property and buildings.

These assets are used to provide a range of services, which aim to deliver social, environmental and economic outcomes for the community of Liverpool. The level of service delivered by these assets is largely determined by the manner in which they are maintained and managed. Council aims to manage its assets at a level that ensures necessary standards of service are achieved and maintained over time in an efficient and cost effective manner.

2.1 Objectives of this Plan

This asset management plan aims to demonstrate responsive management of Council's assets (and services provided from these assets), compliance with regulatory requirements, and to communicate funding required in providing the required levels of service.

This Plan is expected to facilitate the prudent and responsible management of Council's assets by:

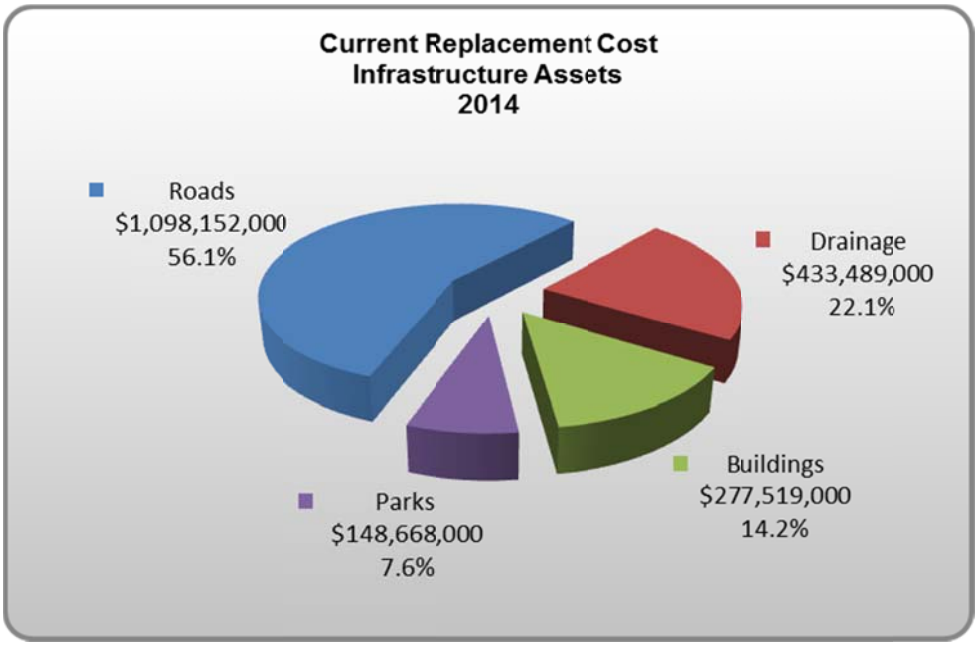
- ensuring that all assets provide the required levels of service in the most cost effective manner and in a way that minimises life cycle costs;
- identifying maintenance and renewal activities that are necessary to maintain these services and determining funds required to provide this service;
- identifying and managing risk and liability resulting from the operation of public assets through;
    - a program of regular inspections and monitoring activity to assess asset condition and performance, and
    - undertaking a risk based approach to identify operational, maintenance, renewal and capital development needs, and applying economic analysis techniques to select the most cost effective work programme.
- understanding and meeting the impact of growth through demand management and infrastructure investment
- ensuring that assets are managed to deliver Council's strategic outcomes

Scope of this Plan

This consolidated Infrastructure Asset Management Plan has been prepared to include all of Council's infrastructure and building assets. The full scope and value of assets covered by this Plan is shown below.

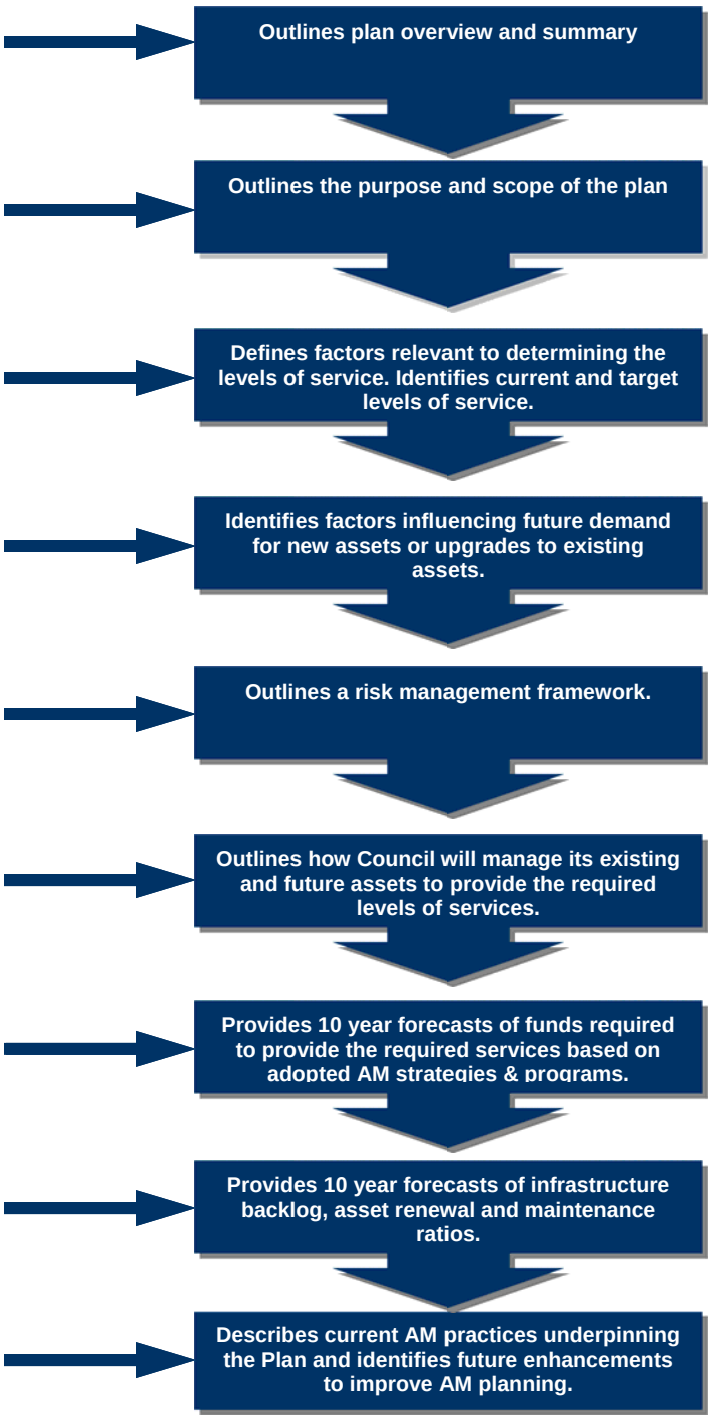
Asset Category	Scope	Value ('000)
Roads & Transport	853km	$1,098,000
Buildings	209 buildings	$278,000
Drainage & Floodplain	547km of piped drainage	$433,000
Parks & Recreation	Over 500 parks & reserves	$148,000
TOTAL		**$1,957,000**

The following figure shows the makeup of infrastructure assets under the care and control of Liverpool City Council.



2.2 Plan format

The format of the Infrastructure Asset Management Plan follows the structure recommended in the International Infrastructure Management Manual for the development of asset management plans. The following figure illustrates the key elements and relevant AMP section references in this plan.



2.3 Key stakeholders

Management and operation of public infrastructure assets generally must address and balance the needs and expectations of its stakeholders. This plan is intended to demonstrate to stakeholders that Council is managing its infrastructure assets responsibly. The key stakeholders include:

Internal	External
Council Executive Team Other Management Units Infrastructure and Environment staff Committees Asset Users City Presentation Finance Property Services	Members of Parliament Residents, ratepayers & general public Business owners/operators Community groups & sporting bodies Asset users Government agencies including public utilities

2.4 Legislative requirements

Following the inquiries conducted by the Local Government and Shires Association into the financial sustainability of NSW Local Governments in 2006, the Department of Local Government enacted legislation in October 2009 to amend the Local Government Act 1993. The new legislation introduced a new planning and reporting framework for NSW local governments requiring:

- preparation of a long-term Community Strategic Plan; and
- preparation of a resourcing strategy to achieve the objectives established by the community strategic plan, which includes a long-term financial plan, workforce management plan and asset management plans for all assets under the control of Council.

While this asset management plan has initially been developed in response to the new legislation, recognition of Council's vast investment in infrastructure and its importance to the delivery of service has also been a major impetus for moving towards more formalised asset management practices.

Further, following the abolition of immunity and defence that existed under the rule of nonfeasance and subsequent introduction of the Civil Liability Act 2002, Councils now have a positive duty of care to take steps to mitigate foreseeable risks and injuries within available resources. The Civil Liability Act 2002 requires Councils to take reasonable steps to ascertain the existence of latent dangers which might reasonably be suspected to exist in the management of public assets.

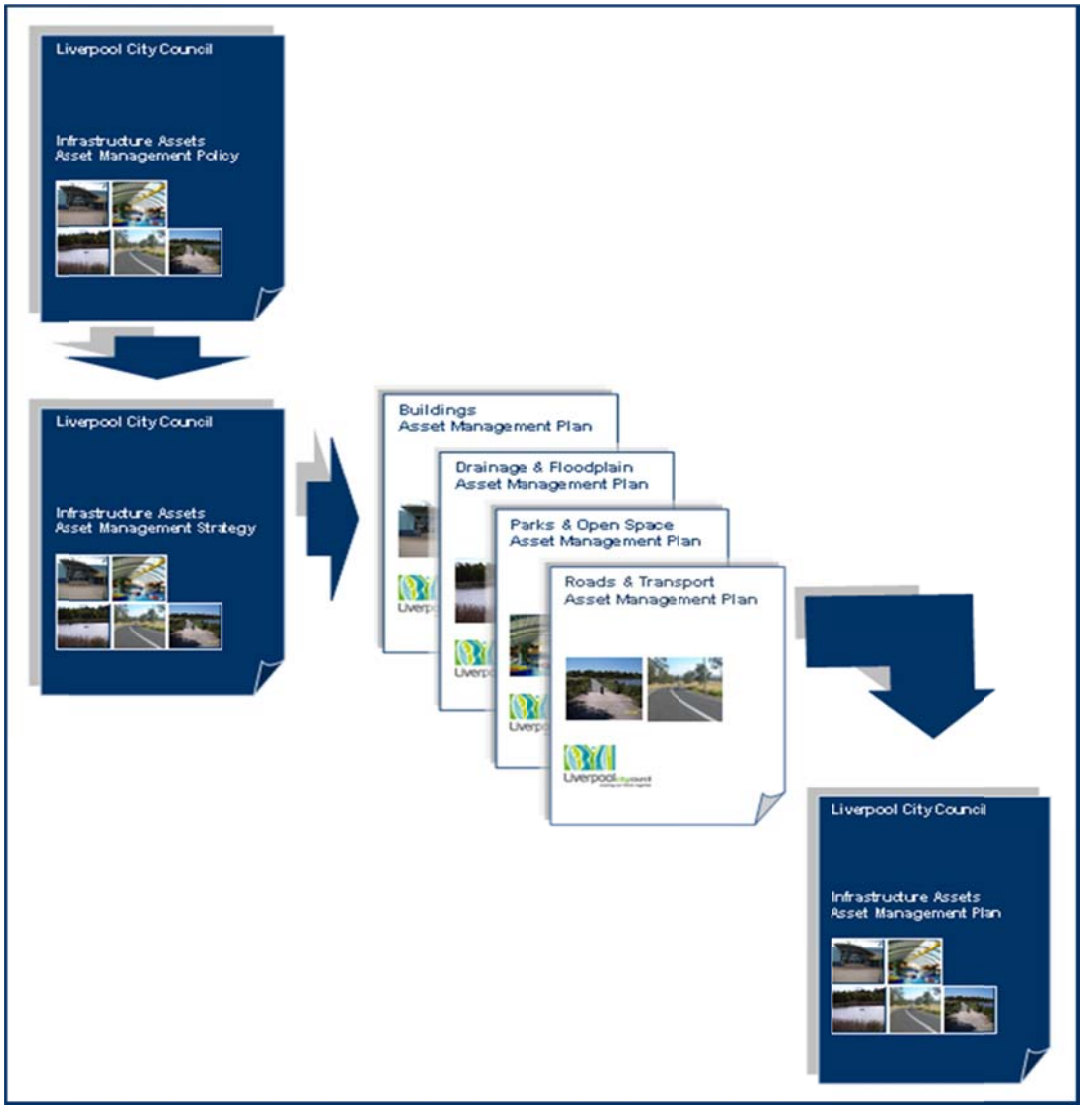
The development and adoption of formalised and structured asset management practices for Council's assets will provide the very framework needed to identify and mitigate potential risks arising from the ownership and operation of public assets.

2.5 Relationship with other plans

This asset management plan for Council's infrastructure assets is a key component of Council's planning process and has been prepared under the direction of Council's strategic plans, asset management policy and strategy, which outline Council's long term strategic vision, short term strategies and specific actions with respect to the management of its assets.

Separate asset management plans have been developed covering each of the four key classes of infrastructure assets under the care and control of this Council. This Plan consolidates the various asset management plans and is intended to present a more holistic view of Council's approach to the management of its assets.

A summary of the plan structure and major asset classes is shown below.



EVEL OF SERVICE

3.1 Introduction

The whole premise of asset management is that asset requirements and asset management strategies should be driven by defined and acceptable service levels and performance standards. This section will define the various factors that are considered relevant in determining the level of service for Council's assets that have been used to provide the basis for the life cycle management strategies and works programme identified within this asset management plan.

Level of Service is a generic term used to describe the quality of services provided by an asset e.g. for roads, it is usually defined in terms of convenience of travel and safety performance and for buildings, it is defined in terms of functionality, accessibility and amenity. The following provides examples of levels of service characteristics for key infrastructure assets:

Road & Transport Asset	Levels of service characteristics
Roads	▪ ride quality ▪ user requirements for width & accessibility ▪ safety - clear signage & line marking (at least not confusing) ▪ travel time
Bridges	▪ load rating/capacity ▪ availability/flood immunity ▪ vertical & horizontal clearances
Stormwater drainage system	▪ drainage capacity and efficiency ▪ structural integrity of drainage structures ▪ level of flood protection provided to properties and roads ▪ pedestrian and traffic safety ▪ quality of water discharged to natural waterways ▪ overall health of natural waterways
Community buildings	▪ compliance with building & fire regulations ▪ user requirements and availability ▪ clean & healthy facilities ▪ accessibility of facilities
Playground equipment	▪ condition and appearance ▪ compliance with Standards ▪ availability of playground equipment

These levels of service have been used to:

- develop asset management strategies to deliver the required level of service;

- measure performance against defined targets, over the long term;
- identify costs and benefits of the services provided; and
- enable customers to assess the suitability and affordability of the services offered.

3.2 Factors affecting levels of service

Service levels and desired standards are mostly influenced by and translated from community expectations, strategic goals, legislative requirements, technical standards and availability of resources. While the management and operation of infrastructure assets generally must address and balance the needs and expectations of its community, in setting service level targets, consideration has also been given to technical and legislative standards, and Council's ability to allocate sufficient resources to meet proposed targets.

3.3 Community research and expectations

Users of Council services have certain expectations regarding types and levels of service that are to be provided. Customer satisfaction surveys are useful in the identification of gaps between Council's performance and community expectations.

In response to the new legislation for Planning and Reporting and following a comprehensive community consultation process, Council has developed a 10 year Community Strategic Plan for Liverpool called ***Growing Liverpool 2023.*** The Community Strategic Plan sets directions, objectives and strategies for the coming ten years, based on community needs and priorities.

Council's Asset Management Policy, Strategy and this Plan aims to translate the identified priorities and objectives into actions for delivery. In determining the current and desired levels of services for Council assets, the following means have been used to inform the Asset Management Plan:

- existing best practices and industry benchmarks
- Community surveys seeking feedback on performance of Council's various services and infrastructure assets
- briefings involving the various Community Forums and Councillors
- technical standards and readily available literature on customer expectations

3.4 Strategic and corporate goals

Management, operation and development of assets need to be consistent with goals and values stated in the corporate plan. Council's ten year Community Strategic Plan identifies long term priorities and goals that Liverpool's community want to have delivered in their City.

Council's asset management practices and programs will be driven by the following stated key directions in Growing Liverpool 2023, the ten year Community Strategic Plan for the City of Liverpool.

- Vibrant Prosperous City
- Liveable Safe City
- Natural Sustainable City
- Accessible Connected City
- Leading Proactive Council

3.5 Legislative requirements, standards and codes of practice

Legislative requirements provide broad framework and impose minimum standards for the management of public infrastructure to ensure safety of its users. Further, public assets must be managed in compliance with relevant codes and standards and the adoption of performance measures and targets must consider available level of resources to achieve these targets

The key legislations that impact on the standards of infrastructure are listed below.

Legislation	Legislative requirement & impact on asset management
1. Roads Act 1993	Sets out procedures, functions and responsibilities of Council as the roads authority with respect to the management and administration of all roads under its control.
2. Local Government Act 1993	Provides the legal frameworks for the provision of various services to the community.
3. Environment Planning & Assessment Act	Sets out processes for the orderly and economic development of land including processes for the provision and coordination of community assets.
4. Disability Discrimination Act 1992	Imposes strict standards and timeframes through Disability Standards for Accessible Public Transport 2002 .e.g. access paths, manoeuvring areas & ramps to 55% of bus stops in Council LGA are to be fully accessible by 2012; 90% to be fully accessible by 2017 and full compliance to be achieved by 2022.
5. Heritage Act 1997	Aims to conserve the environmental heritage of the State. Several properties within the LGA are listed under the terms of the Act and attract a high level of maintenance, approval and monitoring.
6. Building Code of Australia	BCA aims to achieve a nationally consistent minimum standards of health, safety, (including structural safety and safety from fire), amenity and sustainability objectives efficiently.
7. Civil Liability Act 2002	The Civil Liability Act imposes a positive duty of care on Councils to take steps to mitigate foreseeable risks and injuries. A formalised system of inspection and monitoring is now critical in proactively identifying and mitigating potential risks.

Legislation	Legislative requirement & impact on asset management
8. Work Health and Safety Act 2011	Imposes legal obligations on Council and Council staff to protect the health, safety and welfare of all employees, contractors and visitors visiting to the workplace.

3.6 Current and target levels of service - asset condition & performance

To enable development of the most optimal asset management strategies and programmes for assets, it is essential that the current condition and performance of assets are well understood. Condition surveys of existing assets provide valuable data to objectively determine current performance and develop long term and appropriate maintenance and renewal strategies and programmes.

Asset condition reflects the physical state of the asset, which in most cases influences its ability to provide the required levels of service. Every asset is subject to deterioration resulting in a reduction of future service potential. The Planning and Reporting Manual[2] recommends the use of the following condition rating model for the condition assessment of assets, which is based on the condition assessment model suggested in the International Infrastructure Management Manual.

Rating	Description of condition	Remaining Service Potential
1	**Excellent** - very good condition and only normal maintenance required	85%-100%
2	**Good** - minor defects only and minor maintenance required	65%-85%
3	**Average** - significant maintenance required to return to accepted levels of service	30% -65%
4	**Poor** - significant renewal and upgrade required	10%-30%
5	**Very poor** - asset unserviceable and over 50% of asset requires replacement	0%-10%

Results of Council's condition surveys, assessments and typical condition photos are included in later sections of this Plan. All condition assessments are based on visual assessment of current asset condition.

While, over the years Council has significantly improved the level of information on its assets, the same level of information is not, however, available for every asset class. The following provides status of asset condition surveys and level of information available for each asset class:

[2] Department of Local Government 2010, *Planning a Sustainable Future - Planning & Reporting Manual for Local Government in NSW*, DLG, Sydney

Asset class	Status of condition survey
1. Roads & Transport Assets	Council has comprehensive information on this asset class.
2. Drainage & Floodplain Assets	While Council has comprehensive information on most assets within this category, condition assessment of underground piped drainage system is continuing and will be ongoing.
3. Building Assets	Council has recently collected comprehensive condition information of most of this asset class, additional information is being collected from the other areas.
4. Parks & Recreation Assets	Council has reasonable information on this asset class except information on below ground infrastructure in sports fields.

3.7 Levels of service tables

As stated above, the whole premise of asset management is that asset requirements and asset management strategies should be driven by defined and acceptable service levels and performance standards.

Appropriate asset management strategies have been developed to improve and deliver the required levels of service when service gap is observed from the current level of service. Asset renewal programmes have been developed to progressively improve condition and maintain average condition within target levels.

Levels of service tables have been extensively used to translate information regarding service requirements and standards into performance targets, asset management strategies and programmes and levels of service tables for several classes of assets are attached as Appendix B. As can be seen, level of service tables provides a structured method for collating information regarding current and target service levels for all asset groups and provides the framework and basis for the development of long term asset management strategies and works programmes.

Levels of service tables also provide information regarding areas of service deficiencies, potential asset failures or constraints. This information forms basis for Council to develop its improvement action plan.

3 DEMAND FORECAST

4.1 Introduction

Infrastructure assets are long lived and asset management planning involves consideration of activities and costs over the life cycle of the asset. This requires consideration of not only existing assets, but assets that will be provided over the long term. This section of the Plan will:

- identify factors and trends that influence demand for assets over the long term;
- prepare projections for new assets as well as identify need for upgrade to existing assets over a ten year period; and
- consider demand management strategies that can be considered as an alternative to upgrading or creating assets to meet changing demand .

A comprehensive understanding of demand for new infrastructure is essential and will enable Council to:

- optimise utilisation & performance of existing assets;
- reduce or defer the need for new assets;
- better understand long term maintenance and operation costs (including depreciation) associated with service delivery;
- improved resource planning leading to sustainable service delivery; and
- better meet customer needs.

4.2 Factors influencing demand

Understanding key drivers of demand is an important first step in forecasting demand for new assets. Once the factors are understood, mathematical modelling can be used to assess the impact of these factors on future demand. The key drivers of demand for infrastructure assets are:

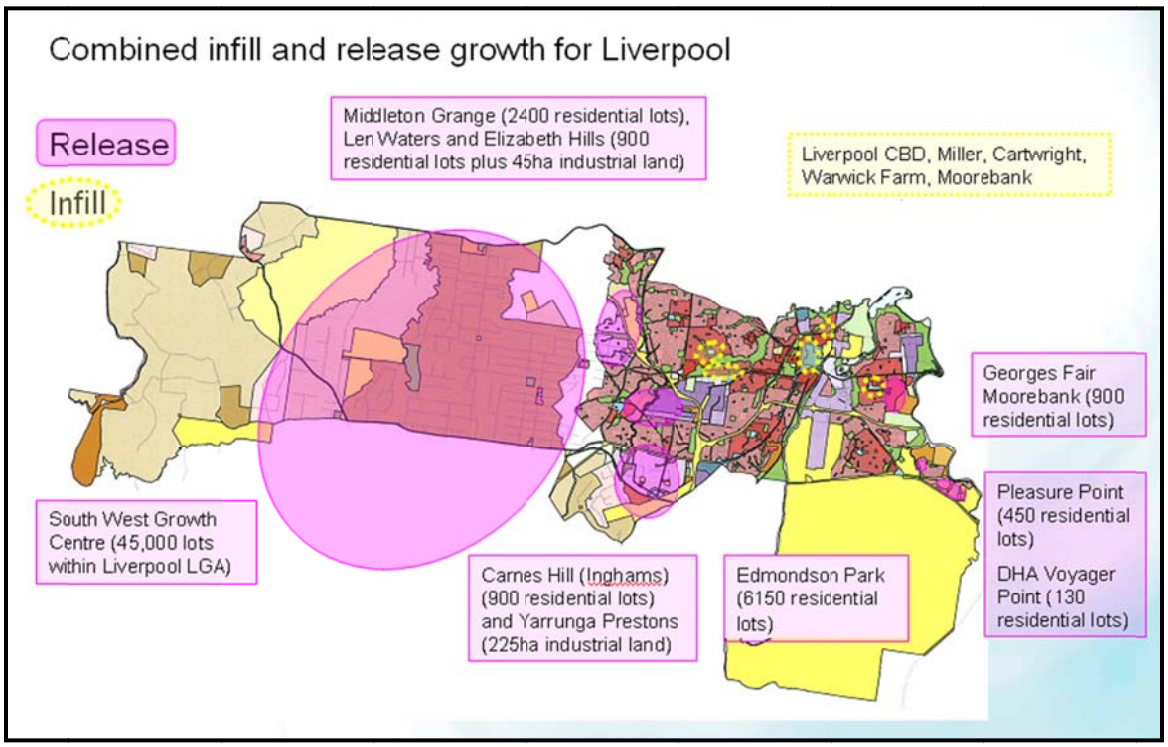
- population growth & residential development;
- demographic changes;
- commercial & industrial growth;
- demand for increased services; and
- strategic extensions to the network

This section of the Plan describes these demand factors, their impact on future demand for new or upgraded assets and how these factors have been used to project future demand for new assets.

4.3 Growth trends

Population growth is a more commonly understood factor influencing demand changes and quantitative demand forecasting techniques have been used to translate population growth to changes in the asset base.

Council's approach to managing the predicted growth within Liverpool is a combination of urban release and urban consolidation strategies. Both these strategies place different demands on existing or new infrastructure. Higher density, infill development has been identified for strategic areas around the Liverpool CBD while the major new release areas are located along the western and eastern fringes of the existing urban areas as shown on the figure below. The growth along the existing urban fringes is already evident with a large number of new residential developments over the past three years.



The western areas of the LGA, known as the south west growth centre, are expected to experience the most significant growth. The South West Growth centre incorporates suburbs of Austral, Kemps Creek, Rossmore, Badgerys Creek and Bringelly and extends into Camden LGA. The South West Growth Centre is expected to yield 100 000 dwellings (approx 325,000 people) over the next 30 years.

Once future asset demand is fully understood, effective demand management strategies will be required explore an alternative to upgrading or creating assets to meet changing demand .e.g. rationalising assets, disposal and alternative usage.

4.4 Demographic changes

Factors such as population trends, population density, age profile and leisure trends are not expected to greatly influence the quantity or type of road and drainage related infrastructure.

However, in areas such as Buildings and Open Space, changing demographics are likely to have a stronger influence on future demand for social infrastructure than population numbers.

4.5 Commercial and industrial impacts

An assessment of areas that are likely to undergo major industrial developments has been undertaken, which has enabled identification of upgrades and improvements to transport and drainage related assets. Major industrial subdivisions and developments are forecasted within the broader Prestons industrial area, which identified the need for major upgrades to key sub arterial links to these area. As such Council recently completed the construction of Bernera Road and Kurrajong Road is being completed in 2015/16.

Extractive industries involving shale and clay have been identified within the western parts of the growth centres in the short to medium term, particularly around Badgerys Creek and Bringelly due to high quality clay soils in these areas.

A contributions plan for extractive industries will be developed, which will:

- identify and nominate roads that are to be used as primary access routes to future mining sites;
- identify necessary upgrades to these routes to support the increase in heavy vehicles resulting from these extractive industries, and
- determine appropriate contributions to be levied on these industries to fund the need for increased levels of maintenance on existing roads as a result of the increase in the number of heavy vehicles.

Commercial and industrial developments are unlikely to have any significant impact on the demand for buildings and open space infrastructure.

4.6 Strategic extensions to network

Council often inherits new and upgraded assets arising out of works by State agencies on major state arterials. The State Government made significant investments towards major transport network within Western Sydney in the last decade. Construction of M7 and major upgrades to the state arterials within the Liverpool LGA comprising Hoxton Park Road, Camden Valley Way and Cowpasture Road are some of the examples of those investment.

These improvements have resulted in the creation of a large number of high quality new assets within the nature strip, which include cycleways, footpaths, street lighting and landscaped gardens. The transfer of ownership of these assets to Council has also created an additional maintenance burden and will impact on Council's long term financial

liabilities. A major impact to the maintenance budget arises from the need for a more proactive and intensive maintenance of the extensive landscaped areas, which are now Council responsibility.

In April 2014, the Australian Government announced that Badgerys Creek will be the site for a Western Sydney airport. A major upgrade planned for Bringelly Road and Elizabeth Drive to provide easy access to the airport will create additional demand on the existing local, collector and regional roads, triggering for major upgrade.

4.7 Impact of trends on infrastructure

The need for major improvements to existing infrastructure has been identified by Council to support major residential and industrial release areas of Liverpool. While the provision of internal infrastructure will be developer responsibility, extensive improvements to existing road and transport related infrastructure required to support these developments remains Council responsibility. Funding for such infrastructure are provided by Council from S94 contributions and other sources of funding.

Council recently completed reconstruction and widening of Bernera Road and upgrade of trunk drainage system to facilitate a major industrial development comprising over a 270 ha site at Yarrunga in Prestons. Reconstruction and widening of Kurrajong Road is currently underway to provide an essential link to a major residential release area at Carnes Hill comprising 900 lots.

The following outlines some of the major upgrades proposed in the near future:

- Provision of flood retarding basins to facilitate a 45ha industrial development at the former Hoxton Park Airport site in West Hoxton; and
- Provision of flood retarding basins to facilitate over 6,100 lot residential subdivision at Edmondson Park.

In addition, demand projections for new infrastructure have also been prepared and the following table provides estimates of type and quantity of new infrastructure required over the next ten years. It is based on the predicted population growth and a number of assumptions regarding the ratio of new assets to each new household.

Additional infrastructure	New release areas	Existing areas	Replacement Value
Roads	150km	0	$123,000,000
Footpaths & cycleways	125km	40km	$22,000,000
Kerb & gutter	300km	100km	$56,000,000
Bridges	13	0	$5,000,000
Street lights	2450		Non council asset
Bus shelters	90	250	$4,000,000
Piped drainage	100km	1km	$49,690,000
Gross pollutant traps	29	12	$1,562,000

Additional infrastructure	New release areas	Existing areas	Replacement Value
Flood retarding basins	4	1	$9,624,000
Community centres	2	2	$17,000,000
Libraries		1	$5,000,000
Sports amenity buildings	1	2	$3,250,000
Sports Fields	2	0	$2,960,000
Passive Reserves	21	0	$3,437,000
Playgrounds	21	0	$1,121,000
Foreshore Parkland	1	0	$680,000
TOTAL			**$304,324,000**

While the initial cost of provision of this additional infrastructure will be borne primarily by developers, the ongoing operation and maintenance liability will transfer to Council upon handover and acceptance of these new assets. These future costs are identified and considered in developing forecasts of future operating and maintenance costs.

4.8 Demand management strategies

Demand management strategies provide alternatives to the creation of new assets in order to meet demand. Objective of demand management is to actively seek to modify customer demands for service in such a way that utilisation of existing assets is maximised and demand for new assets is deferred or reduced. Non-asset solutions may range from controlling demand to reducing levels of service as shown below.

Asset class	Non asset solution	Description
Buildings	Rationalise and optimise usage of existing facilities Leasing properties to meet needs	Investigate ways to maximise use of existing buildings to improve its utilisation e.g. review occupancy and layout of existing buildings
	Planning controls	Review planning regulations to allow Service Providers commercial opportunities for the delivery of services, insuring against risks and managing failures.
	Joint venture partnerships	
Drainage & Floodplains	Development controls	Discourage or restrict development in flood prone areas using risk based approach in lieu of providing costly flood mitigation structures.

Asset class	Non asset solution	Description
	Managing stormwater	Where possible, investigate ways to direct runoff from hardstand areas through existing landscape and grassed areas to eliminate use of pollutant capture systems.
Parks & Open Space	Rationalise and optimise usage of existing facilities	Investigate ways to maximise use of existing sporting fields and buildings to improve its utilisation.
	Decommission & disposal	Progressively convert small sections of unused open space back to natural bushland
		Progressive closure and disposal of passive open space under 1000sm and/or where open space exceeds catchments needs
Roads & Transport	Transportation strategies	Promote alternative forms of transport and review the road hierarchy and linkages to allow the road network to develop in an efficient manner.
	Traffic controls	The increased development of urban areas may create the need to implement traffic control strategies, which include installation of signals that help to control traffic flows within urban areas and the intersections.
	Traffic bylaws	Bylaws could be introduced to restrict use of existing roads during certain times to manage peak demand - e.g. introducing clearways to improve road capacity during peak hours.
	Community strategies & public education	Public education programmes could be implemented to encourage use of alternative transport methods.
	Reduced level of service	In the long term as the capacity of the road network fails to meet increased traffic demand, it may become appropriate to provide a reduced level of service e.g. failing roads in future release areas should only be maintained to ensure it is safe and trafficable until full reconstruction and resurfacing can be undertaken as part of any subdivision.

4 RISK MANAGEMENT

5.1 Introduction

This section of the plan identifies Council's approach to the management of risks associated with the creation, management and operation of community assets. Council has adopted an Enterprise Risk Management Policy in December 2014 which provides the basis for Council's risk management approach and establishes the risk management responsibilities of Council in accordance with Australian Standard for Risk Management, AS/NZS ISO 31000:2009.

Council has implemented many management practices and procedures to identify and manage risks associated with providing services from infrastructure assets. The priority programmes for infrastructure renewal and upgrade are determined using engineering analysis, economic justification as well as risk assessments. The risk-based approach adopted in the development of works programs identifies specific risks associated with the ownership and operation of infrastructure assets and develops strategies to mitigate these risks.

In line with Councils risk management approach outlined in its Enterprise Risk Management Policy and Strategy, a comprehensive risk management documentation based on Australian Standard for Risk Management, AS/NZS ISO 31000:2009 will be developed as part of future review of Council's Asset Management Documentation.

An abridged version of the risk management framework outlined in the Australian Standard for Risk Management is illustrated in the figure below.

The Risk Management Plans for each asset catagories included as part of Asset Management Plans will be supported by a risk register and will:

- identify risks to Council that may impact on the delivery of services from infrastructure;
- select credible risks for detailed analysis;
- analyse and evaluate risks in accordance with AS/NZS ISO 31000:2009 and Councils Risk Management Policy and Strategy;
- prioritise risks and identify risks requiring treatment by management action; and
- develop risk treatment plans identifying the tasks required to manage the risks, the

person responsible for each task, the resources required and the due completion date.

5.2 Current risk management process

Council has implemented many management practices and procedures to identify and manage risks associated with providing services from infrastructure assets. These include:

- monitoring condition and performance of assets to predict future performance and potential asset failures through systematic periodic inspections and condition assessments;
- operating a planned maintenance program for all assets;
- operating a reactive maintenance service for all not critical assets and services;
- undertaking comprehensive flood studies including developing and implementing LGA wide floodplain risk management plans;
- renewing and upgrading assets to maintain service delivery;
- closing and disposing of assets not providing the required service level; and
- acquiring or constructing new assets to provide new and improved services.

Assessment of risks associated with delivery of services from community buildings and recreation assets has identified several potential risks for Council and these have been included in the appendices. The management of risks associated with assets and service delivery is currently the responsibility of the various areas of Council that are involved in the management of assets and services provided by assets. It is intended that with a more formalised Risk Management Model, the roles and responsibilities for risk management within the organisation will be better defined and risk treatment better assigned.

5.3 Risk identification and works prioritisation

Since funding for the management of assets will always be limited, asset maintenance, rehabilitation and improvement works will have to be prioritised. This requires some form of objective differentiation between projects to identify and target funding towards areas and projects of greatest need.

Council's works priorities for infrastructure renewal and upgrade works are determined using engineering analysis, economic justification as well as risk assessments. The risk-based approach adopted in the development of works programs identifies specific risks associated with the ownership and operation of infrastructure assets and develops strategies to mitigate the risks.

Following comprehensive asset inspections over that last five years, a risk based project selection method has been developed for the key infrastructure assets, which has enabled an objective ranking and prioritising of the identified renewal works.

6 LIFECYCLE MANAGEMENT PLANS

Life cycle management involves consideration of all management options over the life of an asset from creation to disposal and this section of the Plan will detail how Council plans to manage and operate its assets at the desired levels of service (defined in Section 3 & Appendix B) while optimising life cycle costs.

Life cycle management plans cover the following five key work activities, which are necessary to manage and operate these assets.

Asset management activity	Description
Operational activities	Activities undertaken to ensure efficient operation and serviceability of assets to enable the assets to provide intended service over its useful life. Asset operation may not have effect on asset condition but is necessary to keep the asset appropriately utilised. Typical operational activities include: ▪ cleaning of buildings ▪ park mowing ▪ electricity costs for streetlights ▪ street sweeping and cleaning ▪ litter control
Maintenance activities	Are the ongoing repair and minor replacement works required to keep assets operating at required service levels over its useful life, and falls into two broad categories: ▪ Planned (proactive) Maintenance - proactive inspection and maintenance works planned to prevent asset failure; and ▪ Unplanned (reactive) Maintenance - reactive action to correct asset malfunctions and failures on an as required basis (e.g. emergency repairs). Operation and maintenance costs have been determined based on existing & adopted service level standards applied to existing and new assets over the term of the Plan.

Asset management activity	Description
Restoration & renewal	Provides for the progressive replacement of individual assets or its components, which have reached the end of their service life. Deteriorating asset condition primarily drives renewal needs and will generally involve substantial replacement of the asset or a significant asset component to its original size and capacity to restore its service potential. Renewals expenditure includes: ▪ replacing large sections of building roofs; ▪ replacing large sections of turf or play ground equipment; ▪ resurfacing of roads - asphalt or sprayed seals; ▪ relining or replacing large sections of deteriorated drainage pipes; ▪ rehabilitation & reconstruction of roads - replacement of existing pavement and surfacing with an equivalent structure that is generally applicable for a long length of road. This could also include insitu stabilisation to restore structural integrity of road pavements; ▪ replacement of footpaths - replacement of large sections of paved footpaths and cycleways to restore serviceability; ▪ replacement of major structures such as bridges and retaining walls or their components; and ▪ replacement of street furniture such as bus shelters and litter bins. Renewal expenditures have been determined from condition assessment, predictive modelling and rate of asset depreciation. Asset condition is the primary determinant in renewal intervention.

Asset management activity	Description
Enhancement & development activities	Provides for upgrades to address capacity constraints or to meet development needs and increased community expectation. These include: ▪ works which create an asset that did not exist in any shape or form .e.g. new paved footpaths and shared ways or providing new playground equipment; ▪ works which improves an asset beyond its original size or capacity .e.g. widening of existing roads or extensions to existing buildings to provide additional capacity; ▪ upgrade works which increase the capacity of an asset; or ▪ works designed to produce an improvement in the standard and operation of the asset beyond its original capacity .e.g. new traffic control device such as roundabout. Need for enhancement and development activities and associated costs have been determined from: ▪ condition assessments (i.e. potential asset failures, capacity constraints); ▪ strategic and master plans (growth predictions & strategies); ▪ flood plain management plans; and ▪ community input.
Decommissioning & disposal activities	Any of the activities associated with disposal of a decommissioned asset including sale, demolition or relocation. The factors that influence decommissioning and disposal activities include asset age & condition, obsolescence and changing needs.

The following sections of the Plan outline life cycle management strategies and corresponding expenditure forecasts for the following group of infrastructure assets:

- roads and transport assets
- drainage and floodplain assets
- buildings
- parks and open space

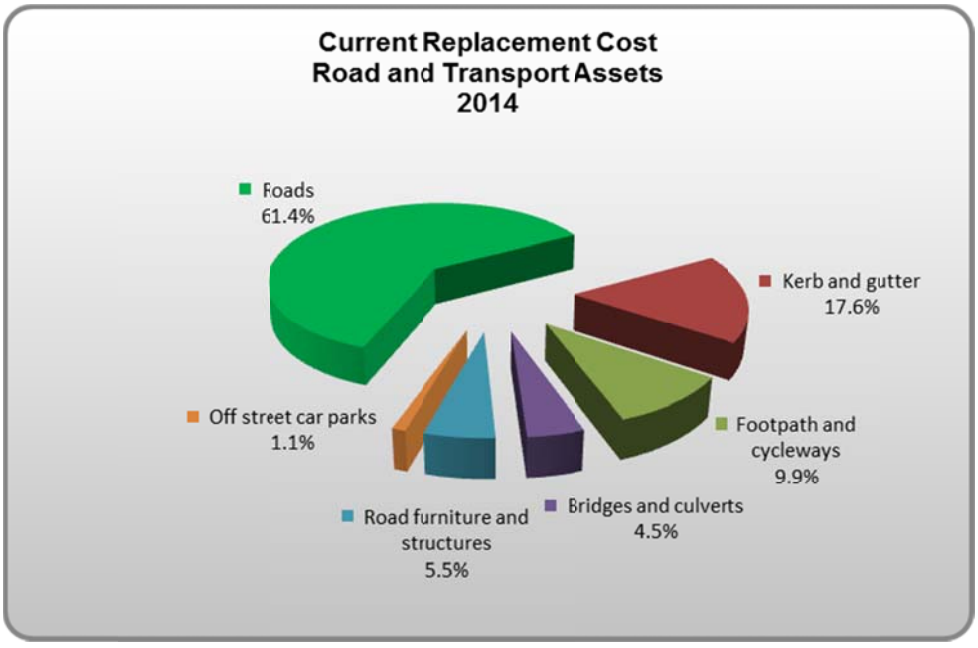
7 ROADS AND TRANSPORT ASSETS

7.1 Information and description of roads and transport assets

Council is responsible for the control and care of over 853km of sealed road network and 103 bridges of various compositions with a combined replacement cost exceeding a billion dollars. The scope and value of Council's road related infrastructure is shown below and as can be seen, it represents the highest value of assets owned by Council comprising over 56% of the entire asset portfolio.

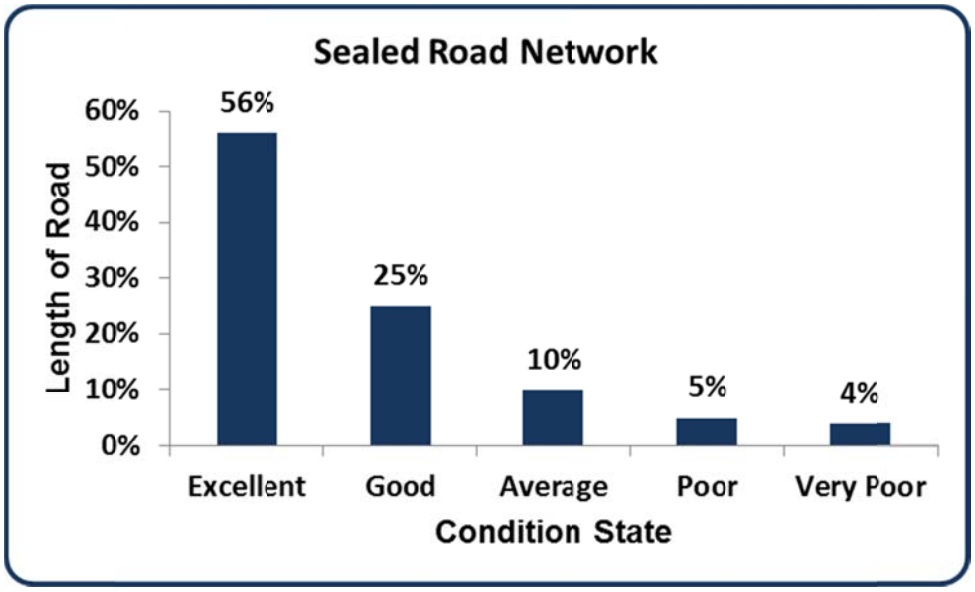
Road & Transport Asset	Quantity	Value ('000)
Roads	853 km	$674,322
Kerb and gutter	1271 km	$193,241
Footpath and cycleways	657 km	$109,184
Bridges and culverts	103 No	$49,662
Road furniture and structures		$60,009
Off street car parks	119	$11,734
TOTAL		**$1,098,152**

The following figure shows the makeup of all road and transport related infrastructure assets under the care and control of Liverpool City Council.



7.2 Condition and performance of roads & transport assets

Council has been progressively undertaking inspections and condition surveys of all its road related assets. A comprehensive condition assessment of the entire network of road pavements was undertaken in 2013. This information has formed the basis for Council's road pavement maintenance and renewal strategies and programmes. The following graph presents average condition distribution of Council's sealed road network.



Photos below show the various condition states of sealed roads.

Excellent	Good	Average	Poor	Very poor

The following provides a summary of condition and performance information for some of Council's key road assets.

Road & Transport Asset	Proportion of assets in each of the following condition state				
	Excellent	Good	Average	Poor	Very Poor
Sealed Roads Surface	56%	25%	10%	5%	4%
Sealed Roads Structure	56%	25%	10%	5%	4%
Bridges	23%	54%	21%	2%	0%
Footpaths	12%	39%	48%	1%	0%

Road & Transport Asset	Proportion of assets in each of the following condition state				
	Excellent	Good	Average	Poor	Very Poor
Cycle ways	51%	21%	28%	0%	0%
Kerb and Gutter	9%	51%	39%	1%	0%
Road Structures	8%	60%	31%	1%	0%
Road Furniture	62%	21%	11%	5%	1%
Off Street Car parks	50%	29%	17%	3%	1%

The condition of road and transport assets has improved in general in comparison to the conditions observed in 2009. For example condition of below average road assets has reduced from 15% in 2009 to only 9% in 2013. This is due to the increased renewal expenditure over the last few years and effective implementation of Council's asset management plan. Approximately 9% of the road pavements are still at below average condition overall, mainly due to ageing and deterioration.

Detailed information on each of the above asset categories including asset condition, current and target performance, required maintenance and renewal activities, and corresponding funding requirements is contained in the Roads & Transport Asset Management Plan.

7.3 Level of service

As stated previously, level of service for roads is usually defined in terms of convenience of travel and safety performance. The following provides examples of levels of service characteristics for key transport related assets that have been used to guide the development of maintenance and renewal targets and programs.

Road & Transport Asset	Levels of service characteristics
Roads	▪ ride quality ▪ user requirements for width & accessibility ▪ safety - clear signage & line marking (at least not confusing) ▪ travel time
Bridges	▪ load rating/capacity ▪ availability/flood immunity ▪ vertical & horizontal clearances
Footpaths & cycleways	▪ ride quality ▪ user requirements for width & accessibility ▪ safety - absence of any trip hazard

The existing levels of service provided by Council's road assets have been determined predominantly through condition surveys as well through a rigorous in-house consultation

process which involved examination of historical patterns of complaints, defects, responsiveness and quality of repairs.

Similar process was used to develop desired levels of service and performance measurement processes. The gap identified between existing and desired service levels guided the development of asset management strategies and programmes to deliver the required level of service over the term of this Plan e.g. the proposed road rehabilitation and reconstruction programmes aim to progressively improve road network pavement condition and surface roughness to achieve target levels.

7.4 Management of risks associated with roads & transport assets

Council has implemented many management practices and procedures to identify and manage risks associated with providing services from road and transport related assets. These include:

- monitoring condition and performance of road assets to predict future performance and potential asset failures through systematic periodic inspections and condition assessments;
- renewing and upgrading assets to maintain service delivery;
- constructing new pedestrian and traffic facilities to mitigate accident risks including accident black spots.

The priority programmes for infrastructure renewal and upgrade presented in this Plan have been determined using engineering and economic justification as well as risk assessments. The risk-based approach adopted in the development of works programs identifies specific risks associated with the ownership and operation of infrastructure assets and develops strategies to mitigate the risks.

7.5 Lifecycle management plan for roads & transport assets

The long term priority program presented in this Plan reflects Council's adopted strategy to manage its road assets at the desired levels of service while optimising life cycle costs. The life cycle management plan for roads involves consideration of all management options over the life of road assets including operational and maintenance activities, restoration and renewal activities, enhancement and development activities and finally decommissioning and disposal activities.

7.6 Operations and maintenance plan

The routine operating activities for roads such as inspections and patrols, condition surveys, quality audits and litter control are expected to continue into the future without any significant change. However, several components of Council's roads operating costs are projected to rise significantly over the term of the plan due to increases to Council's asset base. Over 150km of new roads and over 2400 new street lighting is expected to be provided over the next 10 years in conjunction with new release areas, which will result in sizeable increases to street sweeping costs and electricity charges respectively. Council's depreciation expense is also projected to increase over the next 10 years in line with

increases to its asset base.

Council's road maintenance strategies aim to progressively upgrade assets that are in poor condition while placing a significant focus on preventing assets that are in fair or good condition from falling into the poor category. This preventative approach aims to minimise the overall rate of decline in the condition and performance of the road network and preserve the existing roads in a serviceable condition over the long term.

Council achieves this by undertaking a range of necessary routine maintenance activities on a regular basis to protect the pavement and its surfacing and reduce any potential deterioration.

The Road Asset Management Plan also outlines a more cost effective and enhanced maintenance strategy for roads within the future South West Growth Centre as an alternative to the more costly full reconstruction and resurfacing of deteriorating pavements.

7.7 Restoration and renewal plan

A large proportion of pavement failures originate at the road surface and timely intervention through appropriate renewal treatment can extend the pavement life at minimal cost. However, investigations show that many roads have deteriorated beyond the optimum intervention point and increasing traffic volumes are accelerating the deterioration.

Following condition assessment of the road network, a comprehensive analysis has been carried out using Council's pavement management system to analyse and produce long term maintenance and renewal programs for Council's road assets. Council's pavement renewal activities are grouped under the following restoration and renewal programs.

Renewal program	Scope and description
Resurfacing	The resurfacing program comprises all those activities that are undertaken to provide water proofing of road pavements as well as to provide a smooth and durable ride surface.
Rehabilitation	Road rehabilitation programs focus on replacement of existing pavement and surfacing with an equivalent structure that is generally applicable for a long length of road. Typical rehabilitation treatments include: ▪ patching failed areas of pavement and applying structural overlay; ▪ insitu stabilisation of subgrade and pavement materials to restore structural integrity of road pavements; Projects on rehabilitation programs are ideally treated at the optimum intervention point so as to maximise return on investment.

Renewal program	Scope and description
Reconstruction	Road reconstruction program is primarily focused on the replacement of road pavements that have reached the end of their serviceable lives but the work may also include ancillary works such as kerb & gutter replacement, drainage works etc. The high capital cost of reconstruction usually yields a low benefit to cost ratio, particularly on lightly trafficked streets, where there is little savings in vehicle operating costs.

The resurfacing and rehabilitation programs focus on replacement of the pavement surface but also include repairs to the pavement. In keeping with Council's strategy for road maintenance, priority for road repair treatments such as rehabilitation and resurfacing is determined with the view to maximising return on Council's investment in the form of a reduction in Council's long term financial liabilities, reduction in vehicle operating or road user costs and extending pavement service lives.

In contrast, the priority selection system for road reconstruction works uses a risk minimisation framework to select and prioritise road pavements that have reached the end of their serviceable lives. The project ranking system gives weighted consideration to identified risk factors and all other things being equal, this method usually allocates highest priority to the more heavily trafficked roads as they represent greater risk and their repair yields greater savings in road user costs. This targeted approach that utilises condition of the asset in decision making helps Council to progressively reduce its infrastructure backlog.

The factors established to rank and prioritise road reconstruction projects are those that influence the probability of failure and those related to consequences of failure as shown below.

Asset category	Risk factors	
	Likelihood or probability factors	Severity or consequence factors
Roads	▪ **pavement condition** - poor pavement condition increases likelihood of accidents/injuries ▪ **proportion of heavy vehicles** - high HV proportion increases likelihood of pavement damage & requires adequate road geometry ▪ **accident history and potential** - previous accidents indicate design or construction deficiency and potential for reoccurrence ▪ **design deficiency** - implies high likelihood of poor performance and compromised safety	▪ **human & community imperatives** - human consequence increases with increase in traffic volumes or pedestrian usage ▪ **public transport route** - as above ▪ **economic benefits** - higher benefit to cost ratio yields greater savings in road user costs and maintenance costs

7.8 Enhancement and expansion plan

Several road enhancement and development works have been identified to address

capacity constraints or to meet development needs.

Growth related - subdivision developments

The need for major improvements to existing infrastructure has been identified by Council to support major residential and industrial release areas of Liverpool. While the provision of internal infrastructure will be developer responsibility, extensive improvements to existing road and transport related infrastructure required to support these developments remains Council responsibility. Funding for such infrastructure are provided by Council from S94 contributions and other sources of funding.

Council recently completed reconstruction and widening of Bernera Road and upgrade of trunk drainage system to facilitate a major industrial development. Reconstruction and widening of Kurrajong Road is currently underway to provide an essential link to a major residential release area at Carnes Hill.

Provision of transport infrastructure to support new developments in Middleton Grange, Edmondson Park and Pleasure Point includes construction of collector roads and enhancement of existing transport facilities.

Capacity driven developments

Council has also identified the need to widen and upgrade several of its key strategic links that provide a regional road function. Further, intersection upgrades have also been identified to address existing capacity constraints or accident black spots. Few examples are provided below with details contained in the expenditure forecast tables.

- widening and upgrades to Governor Macquarie Drive, which is a key regional road linking two primary state arterials comprising Newbridge Road and Hume Highway;
- provision of traffic signal upgrade at the intersection of Bigge, Pirie and Speed Street at Liverpool; and
- provision of a new roundabout at the intersection of Kurrajong Road and Old Kurrajong Road in Casula to improve performance and safety.

In April 2014, the Australian Government announced that Badgerys Creek will be the site for a Western Sydney airport. A major upgrade planned for Bringelly Road and Elizabeth Drive to provide easy access to the airport will create additional demand on the existing local, collector and regional roads, triggering for major upgrade.

7.9 Decommissioning and disposal plan

While there is currently no policy to close or dispose of roads within the Liverpool LGA, changing demand will be the primary cause of disposal of road assets and these will result from:

- new urban release that will alter the existing pattern of access and linkages;
- strategic programmes by the State or Federal Governments that will result in significant changes to land use patterns e.g. the Western Sydney Parklands is a major State Government initiative that aims to convert existing rural areas into parklands. Most

roads within the subject area will become redundant; and

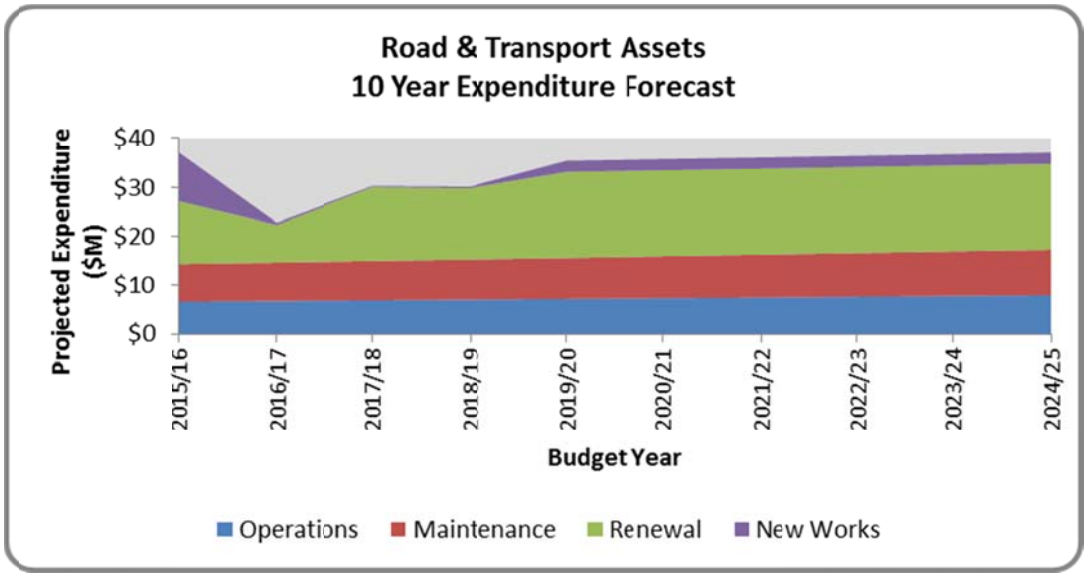
- strategic programmes of Council that will result in alterations to land use e.g. the Moorebank Voluntary Acquisition Scheme is Council's response to the significant flooding experienced by properties along Rickard Road and Arthur Street in Moorebank. Upon acquisition of all properties, the area will be converted to parklands at which point the internal roads will become redundant.

Road disposal costs will only be recognised in the 10 year plan once a management strategy is in place to deal with road pavement disposal.

7.10 Summary of projected financial expenditure

The following presents a summary of ten-year expenditure forecast for roads and transport assets.

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Asset Activity	$37,213	$22,760	$30,235	$30,099	$35,423	$35,756	$36,089	$36,422	$36,754	$37,087
Operations	$6,569	$6,711	$6,851	$6,991	$7,142	$7,294	$7,445	$7,597	$7,748	$7,900
Maintenance	$7,794	$7,964	$8,131	$8,299	$8,481	$8,662	$8,844	$9,025	$9,206	$9,388
Renewal	$12,812	$7,647	$15,029	$14,508	$17,500	$17,500	$17,500	$17,500	$17,500	$17,500
New Works	$10,038	$439	$224	$300	$2,300	$2,300	$2,300	$2,300	$2,300	$2,300



Predictive modelling undertaken during development of the Roads & Transport AMP showed that 2010-11 level of expenditure for road renewal works would need to be maintained for the foreseeable future to maintain the road network in its current condition and to arrest the decline in the condition of the overall road network across the LGA.

The rural road network, due to its advanced state of deterioration, will continue to decline unless a substantial boost in funding is provided to arrest this decline. However, these rural roads lie predominantly within the South West Growth Centre and the ensuing residential and commercial developments will ultimately see the full reconstruction, widening and upgrades to majority of the roads within this area. Alternative low cost strategies, to hold these rural roads in a reasonable condition until such time as full reconstruction can occur, are provided in the Roads & Transport Asset Management Plan.

Some of the key issues facing Council's road assets are:

- one of the major problems facing this Council is the ageing of its public infrastructure assets. Many roads and associated infrastructure built in the 1970s and 1980s, while delivered according to the standards of the time, are now approaching the end of their serviceable lives and require significant improvements and renewal to bring them up to current acceptable standards for the community;
- between 1995 and 2014 the road network grew by 36 per cent from 624 km to 853km in length, however, the overall condition of the road network continuously declined until recently. Therefore renewal funding has been increased to improve the road condition;
- the road network is expected to grow by another 150km or 20% over the next 10 years and with this growth comes the need for increased maintenance activities; and
- development in the rural areas is leading to increased traffic loadings unsuitable for the existing rural road pavements, which places additional pressure on already constrained maintenance budgets.

8 DRAINAGE AND FLOODPLAIN ASSETS

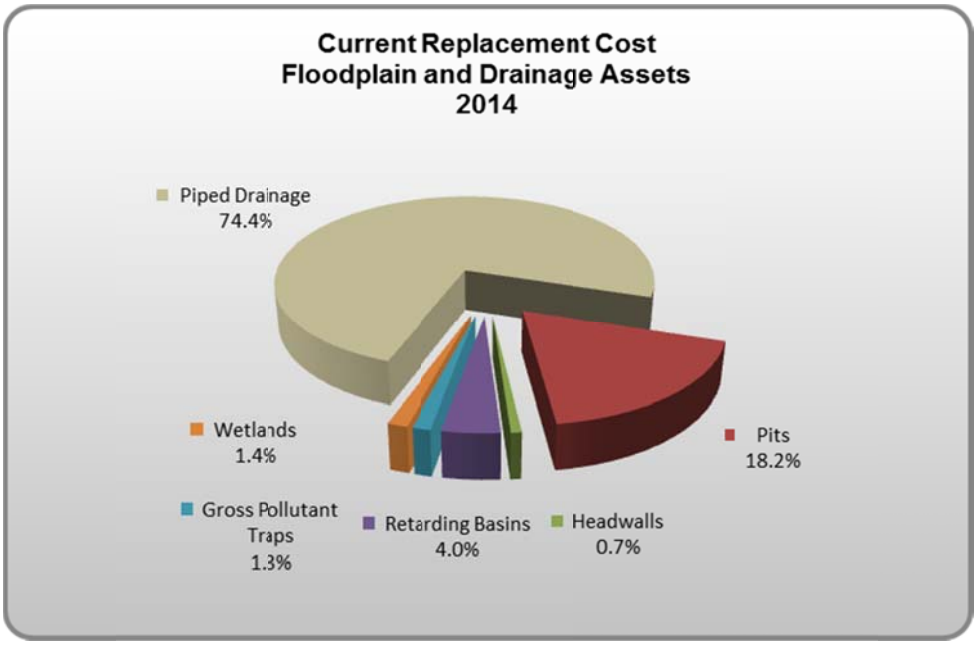
8.1 Drainage asset information and description

Council is responsible for the control and care of over 547km of piped drainage network and a range of associated drainage and flood management infrastructure, with a combined replacement cost of over $434 million.

The scope and value of Council's drainage and flood related infrastructure is shown below.

Drainage & Floodplain Assets	Quantity	Value ('000)
Piped Drainage	547 km	$322,540
Pits	22,667 No	$78,777
Headwalls	1275 No	$3,197
Retarding Basins	57	$17,187
Gross Pollutant Traps	114	$5,787
Wetlands	19 No	$6,001
TOTAL		**$433,489**

The following figure shows the makeup of all drainage and floodplain related infrastructure assets under the care and control of Liverpool City Council.



8.2 Condition and performance of drainage assets

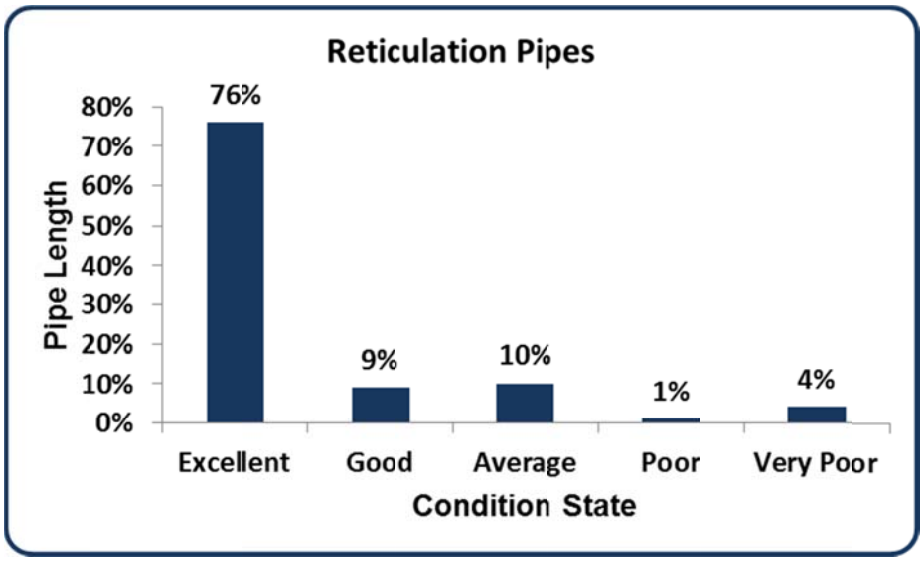
As with any other asset, performance of the drainage network over time is a function of its condition. Detailed knowledge of its existing condition is therefore necessary to establish realistic levels of service, treatment intervention levels and to develop responsive works programs within funding constraints.

Council in 2009 commenced a comprehensive inspection of its piped drainage network to assess its structural condition and hydraulic performance. The inspection, which uses a close circuit television camera (CCTV), is ongoing and its purpose is to provide Council with accurate condition data and digital imagery of its pipe network to enable:

- development of optimised maintenance and renewal programs;
- development of asset management plans; and
- valuation of stormwater drainage structures to meet OLG requirements.

While this method of collecting data is costly and time consuming, it is the only reliable means of collecting valuable information on assets that are predominantly located underground. It is expected that the entire drainage network will be completely surveyed and assessed over the next ten years.

The following graph presents average condition distribution of Council's piped drainage network based on inspection and assessment of 120km of the piped network.



Photos below show the various condition states of stormwater drainage pipes.

Excellent	Good	Average	Poor	Very poor

The following table provides a summary of condition and performance information for the entire drainage and floodplain assets. Detailed information on each of these assets including asset condition, current and target performance, required maintenance and renewal activities, and corresponding funding requirements is contained in the Drainage & Floodplain Assets Management Plan.

Drainage & Floodplain Assets	Proportion of assets in each of the following condition state				
	Excellent	Good	Average	Poor	Very Poor
Piped Drainage	76%	9%	10%	1%	4%
Pits	48%	43%	8%	1%	0%
Headwalls	5%	25%	58%	7%	5%
Retarding Basins	42%	44%	7%	6%	1%
Gross Pollutant Traps	73%	22%	5%	0%	0%
Wetlands	3%	72%	21%	4%	0%

The condition of drainage assets has improved in general in comparison to the conditions observed in 2009. For example condition of below average drainage assets has reduced from 11% in 2009 to only 5% in 2013. This is due to the increased renewal expenditure over the last few years and effective implementation of Council's asset management plan. Approximately 5% of the drainage pipes and 12% of headwalls are still at below average condition.

Inspections have identified a range of defects that, if unattended could affect long term performance of the piped drainage system. These defects include:

- pipe joint displacement - resulting from movements in surrounding soil or from poor compaction;
- multiple cracking & broken pipes - due to excessive loading or pipes of poor strength or incorrect classification;
- severe spalling, cracking and crushed pipes - from severe corrosion of reinforcement or excessive loading;
- root intrusion, heavy siltation & dumped litter - severe root intrusion can trap litter, debris and sediment and can also cause extensive cracking.
- other intrusions - such as utilities or unauthorised service connections resulting in protrusions that compromise structural integrity and trap debris thereby affecting hydraulic performance of pipes.

8.3 Level of service

For drainage and floodplain assets, the level of service is usually defined in terms of capacity of stormwater drainage systems, level of flood protection provided by flood management structures and quality of water reaching natural creeks and waterways. The following provides examples of levels of service characteristics for key drainage and

floodplain related assets that have been used to guide the development of maintenance and renewal programs:

Drainage & Floodplain Asset	Levels of service characteristics
Stormwater drainage systems	▪ drainage capacity and efficiency ▪ structural integrity of drainage structures ▪ level of flood protection provided to properties and roads ▪ safety - pedestrian and traffic
Gross pollutant traps	▪ water quality ▪ accessibility - for maintenance & cleaning ▪ safety - for operation and maintenance
Detention basins and wetlands	▪ structural integrity and adequacy ▪ flood retardation ▪ flood monitoring & warning ▪ quality of habitat and water body

The existing levels of service provided by Council's assets have been determined predominantly through condition surveys as well through a rigorous in-house consultation process which involved examination of historical patterns of complaints, defects, responsiveness and quality of repairs.

Similar process was used to develop desired levels of service and performance measurement processes. The gap identified between existing and desired service levels guided the development of asset management strategies and programmes to deliver the required level of service over the term of this Plan e.g. the proposed piped drainage rehabilitation and restoration programmes aim to progressively restore deteriorated pipe condition to satisfactory levels.

8.4 Management of risks associated with drainage assets

Council has implemented many management practices and procedures to identify and manage risks associated with the management and operation of Council's drainage and flood plain assets. These include:

- monitoring condition and performance of drainage assets to predict future performance and potential asset failures through systematic periodic inspections and condition assessments;
- undertaking comprehensive flood studies including developing and implementing LGA wide floodplain risk management plans to mitigate potential risks from both, main stream and overland flooding;
- renewing and upgrading assets to maintain service delivery;
- acquiring or constructing new assets to mitigate risks from flooding.

8.5 Lifecycle management plan for drainage assets

Unlike most other assets, because drainage assets are generally not subjected to dynamic loading, these assets if built properly and under appropriate conditions can remain in a satisfactory condition for extended periods of time. The following outlines all management options over the life of drainage assets, from creation to disposal, that are considered necessary to manage and operate the drainage network at the desired levels of service while optimising life cycle costs.

8.5.1. Operations and maintenance plan

The following lists typical operational activities for drainage assets, which are undertaken to ensure efficient operation and serviceability of these assets:

- ongoing CCTV inspection and condition assessment of drainage systems;
- litter removal from GPTs and piped drainage network;
- mowing and upkeep of flood retarding basins;
- ongoing monitoring and reporting of dam water levels; and
- surveillance and assessment of prescribed detention basins.

Most of the above routine operating activities are expected to continue into the future without any significant change and hence Council's drainage operating costs are not expected to be significantly impacted over the term of the plan. A significant component of the operating cost involves CCTV inspection and assessment of the piped drainage network. As this activity reaches completion around 2021, the operating cost can be expected to fall from 2022 onwards.

Drainage maintenance activities, on the other hand, represent the day-to-day works carried out on the asset itself to prevent asset failure or works undertaken to correct asset malfunctions and failures on an as required basis e.g. emergency pipe and pit repairs, removal of major root intrusion using robotic cutting tools, high pressure pipe jetting and major cleaning activities to preserve the performance and serviceability of drainage systems and limit the need for expensive rehabilitation treatments.

The 10 year financial forecast is based on maintaining the current level of operating and routine maintenance expenditure over the term of this plan, which are based on existing and adopted service level standards applied to existing and new assets.

8.5.2. Restoration and renewal plan

As stated previously, systematic condition surveys of drainage and floodplain related assets have provided valuable data to objectively determine its current condition and performance. This has enabled Council to proactively develop maintenance and renewal strategies and programmes that are responsive and cost effective. The inspections have identified the need for the following broad categories of drainage renewal and replacement activities, which are expected to improve hydraulic performance and significantly extend service lives:

- restoration of piped drainage system through relining of long lengths of existing deteriorated pipes. This trenchless method of pipe restoration method uses robotic techniques to apply a PVC liner within existing pipes to restore structural integrity and flow efficiency;
- restoration of piped drainage system through application of structural patches to isolated failures within pipes. Again, this trenchless method of pipe restoration method uses robotic techniques to apply polyurethane resin patches that provide long term structural enhancement and seals against root intrusion; and
- replacement of failed pipes that have deteriorated beyond economic repair.

To enable identified works to be delivered most efficiently, Council in February 2010 established long term contracts with a panel of contractors specialised in drainage rehabilitation works for ongoing maintenance and renewal of stormwater drainage pipes.

The priority selection system for restoration, renewal and replacement of drainage system is based on asset condition assessments and knowledge of other performance parameters including strategic location of pipes, flooding and safety.

8.5.3. Enhancement and expansion plan

Drainage enhancement and expansion works have been identified to address capacity constraints or to meet development needs.

Growth related - subdivision developments

The need for new drainage and flood management infrastructure as well as major improvements to several existing assets have been identified by Council to support the future residential and industrial release areas of Liverpool. Council recently acquired large detention basins at Elizabeth Hills and Len Waters Estate to facilitate residential subdivisions comprising over 900 lots and industrial development over 45ha at the former Hoxton Park Airport site in West Hoxton. The following outlines some of the major drainage related upgrades proposed:

- provision of flood retarding basins to facilitate over 6100 lot residential subdivision at Edmondson Park; and
- provision of a major trunk drainage system to facilitate a major industrial development comprising over a 270 ha site at Yarrunga in Prestons.

Capacity driven developments

Council has also identified the need to upgrade several of its drainage assets to improve current capacities and to alleviate flooding problems. Few examples are provided below with details contained in the expenditure forecast tables:

- provision of a major piped trunk drainage system within the Liverpool city centre to improve existing drainage capacities and to alleviate flooding experienced in frequent

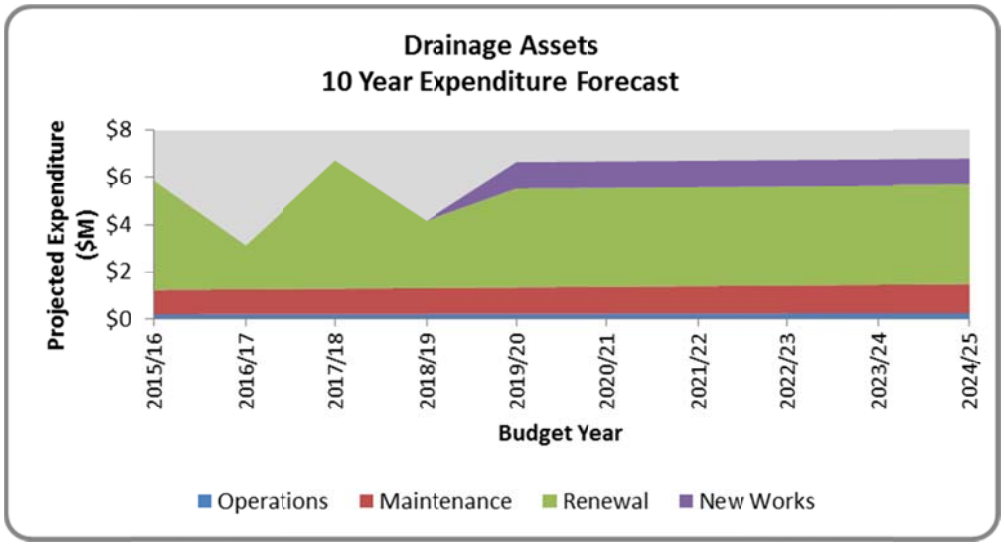
storms; and

- widening and realigning of Brickmakers Creek to enhance flow capacity and alleviate flooding in the northern CBD including flooding of major state highways including Hume Highway and Cumberland Highway and Elizabeth Drive.

8.6 Summary of projected financial expenditure

The following presents a summary of ten-year expenditure forecast for drainage and floodplain assets based on program of works attached in Appendix A.

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Asset Activity	$5,861	$3,129	$6,711	$4,166	$6,638	$6,666	$6,694	$6,722	$6,750	$6,778
Operations	$203	$208	$214	$219	$225	$230	$236	$242	$247	$253
Maintenance	$1,030	$1,051	$1,071	$1,092	$1,114	$1,136	$1,158	$1,181	$1,203	$1,225
Renewal	$4,628	$1,870	$5,426	$2,856	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200
New Works	$0	$0	$0	$0	$1,100	$1,100	$1,100	$1,100	$1,100	$1,100



As with roads, funding to be allocated towards the corresponding program of works will be determined each year when the annual budget is formulated and adopted by Council.

Council's Stormwater Management Service Charge, which generates approximately $1.2 million each year, has provided Council a sustainable funding source for its stormwater management program and this funding has enabled more enhanced maintenance and renewal programmes to be undertaken;

The following lists some of the key issues facing the management of Council's drainage assets:

- existing drainage system comprises predominantly underground pipes and pits, which can only be properly assessed using CCTV. This method of collecting data is costly and time consuming and only 10-15km of the piped network is able to be assessed each year. This means that condition of the entire drainage network will continue to be estimated from collected data for asset management and valuation purposes;
- inspections and assessments so far have shown a significant proportion of the drainage system is still at below average condition. Council's drainage renewal and rehabilitation program will continue to have challenges to arresting this decline;
- the drainage network and associated infrastructure is expected to grow by another 100 km or 18% over the period of this Plan and with this growth comes the need for increased operation and maintenance activities;
- The current initiatives towards water sensitive urban designs has introduced new types of assets and devices for stormwater quality improvement, which will require more structured and sometimes more intensive maintenance practices to be adopted;
- Council's voluntary property acquisition scheme, currently operating in Moorebank to mitigate adverse impacts of flooding from the Georges River, has not been progressing as anticipated, primarily due to a lack of interest from property owners to participate in the Scheme and funding constraints resulting in Council suspending the Scheme; and
- Four large flood detention basins are being built over the short to medium term to facilitate development within the Cabramatta Creek catchment and these basins place additional burden on Council resources due to stringent monitoring and surveillance requirements placed by the NSW Dam Safety Committee.

9 BUILDING MANAGEMENT PLAN

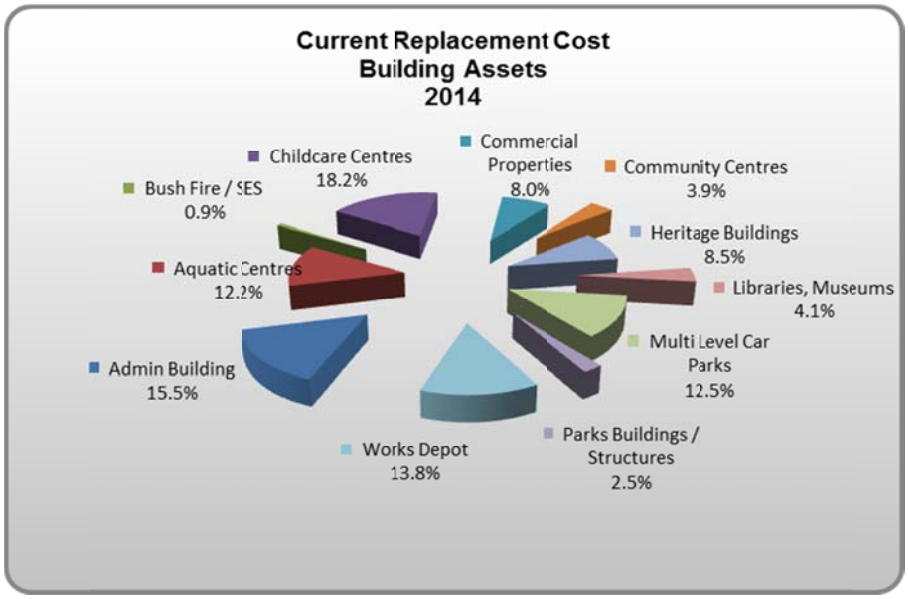
9.1 Building information and description

Council has in its ownership, care and control some 209 building assets covering its commercial, operational, community, recreational, cultural and heritage services, with a combined current replacement cost of over $278 million. The mix of buildings is significant with many of the buildings built in the late 50's and 60's and several specialised structures such as parking stations, large aquatic centres and heritage buildings.

The scope and value of Council's building related infrastructure is shown below.

Building Asset	Quantity	Value ('000)
Admin Building	1	$43,141
Aquatic Centres	6	$33,777
Bush Fire / SES	9	$2,409
Childcare Centres	10	$50,505
Commercial Properties	2	$22,245
Community Centres	38	$10,872
Heritage Buildings	14	$23,492
Libraries, Museums	3	$11,339
Multi Level Car Parks	2	$34,569
Parks Buildings / Structures	111	$6,844
Works Depot	13	$38,326
TOTAL		**$277,519**

The following figure shows the makeup of all building and structural assets under the care and control of Liverpool City Council.



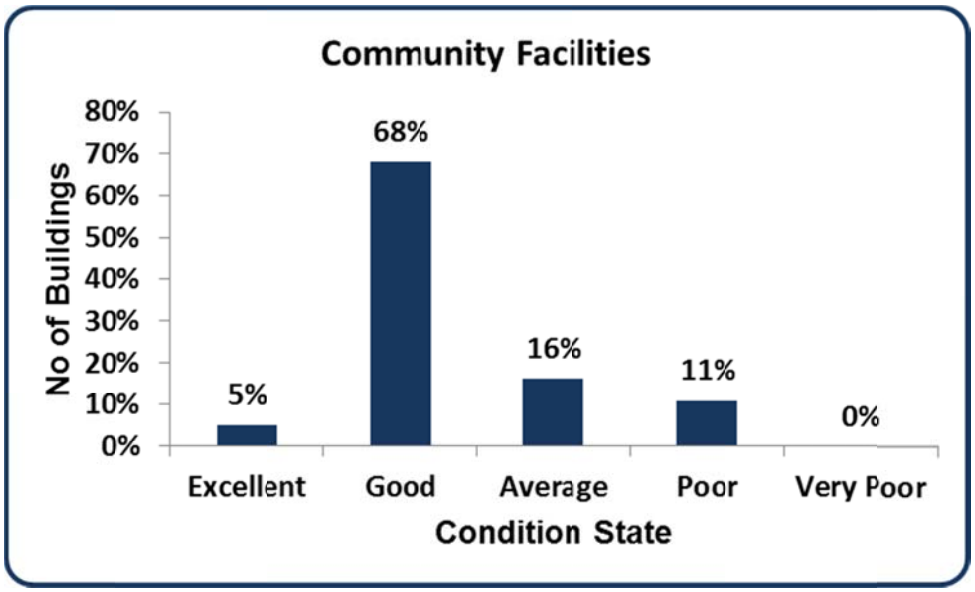
9.2 Condition and performance of building assets

A general inspection of building assets commenced in 2013 as part of ongoing inspections and condition surveys of Council assets. The surveys involved visual inspections and assessments to determine the general condition and suitability of all building facilities in view of its current usage. Further detail inspection of Council's entire Building portfolio has recently started with inspection of community facilities, childcare centres and sports amenity completed. A comprehensive capital works program and maintenance program is being developed based on this latest information. The information gathered will also enable to:

- development of asset management plans;
- rationalisation of building asset portfolio based on the current and future utilisation; and
- valuation of buildings as per requirements of the Office of Local Government.

Further data collection is underway to capture the condition of more specialised elements of the leisure centre buildings such as electrical, plumbing, essential services, security and air conditioning systems.

The following graph presents average condition distribution of Council's Community Facilities portfolio.



Photos below show the various condition states of building infrastructure.

Excellent	Good	Average	Poor	Very poor

A detailed condition assessment of Childcare Centres, Community Facilities and significant proportion of Parks Buildings has recently been completed. Building asset renewal program has been informed by this comprehensive condition information.

The following table provides a summary of condition and performance information for the entire building assets. Detailed information on each of these assets including asset condition, current and target performance, required maintenance and renewal activities, and corresponding funding requirements is contained in the Building Assets Management Plan.

Building Assets	Proportion of assets in each of the following condition state				
	Excellent	Good	Average	Poor	Very Poor
Admin Building	0%	0%	100%	0%	0%
Aquatic Centres	0%	100%	0%	0%	0%
Bush Fire / SES	22%	45%	11%	22%	0%
Childcare Centres	0%	89%	11%	0%	0%
Commercial Properties	50%	0%	50%	0%	0%
Community Centres	5%	68%	16%	11%	0%
Heritage Buildings	7%	43%	43%	7%	0%
Libraries, Museums	34%	33%	33%	0%	0%
Multi Level Car Parks	0%	50%	50%	0%	0%
Parks Buildings / Structures	13%	34%	45%	6%	2%
Works Depot	8%	8%	15%	69%	0%

As can be seen, a substantial proportion of the buildings are at Average or below Average condition overall and this has critical implications on the allocation of maintenance funding. The large proportion of the buildings in a Poor to Very Poor condition relate to secondary buildings or parts of buildings such as storage facilities and public toilets associated with sporting facilities, works depot and the fire services.

9.3 Level of service

The buildings asset management plan is based on providing acceptable, accessible and functional building assets to support the delivery of Council's services to the community. As with other asset classes, the existing levels of service provided by Council's building assets have been determined predominantly through condition surveys as well through a rigorous in-house consultation process which involved examination of historical patterns of complaints, defects, responsiveness and quality of repairs.

Similar process has been used to develop desired levels of service and performance measurement processes and has formed the basis for:

- prioritising future maintenance and renewal activities
- determining standard of new building assets and their functional features

- planning upgrade requirements for existing assets
- determining response times to requests for maintenance (e.g. leaky toilets)

Following analysis of service levels, this Plan documents:

- required financial resources over the short and the long-term to meet the target service levels
- required condition monitoring of building assets to manage the physical state and the service potential of the assets
- prioritisation mechanisms to enable Council to target funds more appropriately

9.4 Management of risks associated with building assets

An assessment of risks associated with service delivery from building assets has identified a range of potential risks to Council. The following management practices and procedures have been implemented to manage risks associated with the management and operation of Council's building assets:

- monitoring condition and performance of building assets to predict future performance and potential asset failures through systematic periodic inspections and condition assessments;
- undertaking regulatory inspections of essential services and utilities to ensure satisfactory performance of safety monitoring systems; and
- renewing and upgrading assets to maintain service delivery.

Council has also initiated to develop asset specific asset management plan of its critical building facilities such as leisure centres, community centres and childcare facilities. This will help Council to proactively manage these facilities and eliminate or reduce service interruptions.

9.5 Lifecycle management plan for building assets

The lifecycle management plan for buildings details how Council plans to manage and operate these assets at an acceptable level of service while optimising life cycle costs. Assets are created and acquired to deliver required Council services. These assets are operated and maintained throughout their useful life, and their performance and condition are monitored to ensure they deliver the necessary service. Over the life of the assets, there will come a point where the asset is no longer performing at a satisfactory level and may require rehabilitation to restore service life.

This Plan outlines a range of management activities that will be required over the long term to ensure the building assets continue to deliver the required services to acceptable levels.

9.5.1. Operations and maintenance plan

Maintenance of council buildings has traditionally been undertaken by various areas of

Council which has resulted in an ad hoc approach to building and facilities maintenance. This approach has also resulted in certain buildings not receiving adequate levels of maintenance at all and this is reflected in the overall condition of council's buildings.

Further, and in light of the overall average to poor condition of buildings, Council's maintenance approach has become more reactive responses rather than proactive programmed and preventative maintenance. This reactive approach to maintenance has meant that some buildings are left for lengthy periods without maintenance and in some cases left to gradually deteriorate to levels that are beyond rehabilitation.

In developing this asset management plan, Council has commenced a process to rationally allocate maintenance effort to individual buildings based on condition, functionality, usage and desired service levels. Council has also developed a range of intervention criteria for reactive responses as well as preventative actions.

The asset management plan for Council buildings also documents regular monitoring and inspection activities to enable:

- condition assessments for renewal planning
- updating of risk management plans
- updating of insurance for the entire building portfolio
- better understanding of standard of presentation and level of usage
- necessary modifications to programmed maintenance

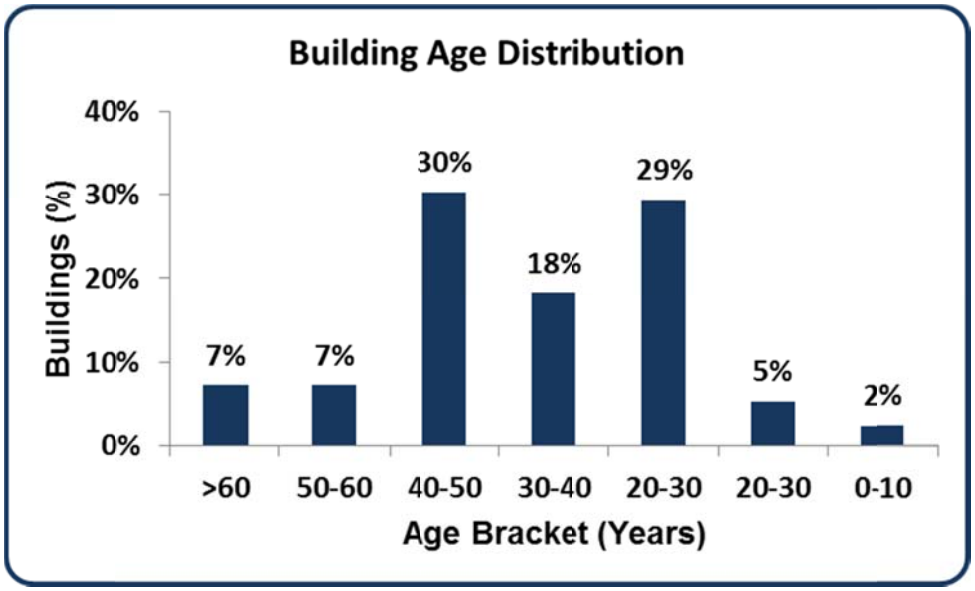
The long term forecasts for operational activities and expenditures have been developed based on projecting the current activities and cost over the next ten years. The maintenance forecasts at this stage, are based on written down value of the building portfolio. These forecasts will be improved as maintenance practices are improved and better information on required maintenance activities become available.

9.5.2. Restoration and renewal plan

As defined earlier, renewal activities and costs include major works that do not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential.

Buildings renewals are initially identified based on remaining useful life of the asset. Assets identified for renewal are inspected to verify the accuracy of its remaining life and to enable development of renewal strategy and estimates. Identified buildings are assessed against established service delivery priorities and ranked accordingly in Council's works program.

Asset renewals aim to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost. Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The age profile of Council's building assets is shown below.



Over 44% of Council's current building stock is 40 years or older. Further assessments of these buildings based on risk, maintenance and function of the building will need to be undertaken to determine appropriate response.

It should be noted that the age of the building is not the only factor that determines its functionality and performance. Timely intervention through a proactive maintenance program will, in most cases, extend the serviceable life of the building allowing it to continue to provide the desired level of service.

9.5.3. Enhancement and expansion plan

Several building enhancement programs have been identified to address the functionality and capacity of a number of existing buildings. The proposed enhancements will enable improved utilisation and better access to buildings.

Council has also identified the need to provide additional community facilities and a library in Carnes Hill and additional community facilities in Prestons to support growth projected within the western areas of Liverpool.

9.5.4. Decommissioning and disposal plan

Council presently does not have a strategy for the planned decommissioning and disposal of council buildings. However, changing demand for services resulting from the following will create a need for an asset disposal plan;

- introduction of new community facilities due to changes to usage patterns
- development of community hubs
- need to relocate community buildings closer to strong transport links or commercial centres to make facilities more accessible to the wider community

- merging community and sporting groups to maximise utilisation

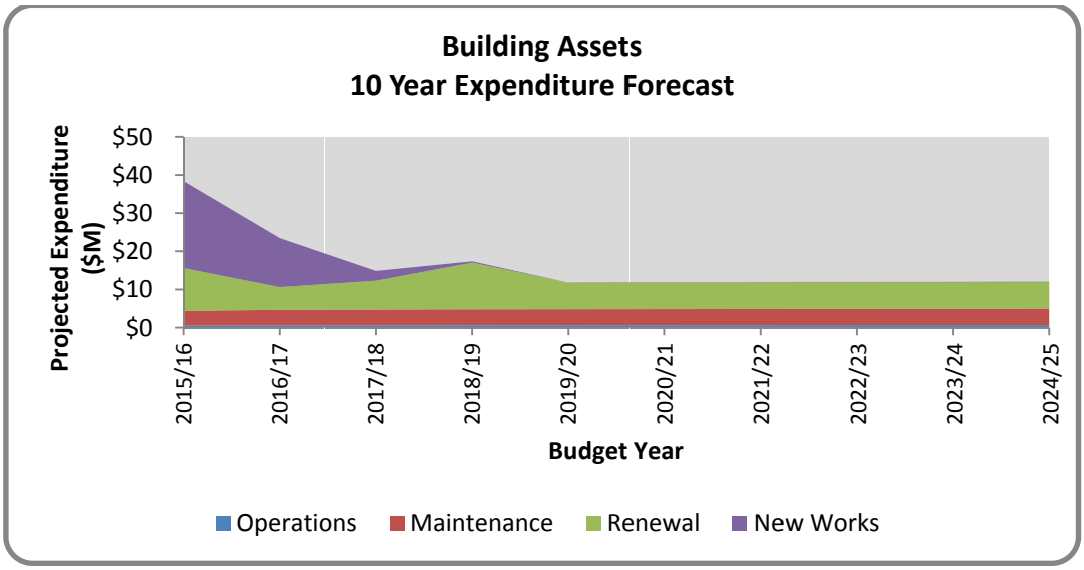
Council has begun to review the utilisation and service potential of its entire building portfolio. This review is expected to be completed by June 2015. Council may consider disposal and decommissioning of some of its building assets that are currently underutilised.

Asset disposal costs will only be recognised in the 10 year plan once a management strategy is in place for disposing and decommissioning of buildings.

9.6 Summary of projected financial expenditure

The following presents a summary of the ten-year expenditure forecast for building assets.

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Asset Activity	$38,378	$23,469	$14,880	$17,397	$11,818	$11,855	$11,893	$11,931	$11,969	$12,007
Operations	$562	$592	$603	$608	$613	$618	$623	$628	$634	$639
Maintenance	$3,868	$4,068	$4,134	$4,171	$4,204	$4,237	$4,270	$4,303	$4,336	$4,368
Renewal	$11,173	$5,979	$7,543	$12,277	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000
New Works	$22,776	$12,830	$2,600	$340	$0	$0	$0	$0	$0	$0



As can be seen, both operational and maintenance costs will stay relatively stable growing at approximately 3 to 4% annually over the next 10 years. The above average renewal costs in 2015/16 is due to major renewal works planned for Whitlam Leisure Centre and major refurbishment and renewal of Moore St Administrative Building. Similarly the increased renewal expenses for 2018/19 is for the planned redevelopment of Northumberland Car Park, renewal of CT Lewis building complex and renewal of Casula

Community centre.

The large increases in the projected expenditure on new works in the early part of the program relates to the planned construction of new community facility at Carnes Hill as well as the delivery of other community facilities within Prestons. New facilities will be funded from S94 contributions.

As with other asset classes, funding allocated for corresponding program of works, will be determined each year when the annual budget is formulated and adopted by Council. The following lists some of the key issues facing the management of Council's building assets:

- up to 25% of the building portfolio requires significant maintenance or renewal to restore serviceability;
- malicious damage to sports amenity buildings due to its location within reserves and inadequate surveillance require higher than normal maintenance;
- majority of Council's buildings do not generate any income and are unable to offset the spiralling cost of maintenance and renewal; and
- addition of new community facilities to existing deteriorating asset stock will place a significant burden on Council's financial resources.

10 PARKS AND OPEN SPACE ASSETS

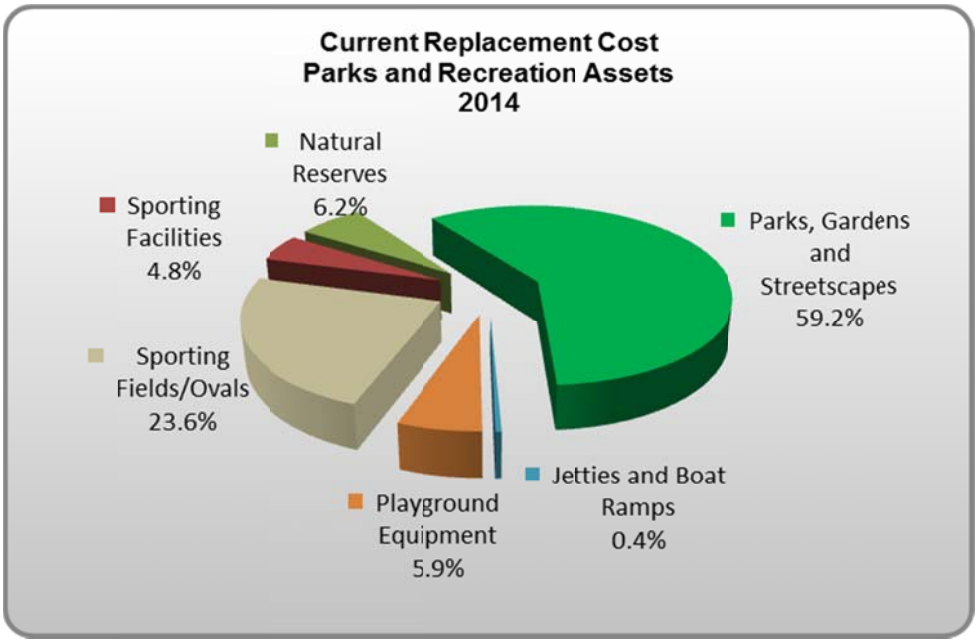
10.1 Information and description of parks & open space assets

Council manages a portfolio of 541 open space reserves, consisting of Regional, District or Local open space made up of active, passive and natural bush land. The portfolio includes 207 recreational and sporting facilities including netball courts, tennis courts, cricket nets, skate ramps and aquatic centres. These assets cover over 1400 hectares and have a combined replacement cost of over $149 million.

The scope and value of Council's parks and open space related infrastructure is shown below.

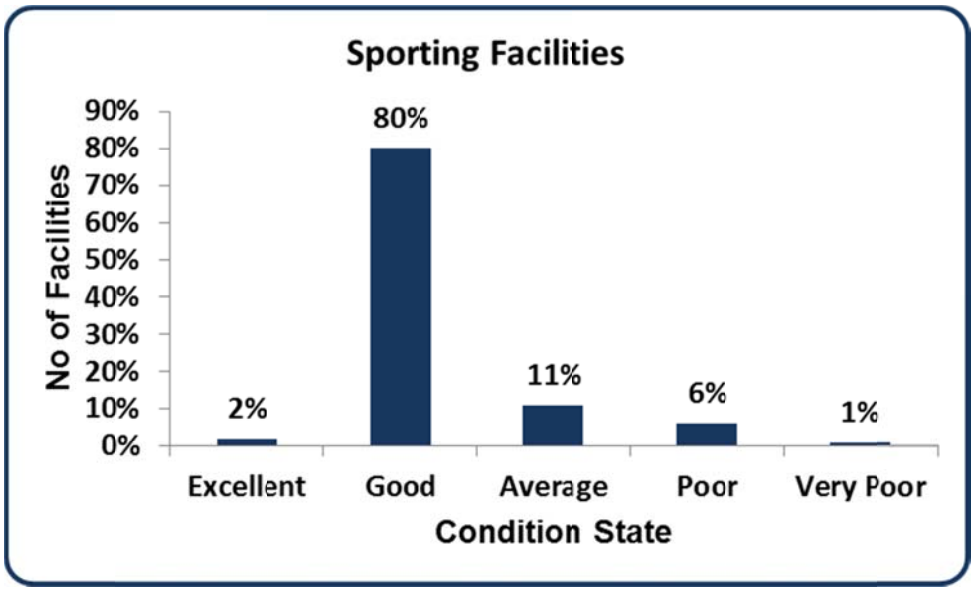
Parks & Open Space Asset	Quantity	Value ('000)
Sporting Fields/Ovals	92	$35,049
Sporting Facilities	115	$7,105
Natural Reserves	32	$9,217
Parks, Gardens and Streetscapes	509	$87,956
Jetties and Boat Ramps	6	$629
Playground Equipment	155	$8,712
TOTAL		**$148,668**

The following figure shows the makeup of all parks and open space related infrastructure assets under the care and control of Liverpool City Council.



10.2 Condition and performance of Council's parks & open space

Council undertakes annual condition audits of its playground related assets in accordance with Australian Standards and the following graph presents average condition distribution of Council's playground facilities in 2010.



Photos below show the various condition states of playground assets.

Excellent	Good	Average	Poor	Very poor

The following provides a summary of condition and performance information for some of Council's key open space assets. Detailed information on each of these assets including asset condition, current and target performance, required maintenance and renewal activities, and corresponding funding requirements is contained in the Parks and Open Space Asset Management Plan.

Parks & Recreation Assets	Proportion of assets in each of the following condition state				
	Excellent	Good	Average	Poor	Very Poor
Sporting Fields/Ovals	2%	80%	11%	6%	1%
Sporting Facilities	2%	80%	11%	6%	1%
Natural Reserves	5%	60%	28%	6%	1%
Parks, Gardens and Streetscapes	5%	60%	30%	4%	1%
Jetties and Boat Ramps	5%	60%	30%	4%	1%
Playground Equipment	4%	37%	41%	10%	8%

The above table shows that a substantial proportion of council's recreational assets are below Average condition overall and this has critical implications on the allocation of maintenance funding.

10.3 Level of service

The asset management plan for parks and open space assets is based on providing safe and functional assets to support the delivery of Council's services to the community. As with other asset classes, the existing levels of service provided by Council's parks and open space assets have been determined predominantly through condition surveys as well through a rigorous in-house consultation process which involved examination of historical patterns of complaints, defects, responsiveness and quality of repairs.

Similar process has been used to develop desired levels of service and performance measurement processes and has formed the basis for:

- prioritising future maintenance and renewal activities
- determining standard of new parks and open space assets and their functional features
- planning upgrade requirements for existing assets
- determining response times to requests for maintenance

Following analysis of service levels, this Plan documents:

- required financial resources over the short and the long-term to meet the target service levels
- required condition monitoring of parks and open space assets to manage the physical state and the service potential of the assets
- prioritisation mechanisms to enable Council to target funds more appropriately

10.4 Management of risks associated with parks & open space assets

An assessment of risks associated with service delivery from park assets has identified a range of potential risks to Council. The following management practices and procedures have been implemented to manage risks associated with the management and operation

of Council's parks and open space assets:

- monitoring condition and performance of parks and open space assets to predict future performance and potential asset failures through systematic periodic inspections and condition assessments;
- undertaking regulatory inspections of playgrounds and associated assets to ensure satisfactory performance; and
- renewing and upgrading assets to maintain service delivery.

10.5 Lifecycle management plan for parks & open space assets

The lifecycle management plan for parks and open space details how Council plans to manage and operate these assets at an acceptable level of service while optimising life cycle costs. Assets are created and acquired to deliver required Council services. These assets are operated and maintained throughout their useful life, and their performance and condition are monitored to ensure they deliver the necessary service. Over the life of the assets, there will come a point where the asset is no longer performing at a satisfactory level and may require rehabilitation to restore service life.

This Plan outlines a range of management activities that will be required over the long term to ensure that parks and open space assets continue to deliver the required services to acceptable levels.

10.5.1. Operations and maintenance plan

Operational activities for open space assets include ongoing inspections, condition assessments. A major component of the operations expenditure comprises utility and lighting charges.

Routine maintenance activities comprise a mixture of planned and unplanned works, which include:

- mowing of Council's large number of parks and open space
- response to repairs resulting from vandalism
- intensive maintenance following high levels of seasonal use

These activities and costs are projected to grow in line with growth of Council's asset base.

10.5.2. Restoration and renewal plan

Renewal of park assets is initially identified based on remaining useful life of the asset. Assets identified for renewal are inspected to verify the accuracy of its remaining life and to enable development of renewal scope and estimate. Identified park assets are assessed against established service delivery priorities and other performance criteria and ranked accordingly in Council's works program. Typical renewal activities for park assets include:

- programmed replacement of playground equipment
- replacement of flood lighting to sporting field and facilities
- replacement and refurbishment of sports courts and sports grounds

Asset renewals aim to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost. Projected future renewal expenditures are forecast to increase over time as the asset stock ages.

10.5.3. Enhancement and expansion plan

Several park and open space enhancements and upgrades have been identified to meet changing demand and to improve functionality and utilisation of a number of council's recreation facilities.

The proposed enhancements will increase the aesthetic appeal as well as safety of the identified open space assets. The typical activities will include:

- provision and upgrading of irrigation systems to green areas
- provision of floodlighting to sports fields to reduce risk of injury
- playground upgrades to address safety issues

In addition to upgrades to existing facilities, Council has also identified the need for additional recreational services and community infrastructure in Carnes Hill and Prestons to meet the increasing demand in the new release areas of Liverpool.

10.5.4. Decommissioning and disposal plan

Council presently does not have a strategy for the planned decommissioning and disposal of council's parks and open space assets. However, asset condition and changing demand for services, particularly from the following, will create a need for an asset disposal plan;

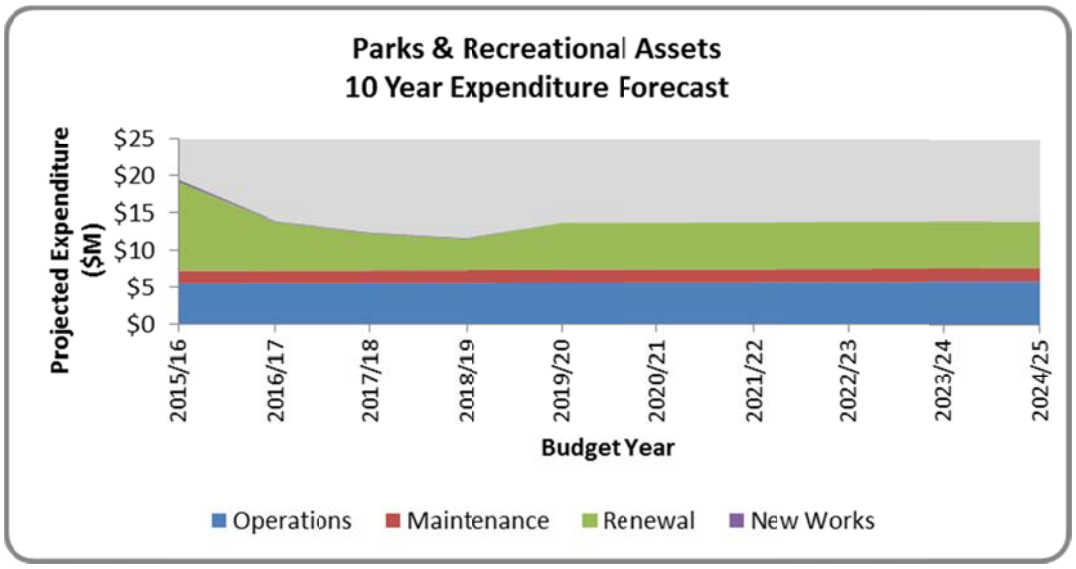
- changing demographics resulting in altered usage patterns
- development of community hubs
- merging community and sporting groups to maximise utilisation

Asset disposal costs will be recognised in the 10 year plan once a management strategy is in place for disposing and decommissioning of parks and open space assets.

10.6 Summary of projected financial expenditure

The following presents a summary of ten-year expenditure forecast for parks and open space assets based on program of works attached in Appendix A.

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Asset Activity	**$19,508**	**$15,448**	**$12,437**	**$14,682**	**$13,732**	**$13,761**	**$13,797**	**$13,888**	**$13,870**	**$13,850**
Operations	$5,545	$5,579	$5,613	$5,647	$5,678	$5,708	$5,738	$5,769	$5,799	$5,829
Maintenance	$1,707	$1,718	$1,728	$1,739	$1,748	$1,758	$1,767	$1,777	$1,786	$1,795
Renewal	$11,951	$8,045	$4,989	$7,193	$6,306	$6,295	$6,291	$6,343	$6,285	$6,225
New Works	$306	$106	$106	$103	$0	$0	$0	$0	$0	$0



As with other asset classes, funding allocated for corresponding program of works will be determined each year when the annual budget is formulated and adopted by Council. From the graph it can be seen that:

- The large increases in the projected expenditure in the early part of the program relates to the planned reconstruction of Macquarie Mall and upgrade of Bigge Park;
- With the exception of sports fields, which charge a small lease fee, the majority of Council's parks do not generate income and are unable to offset the long term cost of maintenance and renewal; and
- The continual growth and development of new open space facilities when added to existing deteriorating recreation infrastructure will place a significant burden on Council's future financial resources.

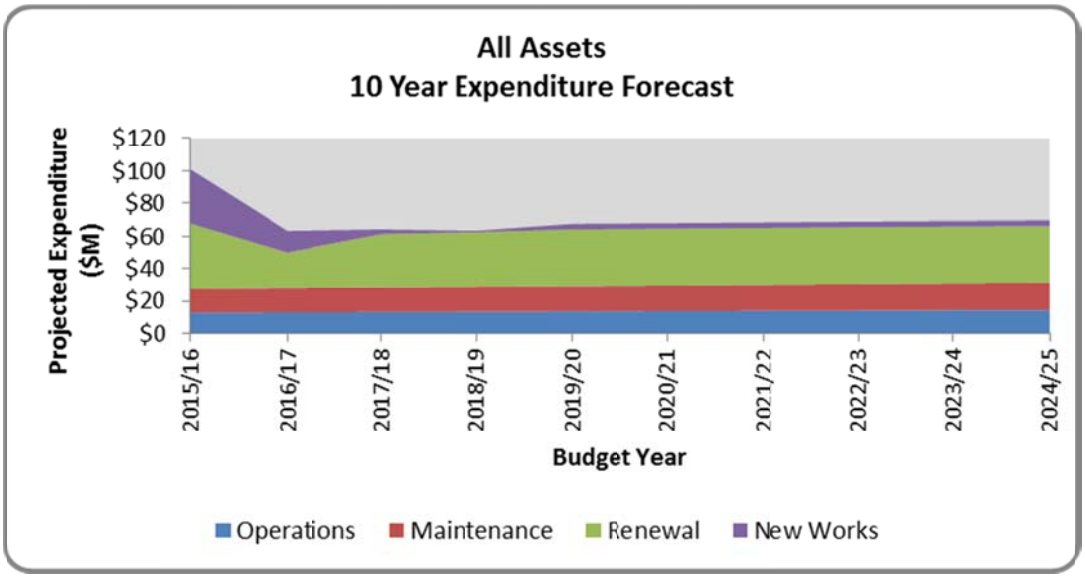
11. FINANCIAL FORECASTS

This section outlines the long term financial requirements resulting from all the information presented in the previous sections of this asset management plan and is based on expenditure forecast for each of the individual asset groups contained in Sections 6 to 10.

11.1 Ten year financial forecast

The ten-year financial projections are shown below for planned operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). A detailed program of capital works for all assets is attached as Appendix A.

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Asset Activity	$100,960	$64,806	$64,262	$66,344	$67,611	$68,039	$68,473	$68,963	$69,344	$69,722
Operations	$12,879	$13,091	$13,280	$13,465	$13,658	$13,850	$14,043	$14,236	$14,428	$14,621
Maintenance	$14,399	$14,799	$15,065	$15,301	$15,547	$15,793	$16,039	$16,285	$16,531	$16,777
Renewal	$40,638	$24,541	$32,988	$36,834	$35,006	$34,995	$34,991	$35,043	$34,985	$34,925
New Works	$33,119	$13,375	$2,930	$743	$3,400	$3,400	$3,400	$3,400	$3,400	$3,400



Council has prioritised its required renewal programs based on asset condition, public safety and risk, community expectation and strategic importance. Funding strategy has been developed to minimise or eliminate funding gaps. This has enabled Council to achieve infrastructure sustainability and service management benchmark ratios being discussed in the next chapter. Therefore, as can be seen from the table below, there will be no funding gaps between the projected annual renewal requirements and budget allocation from 2015/16 onwards.

All assets renewal funding gap

Budget Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1	2	3	4	5	6	7	8	9	10
	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000
All Asset renewal gap	$1,720	$1,500	$0	$0	$0	$0	$0	$0	$0	$0
Projected Renewal (AMP)	$16,400	$17,600	$40,563	$23,541	$32,988	$36,834	$35,006	$34,995	$34,991	$35,043
Planned Renewal (Budget)	$14,680	$16,100	$40,563	$23,541	$32,988	$36,834	$35,006	$34,995	$34,991	$35,043

Note that all costs exclude inflation and GST and are shown in current 2014/15 dollar values.

Some of the key features of the above financial projections are:

- operations and maintenance expenditures will generally increase in line with increases to Council's asset base to meet residential growth;
- road operation and maintenance expenditures are also projected to increase as a result of advanced state of pavement deterioration and the need to undertake more enhanced maintenance to maintain serviceability;
- building maintenance and renewal expenditures are projected to increase significantly as a result of an ageing portfolio;
- depreciation expenses, while expected to be significant, have not been included in this expenditure forecast. However, the relevant depreciation estimates will be included in the long term financial plan;
- renewal expenditures are based on maintaining adopted levels of service over the term of the Plan. Priority projects are selected each year to closely resemble the forecast depreciation expenses; and
- the expenditure forecasts for S94 funded New Works include only those works that have been identified and scoped for delivery in the early parts of the ten-year program. The timing and scope of remaining new works under this program is currently not known with high levels of certainty and have not been included in this Plan.

In addition, $30 million of new assets are expected to be vested per year with Council, a total of $304 million over the next 10 years. As a consequence, the total asset replacement cost is expected to increase over the period of the Plan from $1,956 million to over $2,260 million.

A commensurate increase in depreciation expense is projected as a result of increases to Council's asset base from donated assets.

11.2 Funding Strategy

Projected expenditures are to be funded from general funds, external grants, subsidies, S94 contributions and external borrowings in the years as may be required. The funding

strategy is detailed in the Council's long term financial plan.

11.3 Asset valuation

Asset values are forecast to increase as additional assets are added to the asset stock from construction, acquisition and from assets constructed by land developers and others and donated to Council. Council's civil infrastructure assets has been revalued as at 30 June 2015 using "fair value" methodology in accordance with provisions with Australian Accounting Standards, AASB 116 Property Plant & Equipment, issued in July 2004. Council's building assets were revalued in 2013.

The detailed valuation and valuation methodology are contained in an internal document titled 'Infrastructure Asset Valuation - Guidelines & Methodology, January 2015' and is filed as Trim 011871.2010.

11.4 Key assumptions made in financial forecasts

This section details the key assumptions made in presenting the information contained in this 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 are:

- all expenditure is stated in dollar values as at June 2015 with no allowance made for inflation over the 10-year planning period;
- renewal and replacement costs have been established based on historical costs and current construction rates for prioritised projects;
- all capital costs are inclusive of internal charges but exclude other overheads and direct charges;
- continuation of the current rate and pattern of urban development; and
- continuation of the Stormwater Management Service Charge.

The most significant potential changes to the financial projections shown will result from the factors below:

- assumptions have been made regarding the useful lives and remaining lives of the assets based on current knowledge and experience and historical trends. These will be progressively reviewed and the accuracy improved based on real time assessments of asset deterioration;
- changes in the desired level of service and service standards from those identified in this Plan;
- changes to rate of growth used in forecasting demand for new assets;
- any increases to electricity and street light maintenance charges imposed by the electricity supply authorities will impact on roads operations cost; and

- changes to cost of construction materials.

12 INFRASTRUCTURE SUSTAINABILITY AND SERVICE MANAGEMENT

12.1 Background

The NSW Government has a vision to rebuild our State and deliver a strong future for the people of NSW. To have a strong future, NSW needs strong Councils providing the services and infrastructure that communities need. Liverpool Council plays an important role in this mission by identifying smarter and sustainable ways to meet the current and future infrastructure needs of the communities within LGA. This will ensure that Council is fit for the effective and efficient management of the future challenges and opportunities.

For Councils to meet the service and infrastructure needs of their communities they need to be financially sustainable. The NSW Treasury Corporation defined a financially sustainable Council as one that, over the long term, is able to generate sufficient funds to provide the level and scope of services and infrastructure, agreed with its community through the Integrated Planning & Reporting process.

Liverpool Council has developed its long term financial plan based on the current and future infrastructure needs of the community as identified through community strategic planning process. Council's asset creation, maintenance and renewal program has been developed using the right mix of revenue, borrowings and the Government grants.

12.2 Infrastructure Backlog Ratio

As of 30 June 2014, Council's costs to bring assets to satisfactory condition has been estimated to be $62.9M. One of the main reasons for the reduction of this cost compared to the previous year is due to the significant improvement in the condition of Council's road that assets that represent 56% value of Council's infrastructure and building asset base. For example only 9% of the road assets are in condition 4 or 5 compared to 15% reported previous year.

Council has significantly increased the renewal funding in 2015/16 and onwards to further reduce this infrastructure backlog. With increased renewal funding, targeted renewal program based on modern asset management principles and effective asset maintenance strategy, Council aims to gradually reduce this backlog to below $32.0M by 2018/19 as shown in the forecast table below. This will reduce Council's infrastructure backlog to less than 2% of fair value by 2018/19.

	Financial Year										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Infrastructure Backlog Ratio	5.2%	3.9%	2.9%	2.9%	2.3%	1.9%	1.3%	0.7%	0.7%	0.7%	0.6%
Infrastructure Backlog ($M)	$62.9	$60.2	$46.9	$46.9	$38.2	$32.0	$22.1	$12.2	$12.2	$12.2	$12.2
Estimated WDV ($M)	$1,204	$1,527	$1,602	$1,640	$1,676	$1,714	$1,752	$1,790	$1,828	$1,865	$1,902

Analysis of Council's asset values in various asset conditions indicate that current rate of assets moving from Condition 3 to condition 4 each year is approximately $24.4M. Approximately 47% of this asset will contribute towards the backlog. Similarly, approximately $5.8M worth of asset move from Condition 4 to Condition 5 of which 28% contribute towards backlog. This gives Council's total incremental backlog to be approximately $13.1M. Therefore any renewal funding beyond $13.1M will assist in reducing current infrastructure backlog. Future reduction in backlog is estimated based on this principle. From 2020/21 when the backlog reduced to well below 0.7%, Council's ongoing renewal funding to match the annual depreciation will improve either level of service or condition of assets better than 3.

12.3 Building and Asset Renewal Ratio

Council spent more than $25M in renewal of its aging infrastructure in 2013/14 which is 85% of its overall estimated annual depreciation. Councils was focused on the design of Council's key strategic new projects such as Carns Hill, Macquarie Mall and Bigge Park as well as the construction of Bernera Road and Kurrajong Road in 2014/15. As can be seen from the table below, the renewal fund is significantly increased for 2015/16 and onwards. Council has planned its future renewal expenses in line with its projected depreciation expenses so that the long term average of building and asset renewal ratio remains above 100%. The table below also shows Councils long term renewal ratio forecast.

	Financial Year										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Renewal Ratio	0.85	0.57	1.39	0.79	1.10	1.22	1.14	1.13	1.12	1.11	1.09
Annual Depreciation ($M)	$30.0	$28.5	$29.2	$29.6	$30.0	$30.3	$30.6	$31.0	$31.3	$31.7	$32.1
Renewal Budget ($M)	$25.4	$16.1	$40.6	$23.5	$33.0	$36.8	$35.0	$35.0	$35.0	$35.0	$35.0

12.4 Asset Maintenance Ratio

Council has a history of substantial investment in asset maintenance with overall maintenance expenses generally exceeding the required maintenance expenses across all class of assets. Council has estimated required maintenance cost based on required ongoing maintenance activities over the life of an asset to achieve minimum of its design useful life. The table below shows Council's asset maintenance ratio performance on last financial year and projected ratio for the next 10 years based on the required maintenance expenses and allocated maintenance budget.

	Financial Year										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Maintenance Ratio	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
Required Maintenance (AMP, $M)	$13.5	$13.5	$14.4	$14.8	$15.1	$15.3	$15.5	$15.8	$16.0	$16.3	$16.5
Maintenance Budget ($M)	$14.7	$15.1	$16.4	$16.8	$17.2	$17.6	$18.0	$18.5	$19.1	$19.2	$19.8

Council's forecasted maintenance budget exceeds the required maintenance expenditure for the next 10 years achieving the asset maintenance ratio above 100%.

Appendix C provides further details on calculation of infrastructure sustainability and service management performance ratios. Detailed analysis of the ratios including forecast of annual operation and maintenance expenses required to provide agreed level of service is included in TRIM 086466.2015.

13 ASSET MANAGEMENT PRACTICES & IMPROVEMENTS

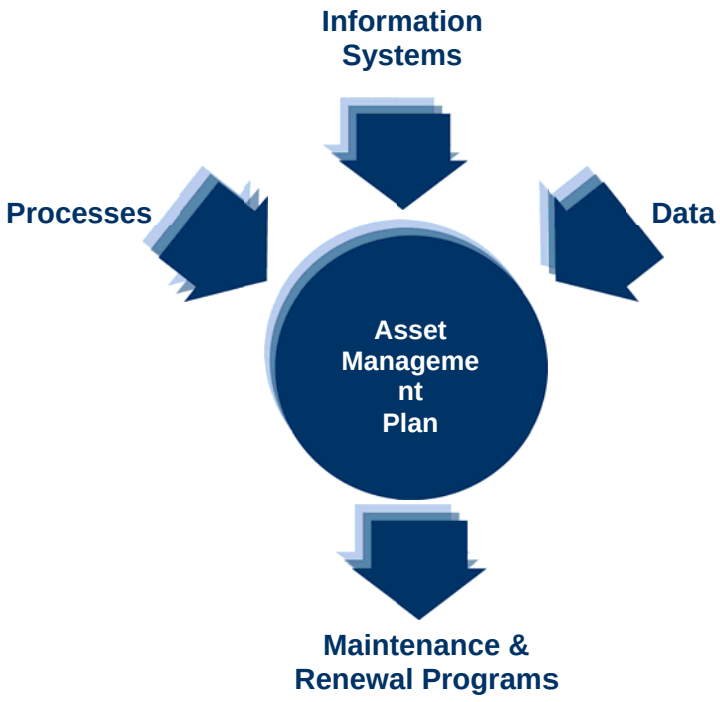
13.1 Overview

Council's Asset Management Strategy identifies improvements and makes recommendations in areas where opportunities exist to improve the systems and processes for greater effectiveness. It also outlines a monitoring and review process for the asset management plan. These improvements are discussed below and can be found in the Asset Improvement Plan part of the Asset Management Strategy.

13.2 Asset Management Practices

The key asset management practices needed to support good asset management in an organisation can be grouped into three broad areas and are illustrated below:

- processes - the necessary business processes, analysis and evaluation techniques needed for life cycle asset management;
- information systems - the information support systems that support the above processes and which store and manipulate asset data;
- data - up to date and accurate asset data which should be available for manipulation by information systems to support decision-making.



Processes

The following table shows the state of current business processes within Council and possible future improvements.

Process	Current business practice	Desired business practice
1. Asset handover	A fully documented handover process for all newly constructed and upgraded assets was implemented in 2007, however, take up of the process hasn't been satisfactory.	Reintroduce handover process with appropriate trainings and briefings to increase take up.
2. Asset knowledge	A process of comprehensive asset surveys initiated in 2007 has enabled existing asset registers and databases to be improved to refine the quality of condition data, assessments and valuations.	Continue asset surveys in accordance with adopted timetable.
3. Asset management planning	Asset management ad hoc and reactive.	Require an integrated and a whole of Council approach to the management of all infrastructure assets.
4. Long term financial planning (LTFP)	Long term expenditure forecasts are being based on consideration of asset conditions and service levels.	LTFP to be linked to sound AMPs enabling annual and long term budgets to be driven by objectively identified service levels and asset renewal priorities.
5. Asset valuation	Council's assets have been revalued using "fair value" methodology in accordance with the Accounting Standards.	Continue revaluation of all roads & transport assets at 3 to 5 year intervals.
6. Budget planning process	Council has a structured budget planning process - both long term and annual budgeting.	The AMP and LTFP will enable better justification for program funding.
7. Capital works planning & delivery	Council has structured processes for the planning and delivery of projects & programs.	Systems and processes to be reviewed for currency and relevance.
8. Condition assessment	Process in place for regular asset inspections and condition assessments by trained personnel.	Process satisfactory.

Process	Current business practice	Desired business practice
9. Demand management	Council has started to rationalise and optimise the usage of its facilities. Current and future demands of infrastructure and facilities assets are being determined from strategic planning, transportation strategies growth drivers.	Future revisions of this plan to include complete strategies to manage demand for new assets, based on a comprehensive understanding of community needs for services and assets. Forecasting techniques for demand for new as well as upgrades to existing assets to be improved.
10. Financial asset register	Currently two separate asset registers are maintained - engineering register for inventory & condition and financial register for inventory, valuation and depreciation.	Corporate and central asset management system required, which should include systems and processes for data collection, storage and analysis, and should support decision-making about optimal use of resources - process underway to implement an AMS.
11. Levels of service planning	A basic level of service level planning has been undertaken to identify service level targets based on industry standards, legislation, codes etc.	Levels of service need to be understood in terms of real community needs & expectations also, which will be developed through community consultations.
12. Maintenance planning & delivery	Asset maintenance activities mostly reactive.	Availability of better asset condition data provides opportunities for a more proactive approach to maintenance planning.
13. Risk management	Council has implemented many management practices and procedures to identify and manage risks associated with providing services from infrastructure assets.	Future revisions of this plan will move toward comprehensive risk management documentation in accordance with Australian Standard for Risk Management
14. Asset rationalisation & disposal	Process is ad hoc and reactive without a formal process.	Document procedures for the disposal of infrastructure assets.

Information systems

The following table defines the status of information systems used and considered essential to support asset management at Council.

Information system	Current business system	Desired business system
1. Asset management system	A computerised pavement management system (SMEC-PMS) is in place for the management of Council's road pavements.	A corporate asset management system is being implemented.

Information system	Current business system	Desired business system
2. Asset register	Comprehensive asset registers are available for all infrastructure assets.	AMS will enable more efficient update of asset registers to include new assets, sales, disposal etc.
3. Maintenance management system	Paper based systems exist for maintenance works, however, no structured system exists beyond basic record keeping for maintenance planning and delivery.	Future enhancements to AMS will enable better record keeping on maintenance activities, costs, quantities, which will enable improved maintenance planning and decision making.
4. Financial management system	Technology One provides the platform for corporate wide management of budgets and expenditures. Program and project level budget control is achieved through MS Project and MS Excel based cost management systems.	Current system considered satisfactory.
5. Geographic information systems	Corporate wide aerial mapping system available.	Opportunities exist for integration with AMS for better decision making.
6. Optimised decision making	PMS is used for optimising investment in pavement renewal and rehabilitation works.	AMS will offer opportunities to optimise investment in other asset categories through multi-criteria modelling and analysis.
7. Project management systems	Structured PM systems exist within the A&CW area only.	Opportunities exist to expand the system to all areas involved in delivery of projects.
8. Risk management	Risk management approach undertaken to select and prioritise asset maintenance & renewal activities.	Broader level and corporate wide risk assessment to be undertaken with future revisions of this Plan.
9. System integration	Integration of existing relevant systems will be a critical aspect of the implementation of a corporate asset management system.	
10. Reporting systems	Existing system of multiple progress and status reporting on asset management activities is repetitive and unproductive.	A more efficient Corporate reporting system to be investigated that consolidates and streamlines all reporting.

Asset data

The following table identifies information needs for Council to support effective asset management.

Asset data	Current business requirements	Desired business requirements
1. Asset categorisation & hierarchy	Suitable asset classification system exists, which is generally based on accounting standards and serves both, financial and asset management needs.	Procedure satisfactory.
2. Maintenance data	Information on maintenance activities and cost not readily available due to lack of structured cost management system for maintenance.	Need comprehensive understanding of costs of service to enable meaningful consultation on service levels.
3. Condition data	Sufficient asset condition data and knowledge exists to enable proper asset management and financial planning.	Procedure satisfactory.
4. Performance & capacity data	Significant information is now available regarding existing asset performance and capacity.	Current performance also needs to be understood from customer perspective and this will be identified through community engagement
5. Asset age and useful lives	Asset creation dates have been assumed in most cases and useful lives are generally based on industry standards.	Use of condition assessments to continually reassess RUL for improved valuation and asset management.

13.3 Asset Management Improvements

Improving the management of Council's assets will be a continual and ongoing process. Following an assessment of current practices and processes with respect to the management of Council's infrastructure assets, the following key improvements to existing systems and processes have been identified for greater asset management effectiveness. These improvements are documented

Asset management system

A structured and formalised system that takes a systematic approach to the planning, programming and implementing the wide range of activities associated with assets is critical for the effective management of Council's infrastructure assets. A proper asset management system should include systems and processes for data collection, storage and analysis, and should support decision-making about optimal use of resources for the operation, maintenance, rehabilitation, upgrading and reconstruction of infrastructure assets. Any system should be accessible to all personnel involved in the inspection, maintenance and overall management of Council's assets. This will ensure availability of the most up-to-date information for decision-making and maintenance planning.

Council is currently implementing corporate asset management system, which is expected

to be completed by June 2015.

Demand management

Demand management strategies provide alternatives to the creation of new assets in order to meet demand. Objective of demand management is to actively seek to modify customer demands for service in such a way that utilisation of existing assets is maximised and demand for new assets is deferred or reduced. This requires a comprehensive understanding of community need for services and assets. Future revisions of this plan will include complete strategies to manage demand for new assets.

Risk management

Council has adopted an Enterprise Risk Management Policy in December 2014 which provides the basis for Council's risk management approach and establishes the risk management responsibilities of Council in accordance with Australian Standard for Risk Management, AS/NZS ISO 31000:2009.

In line with Councils risk management approach outlined in its Enterprise Risk Management Policy and Strategy, a comprehensive risk management documentation based on Australian Standard for Risk Management, AS/NZS ISO 31000:2009 will be developed as part of future review of Council's Asset Management Documentation.

Levels of service

As stated in Section 3.3, numerous methodologies have been adopted to inform this asset management plan with respect to desired levels of service for Council's infrastructure assets. However, a more targeted community consultation is required to develop a more accurate understanding of both current and future needs and expectations of the community on desired infrastructure standards, costs and options.

The service levels and performance measures determined through this process will be incorporated in the future updates of this Plan.

Maintenance practices

Over the past few years there has been a shift in focus from reactive responses to a more proactive approach to the planning and implementation of infrastructure maintenance activities, however, with the availability of better asset data, there are prospects for further improvements to overall and coordinated maintenance planning and implementation.

14 REFERENCES

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iv). National Asset Management Strategy Committee, *NAMS.PLUS - An Online Guided Pathway to Implementation of Asset Management Planning,* http://www.namsplus.org.au

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15 APPENDICES

Appendix A - Long term expenditure forecasts

Appendix B - Levels of service tables

Appendix C – Infrastructure Sustainability and Service Management Ratios

Service Level Table - Roads in Liverpool City Centre					Appendix B1
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
Condition	▪ CBD roads will have a smooth surface that provides a satisfactory ride quality. ▪ The CBD road network will be maintained in a good condition, on average.	▪ Network condition surveys.	▪ 100% network condition surveys conducted every three years.	▪ Full network condition survey completed in March 2013.	Include budget provision in LTFP to facilitate regular surveys
			▪ 90% of CBD road length has roughness of ≤110 NAASRA counts. ▪ Average CBD network roughness of between 80 & 100 NAASRA counts. ▪ Average CBD network pavement condition rating ≤2 (PCI range 6.01 to 8.0)	▪ 58% is ≤110. ▪ Max. Roughness = 378 ▪ Ave. Roughness = 120 ▪ Average condition = 2 (PCI = 6.6)	Use condition assessment and network modelling to identify maintenance and renewal activities to achieve targets.
		▪ Routine maintenance patrols.	▪ 100% of CBD network patrolled & reported every three months.	▪ 100% of road network patrolled & reported every three months.	Continue current inspection frequency.
		▪ No. of complaints about ride quality.	▪ Less than 20 per year.	▪ 19 complaints in 2009	
	▪ Responsiveness in repair of potholes & localised failures.	▪ No. of complaints about potholes/failures.	▪ Less than 35 per year.	▪ 33 complaints in 2009	
		▪ Response time to repair potholes/failures.	▪ 100% of afterhours emergency situations are made safe within 4 hours. ▪ 100% of all other situations are made safe within 2 working days. ▪ 75% of all situations are permanently repaired within 30	▪ 100% of afterhours emergency situations are made safe within 4 hours. ▪ 75% of all other situations are made safe within 2 working days. ▪ 50% of all situations are permanently repaired within 30	

Service Level Table - Roads in Liverpool City Centre					Appendix B1
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
			working days.	working days.	
	▪ CBD roads are free of litter &debris	▪ Mechanical Road Sweeping Program	▪ 100% of network is swept daily - 7 days per week	▪ 100% of network is swept daily - 7 days per week.	Maintain existing frequency.
Function	▪ Meet user requirements for width, accessibility, alignment & travel time.	▪ Compliance with design standards for current traffic including cyclists, parking, buses.	▪ 100% of new roads are compliant with design standards.	▪ 100% of new roads are compliant with design standards.	
		▪ Intersection performance of Council roads.	▪ 80% have a minimum Level of Service (LOS) C	▪ 85% have LOS C or better	
		▪ Availability of car parking	▪ 85% usage	▪ 90-100 % utilised	Implement CBD Parking Strategy
Safety	▪ Provide adequate signage & line marking.	▪ No. of complaints about signage & line marking.	▪ Less than 25 per year per 100 km of road.	▪ 30 in 2014	
	▪ Ensure suitability of street lighting levels.	▪ No. of complaints about lighting. ▪ Compliance with street lighting standards.	▪ Less than 10 per year per 100 km of road. ▪ 100% of new & upgraded roads are compliant with street lighting standards.	▪ 5 in 2014 ▪ 100% of new & upgraded roads are compliant with street lighting standards.	Review lighting requirements as part of planning for streetscape improvement works
	▪ Provide adequate pedestrian safety.	▪ Condition survey of laneways.	▪ Nil potholes (trip hazards)	▪ Reactive maintenance	Use condition assessment and network modelling to identify maintenance and renewal activities to achieve targets.
	▪ Road alignment meets user requirements.	▪ Geometric design standards.	▪ 100% conformance by 2020.		

Service Level Table - Stormwater Drainage System — Appendix B2

Key Performance Indicator	Service Level Characteristic	Performance Measurement Process	Target Performance	Current Performance	Required Actions
Condition	▪ Pipe drainage systems will have sound structural condition to enable effective drainage.	▪ CCTV inspection and condition assessment of piped drainage system.	▪ Inspect 10% of 30 years or older pipes annually via a CCTV inspection program.	▪ 5% of piped systems are inspected annually via CCTV inspection program. ▪ 85% of surveyed pipes are in good condition (condition 1 & 2).	▪ Continue CCTV inspection, renewal and restoration of drainage systems. ▪ Develop risk based program to undertake above works prior to structural failure.
	▪ All inlet and outlet structures to be structurally sound	▪ Visual inspection of all drainage structures and head walls ▪ Customer complaints	▪ Inspect 25% of pits and headwalls annually. ▪ Pipes, pits and headwalls condition rating ≤ 2 (minor degrade but serviceable). ▪ Adequate erosion protection works at all outlet structures.	▪ 25% of headwalls and 25% of pits are inspected annually ▪ 88% of surveyed headwalls are in above average condition. ▪ 91% of surveyed pits are in good condition.	▪ Develop risk based program to undertake works prior to structural failure. ▪ Erosion protection works being undertaken under annual capital works program (ongoing)..
Function	▪ Pipes meet drainage capacity requirements. ▪ Properties are free from flooding for up to 1 in 5 year ARI storm events. ▪ Major roads are trafficable for up to 1 in 5 year ARI storm events.	▪ Number of property flooding complaints per year. ▪ Traffic disruptions and road closure due to flooding. ▪ CCTV inspection to identify blockage. ▪ Overland Flow Path mapping to identify	▪ Properties are free from flooding for up to 1 in 5 year ARI storm events. ▪ Major roads are trafficable for up to 1 in 5 year ARI storm events.. ▪ CBD area is free from flooding for up to 1 in 20 year ARI storm events.	▪ 12 complaints in 2014. ▪ No record of Major road closure. ▪ CBD area was significantly affected by flooding. ▪ Blockages have been identified through CCTV inspection.	▪ Identify flood affected areas from overland flow path maps and undertake drainage capacity analysis of hot spot areas. ▪ Develop risk based priority works program for drainage upgrade works. ▪ Undertake drainage

Service Level Table - Stormwater Drainage System					Appendix B2
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
		potential flooding area			upgrade works. ▪ Overland flow path mapping will be undertaken in 2015.

Service Level Table - Community facilities					Appendix B3
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
Condition	▪ Councils assets are maintained in sound condition to meet the communities needs	▪ Annual inspection and condition rating of 50% of the building asset network (by value) / yr	▪ 80% of Councils Building Assets are maintained to condition level 3 or better	▪ 88% of Councils Building Assets are maintained to condition level 3 or better	▪ Implement inspection regime and initiate planned maintenance and renewal program
Safety	▪ Ensure the safety and security of parks infrastructure	▪ Ongoing risk auditing on park infrastructure.	▪ 80% of infrastructure assessed in good condition or better.	▪ Annual playground audits ▪ 82% of infrastructure assessed in good condition or better	▪ Implement inspection regime for remaining asset category.
Responsiveness	▪ Response to maintenance requests	▪ Reduction in maintenance requests as compared to previous year	▪ 85% of maintenance requests actioned within a 7 day turnaround	▪ Not measured	▪ Development of a monthly reporting system
Availability	▪ Provision of functional and accessible community facilities	▪ User survey measuring quality of the facilities provided	▪ Building accessibility is provided to 100% of the community	▪ Ranked higher (3.8) than the satisfaction benchmark (3.6) .Micromex 2013.	▪ Audit of building against accessibility standard AS 1428
Safety	▪ Compliance with building and fire regulations	▪ Inspection and testing of essential services	▪ Issue of essential service performance compliance certification	▪ Annual fire safety statement	▪ Annual contract for the inspection, testing and maintenance of buildings essential services
Function	▪ Facility meets user's needs and availability.	▪ Council's annual community satisfaction survey to measure % of people satisfied with the functionality of the facility	▪ 90% of survey respondents consider the functionality of the facilities satisfactory or better.	▪ Measured as per results of the Micromex survey.	▪ Include this indicator in community surveys to assess satisfaction levels
Quality	▪ Provide buildings that are clean and provide adequate environmental comfort for users	▪ Council's annual community satisfaction survey.	▪ All significant building issues are identified and mitigated where possible	▪ Not measured	▪ Annual audits of the buildings and associated plant and equipment for operational

Service Level Table - Community facilities					Appendix B3
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
					performance

Service Level Table - Park assets					Appendix B4
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
Condition	▪ All parks assets will meet condition standards defined by park hierarchy and Australian Standards	▪ Annual condition audits and surveys	▪ 70% of parks assessed in good condition or better	▪ 65% of parks assessed in good condition or better.	▪ Implement inspection regime. ▪ Initiate planned maintenance and renewal program
Safety	▪ Ensure the safety and security of parks infrastructure	▪ Numbers of hazards identified and remedied within performance guidelines. ▪ Public liability claims.	▪ 80% of infrastructure assessed in good condition or better.	▪ Annual playground audits. ▪ 41% of parks assessed in good condition or better.	▪ Implement inspection regime for remaining asset category.
	▪ Provide safe facilities, free from hazards	▪ Numbers of hazards identified and remedied within performance guidelines. ▪ Public liability claims.	▪ Fewer than 5 reported accidents per year. ▪ Appropriate action on all hazards	▪ Quantity measure through Customer requests	▪ Development of an efficient method to prioritise actions and track safety performance.
Function	▪ Parks facilities are available that meet community demand	▪ Council's annual community satisfaction survey to measure % of people satisfied with level of service.	▪ The gap between Importance and satisfaction is reduced as per the Miromex survey	▪ Measured as per results of the Miromex survey	▪ Include this indicator in community surveys to assess satisfaction levels
Responsiveness	▪ Timely response to customer enquiries and requests	▪ No. of complaints	▪ 90% of requests actioned within the customer request service standard.	▪ Not measured	▪ Coordinate monthly performance report for Park and Recreation
Quality	▪ Provide high quality park facilities	▪ Council's annual community satisfaction survey.	▪ The gap between Importance and satisfaction is reduced as per the Miromex survey	▪ Ranked lower (3.5) than the satisfaction benchmark (3.7) .Micromex 2013.	▪ Include this indicator in community surveys to assess satisfaction levels
Availability	▪ Provision of appropriate levels of	▪ Community survey to measure satisfaction	▪ 80% of community are satisfied with the	▪ Not measured	▪ Include this indicator in community surveys to

Service Level Table - Park assets					Appendix B4
Key Performance Indicator	**Service Level Characteristic**	**Performance Measurement Process**	**Target Performance**	**Current Performance**	**Required Actions**
	park assets	with facilities and distance to them	availability of park assets		assess satisfaction levels

Infrastructure Sustainability and Service Management Appendix C1