

# Storm-water Asset Management Plan 2019-2023



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# Executive Summary

The objective of infrastructure asset management is to ensure that assets provide their required levels of services in the most cost effective manner. This Asset Management Plan focuses on the management of the Queanbeyan-Palerang Regional Council's (QPRC) Stormwater assets. This plan specifies the requirements for effective management of this asset group and the corresponding financial implications. This plan is reviewed annually, with a formal update completed every 4 years.

Effective asset management of the Queanbeyan-Palerang's Stormwater assets will contribute towards achievement of the following strategic objectives<sup>1</sup> :

- Maintenance of Stormwater assets to allow equitable collection and safe (public health & environment) discharging of stormwater to the creek/river/lake for communities across our region; and
- Advocacy for QPRC's Integrated Water Cycle Management (IWCM) & Water Sensitive Urban Design (WSUD).

The contribution towards achievement of these strategic goals and asset management objectives will be achieved by:

- Stakeholder consultation to establish and confirm service standards.
- A regular program of inspections and monitoring activities to assess asset condition and performance.
- Application of a systematic analysis to prioritise renewals and establish the most cost effective works programs.
- Continuously reviewing and improving the quality of Asset Management practices.

QPRC's Stormwater assets comprises of:

- Pipes/mains
- Surface Drains;
- Pits / Manholes;
- Retarding Basins;
- Gross Pollutant Traps (GPTs).

These assets have a current replacement cost of \$135 Million.<sup>2</sup>

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<sup>1</sup> QPRC Community Strategic Plan 2018-2028

<sup>2</sup> QPRC Annual Financial Statements 30 June 2019

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# 1 Introduction

## 1.1 Background

The Queanbeyan-Palerang Regional Council's Stormwater assets provide valuable services to the area enabling a safe and reliable stormwater collection & discharge network to provide flood protection and prevention as well as pollution control. These assets must be properly maintained and developed to continue to provide adequate service and benefits for generations in the future. This plan demonstrates Council's responsive management of Stormwater assets (and services provided from these assets), compliance with regulatory requirements and proposed funding requirements to provide the required levels of service.

This plan demonstrates how Council will achieve this outcome by applying the principles of responsible Asset Management Planning, the object of which is to:

'Deliver the required level of service to existing and future customers in the most cost effective way'.

The key elements of infrastructure asset management are<sup>3</sup> :

- Taking a life cycle approach.
- Developing cost-effective management strategies for the long term.
- Providing a defined level of service and monitoring performance.
- Understanding and meeting the demands of growth through demand management and infrastructure investment.
- Managing risks associated with asset failures.
- Sustainable use of physical resources.
- Continuous improvement in asset management practices.

## 1.2 Assets included in this Plan

Stormwater assets are only incorporated in this plan. Information of other asset classes should be referred to the relevant Asset Management Plan.

Under the Stormwater, the following Asset Categories are included in this AMP:

- Pipes/mains
- Surface Drains;
- Pits / Manholes;
- Retarding basins
- Gross Pollutant Traps (GPTs) and
- Other structure (Headwall/ End-wall, Energy Dissipation Device, Overflow Structure, Swale etc.)

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<sup>3</sup> IPWEA, 'International Infrastructure Management Manual', 2015

Stormwater assets covered in this plan only include drainage assets located within urban areas. Some of these assets classes/categories also pertain to other AMPs however, only assets assigned to service of stormwater are included in this AMP.

### **1.3 Strategic and Corporate Goals**

This Stormwater AMP has been prepared under the direction of Council's vision, mission, goals and objectives and is to read with Council's Asset Management Policy, Asset Strategy and the following associated planning documents:

- QPRC Community Strategic Plan 2018 – 28;
- QPRC Delivery Program 2018 – 21;
- QPRC Operational Plan 2019 – 2020;
- QPRC Strategic Directions;
- Bungendore Flood Risk and Management Plan – 2017;
- Braidwood Flood Risk and Management Plan – 2014;
- Local Strategic Planning statement 2020.

### **1.4 Legislative Requirements**

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

- Local Government Act 1993;
- Local Government Amendment (Planning and Reporting) Act 2009;
- Environment Planning and Assessment Act 1979;
- Civil Liability Act 2002;
- Public Health Act 1991;
- Roads Act 1993;
- Water Management Act 2000;
- Environmental Offences & Penalties Act 1989;
- Protection of the Environment Operations Act 1989;
- Work Health & Safety Act 2011;
- Dangerous goods Act 1975;
- Contaminated Land Management Act 1997;

This is not a full and comprehensive list of all legislative requirements Council is required to adhere to in maintaining infrastructure assets. QPRC will exercise its duty in compliance with all legislation to the best of its ability.

## 2 Levels of Service

### 2.1 Community Level of Service

Community levels of service relate to the service outcomes that the community wants in terms of quality, reliability, responsiveness, amenity and safety.

In August 2018, a custom service survey was conducted to:

- Assess resident satisfaction; and
- Better understand the community's priorities with regard to service and facilities.

The results of the survey have been utilised as an indicator of community satisfaction with QPRC's core Stormwater assets. The overall satisfaction rating for Stormwater was 3.69 out of 5.

QPRC when benched marked against eight other similar sized NSW Council's received an overall satisfaction rating of 3.5/5 compared to an average satisfaction rating of 3.2/5. The bench marking also indicated QPRC was performing at the top end of community satisfaction for all services provided.

Currently, QPRC do not have a formal process to measure community levels of service. This plan proposes using customer service requests to indicate performance against levels of service. Performance indicators have not been set within this plan and will be required to be reviewed as better data is provided.

The anticipated community outcomes for transportation assets are:

- An integrated and well maintained transport network via roads and shared paths to support the local community and promote activity
- Council ensures developed infrastructure is constructed in compliance with assessed standards and is 'fit for purpose'
- Safe and well maintained built facilities meet the cultural, recreational tourism and community service needs of all ages and abilities in our community
- Plan and implement effective infrastructure to assist maximising experiences for the Shires' visitors.



Table 1: Community Level of service

Service Attribute	Service Objective	Performance Measure Process	Current Performance	Expected position in 10 years based on current LTFP
<b>Stormwater collection, treatment and disposal systems</b>				
Quality	Provide an efficient method of collection and treatment/disposal of stormwater from urban areas	Stormwater systems are adequately maintained and regularly cleaned	Data note available	All Stormwater is maintained and cleaned in accordance to maintenance schedules
Function	Ensure stormwater systems meets community expectations	Community satisfaction survey	3.9	> 4.0
Capacity/ Utilisation	Provide a stormwater system that minimises the risk of minor flooding occurring due to undersized networks	Systems designed to handle agreed minimum storm events without creating nuisance flooding	System hydraulics to be further assessed	100% compliant with designed storm events as determined through hydraulic modelling

## 2.2 Technical Standards

### 2.2.1 Design and Construction Standards

The standard of construction of new Stormwater assets and for enhancing, renewing and refurbishing existing Stormwater assets will be in accordance with the standards adopted by Council in any particular instance.

Reference shall be made to the latest version of the Australian Rainfall and Runoff to determine design requirements for stormwater assets.

### 2.2.2 Maintenance Standards

Levels of service for maintenance of the Stormwater assets take into account:

- Industry standards<sup>4</sup>;
- The need to provide a Stormwater network that is safe (public health & environment) to collect & discharge stormwater for all users; and
- Ability of Council to fund maintenance activities.

The technical standards for maintenance activities need to be defined in the QPRC Stormwater Maintenance Plan which is still to be developed as on-going improvements to QPRC maintenance practices.

**Table 2 - Maintenance Standards**

<b>Asset Feature</b>	<b>Functional Requirements of Maintenance</b>
Stormwater	<ul style="list-style-type: none"> <li>• Provide safe (public health &amp; environment) &amp; adequate network facility to collect &amp; discharge stormwater.</li> <li>• Minimise risk of flooding due to blockages and sediment buildup</li> </ul>

The following matters have also been taken into account with development of the maintenance standards:

- Routine maintenance standards – routine maintenance, repair functions and standards, intervention levels and actions are based on risk assessment for a particular asset element. Standards vary across the network in line with relevant risk factors such as location to waterways, capacity of the network, the susceptibility of assets to deterioration, the cost effectiveness of repairs, and competing priorities for funding.
- Repair and maintenance works – routine maintenance and repair works are undertaken within a specified reasonable period of time having regard to intervention action priorities, and to specified standards.
- Temporary measures – temporary works to be undertaken to reduce the risk of an incident until such time as maintenance or repair works can be completed. Response times and measures (e.g. warning signs, flashing lights, safety-barriers) are determined based on the risk to safety and the type, volume and nature of failure.
- Emergency works – works required to be undertaken immediately outside routine works programs to ensure the safety of the public as a result of emergency incidents. Emergency works include traffic incident management, major equipment failure, power failure, floods, storms and spillages.

The Stormwater Maintenance Plan (To be Development) will detail all planned and routine maintenance schedules that are in place for this asset class. As QPRC transitions towards a more proactive maintenance planning position, this document will be amended with additional inspections and routine maintenance work orders documented. It is envisaged that proactive

<sup>4</sup> IPWEA NSW Guidelines and Practice Notes

inspections and maintenance activities will be delivered through Councils Enterprise Asset Management system's Mobility platform.

## **3 Future Demand**

### **3.1 Demand Driver**

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices and environmental awareness.

### **3.2 Population Change**

Queanbeyan-Palerang's population has been growing consistently around 2% per annum in previous years and in 2018 was 59,499. Over the life of this asset management plan, population is expected to continue to grow at a rate of 1.8% per annum.

Population growth will primarily occur in residential developments in Googong, South Jerrabomberra and Bungendore. This increase in population and dwelling growth will contribute to increased demand on the existing Stormwater assets requirements.

### **3.3 New Technology**

Changes in technology may enable QPRC to better understand asset life and operation and maintenance requirements for its Stormwater assets.

New technologies that may impact the Stormwater assets include:

- Better telemetry data being available and linking hydraulic models to provide real time operational information;
- Better and more reliable instrumentation to monitor system operation;
- Changes in water sensitive urban device designs and understanding;
- Advancement in stormwater reuse opportunities; and
- Advances in WHS and assets used within the stormwater system.

### **3.4 Climate Change Adaptability and Sustainability**

Planning asset management activities will need to make allowances for potential climate change conditions. Some of the predicted impacts of climate change include:

- Lower annual rainfall – decrease in small stormwater flushing and cleansing occurring
- Higher average temperatures – may increase odour issues
- More severe weather incidents (average v extreme conditions) – may increase risk of overflows occurring and networks becoming undersized.

It is anticipated that stormwater assets may need to be augmented in future do cope with increased variability in weather patterns to enable acceptable levels of service to be maintained.

### **3.5 New Stormwater assets from growth**

Significant urban expansion has been planned over the life of this asset management plan that includes:

- Continued development of the Googong Township area
- Development of South Jerrabomberra/Tralelee area
- Development of Bungendore

The new Stormwater assets will be acquired from developer contributions and will be delivered directly by Council to ensure the new developments are linked to existing infrastructure. Major Stormwater planned to be delivered by Council includes

- South Bungendore Drainage - Ellenton to Molonglo St, Stormwater Improvement Program, Bungendore Flood Plain Works
- Braidwood Drainage Improvement Program
- Queanbeyan Stormwater Improvement Plan

Details of assets to be created have not been fully developed and the plans provide a program of work that may be needed into the future.

Additional assets will increase the obligation of ongoing maintenance & renewal costs.

Projected additional assets & their maintenance/renewal costs are summarised in section 4.

### **3.6 Demand Management**

QPRC's Asset Strategy outlines the following objectives that address demand drivers and align with cross border and regional infrastructure strategies and spatial asset planning.

- Manage asset backlog & risk
- Support connection of communities and health of the community, local economy and environment
- Sustainability cater for population growth and integrational equity
- Integrate with cross border infrastructure and align with regional infrastructure strategies
- Establish affordable and acceptable standards, including intervention levels, gifted assets from developments
- Plan assets spatially taking a corridor/network approach; and to analyse condition and failure.

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

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures<sup>5</sup>. Examples of non-asset solutions include providing services from existing infrastructure such as new stormwater re-use options and stormwater harvesting.

### **3.7 Asset Program to meet Demand**

The new assets required to meet growth will be acquired as “Gifted” assets through developer lead asset creation and through construction of assets through Council’s capital works program. Assets required for the demand projections also include enhancement of existing assets, such as road widening, sealing of unsealed roads and alterations of intersections to cater for increased demands without impacting the agreed levels of service requirements.

Often, stormwater assets will be created as a result of other infrastructure works being undertaken and determining the extent of future works is uncertain.

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<sup>5</sup> IPWEA, 2011. IIMM. Table 3.4.1

## 4 Lifecycle Management

This section outlines asset performance and condition information, and uses Asset Management principles to develop broad strategies and works programs to achieve the required service standards.

It presents an analysis of the available information and the life cycle management plans covering the three key work activities to manage the Stormwater asset classes:

- Operations and Maintenance Plan - Activities undertaken to ensure efficient operation and serviceability of the assets. This will ensure that the assets retain their service potential over the course of their useful life.
- Renewal Plan - Provides a program of progressive renewal of individual assets. Deteriorating asset condition primarily drives renewal needs.
- Enhancement Plan - Provides a program of system enhancements to improve parts of the system performing below target service standards and to develop the system to meet any future demand requirements. Sub-standard asset performance primarily drives asset development needs.

### 4.1 Physical Parameters

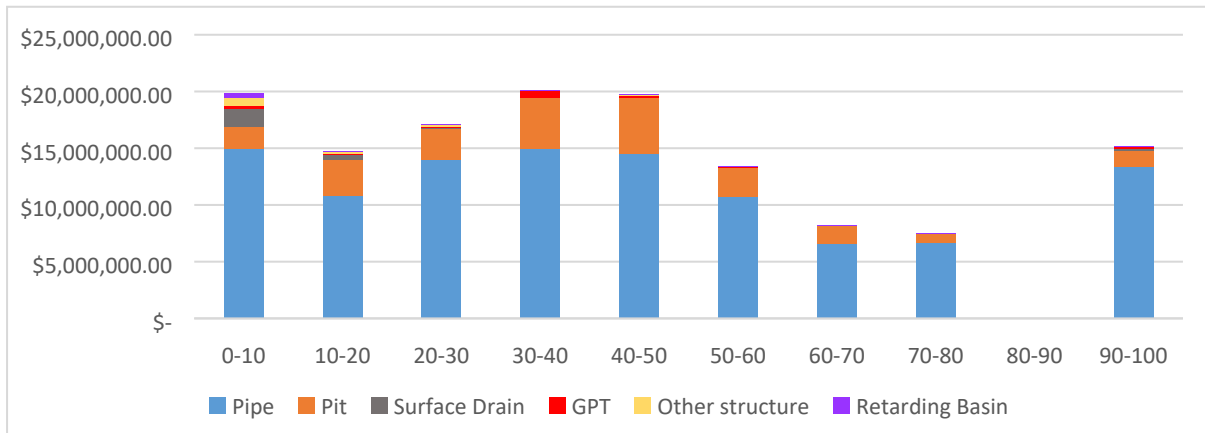
Following are the summaries of Stormwater assets covered in this AMP:

**Table 3: Stormwater Asset Inventory Summary (as at 30 June 2019)**

Asset Type	Quantity
Pipe/ main (Km)	288
Surface Drain (Km)	6
GPT (number)	30
Pit (number)	9532
Retarding basin (number)	10
Other structure (Headwall/ End-wall, Energy Dissipation Device, Overflow Structure, Swale etc.) (number)	330

## 4.2 Asset Age Profile

The age profile in comparison to asset value included in this AMP is shown in the figure below:



**Figure 1: Asset age profile**

In reviewing the asset age profile, the bulk of stormwater infrastructure is less than 60 years old. The average asset life for stormwater assets is between 80 – 100 years and therefore, it is anticipated that asset age will not be a major factor over the current planning horizon.

## 4.3 Asset Capacity & Performance

Council’s Stormwater network services are generally provided to meet design standards and level of service.

**Table 4: Known Service Performance Deficiencies**

Asset Class	Service Deficiency
Stormwater pipe network	Unknown capacity of system and lack of confirmed asset details. Limited field knowledge of known overflow points or nuisance flooding areas. A new hydraulic model is required to be developed and calibrated to current condition.
Gross pollution traps and treatment devices	Maintenance planning is not well documented for cleaning gross pollution traps to minimise poor quality stormwater flowing into sensitive waterways.  Lack of experience in maintaining constructed wetlands and water gardens.
Flood levees and retention system	Limited knowledge of the effectiveness and risks with levees and retention systems is available. New flood plain studies has been developed but have not been comprehensively transferred into corporate knowledge.

The above service deficiencies were identified from technical knowledge and expertise through existing AM systems and staff. Capacity and performance needs to be monitored and adjustments made as it is identified.

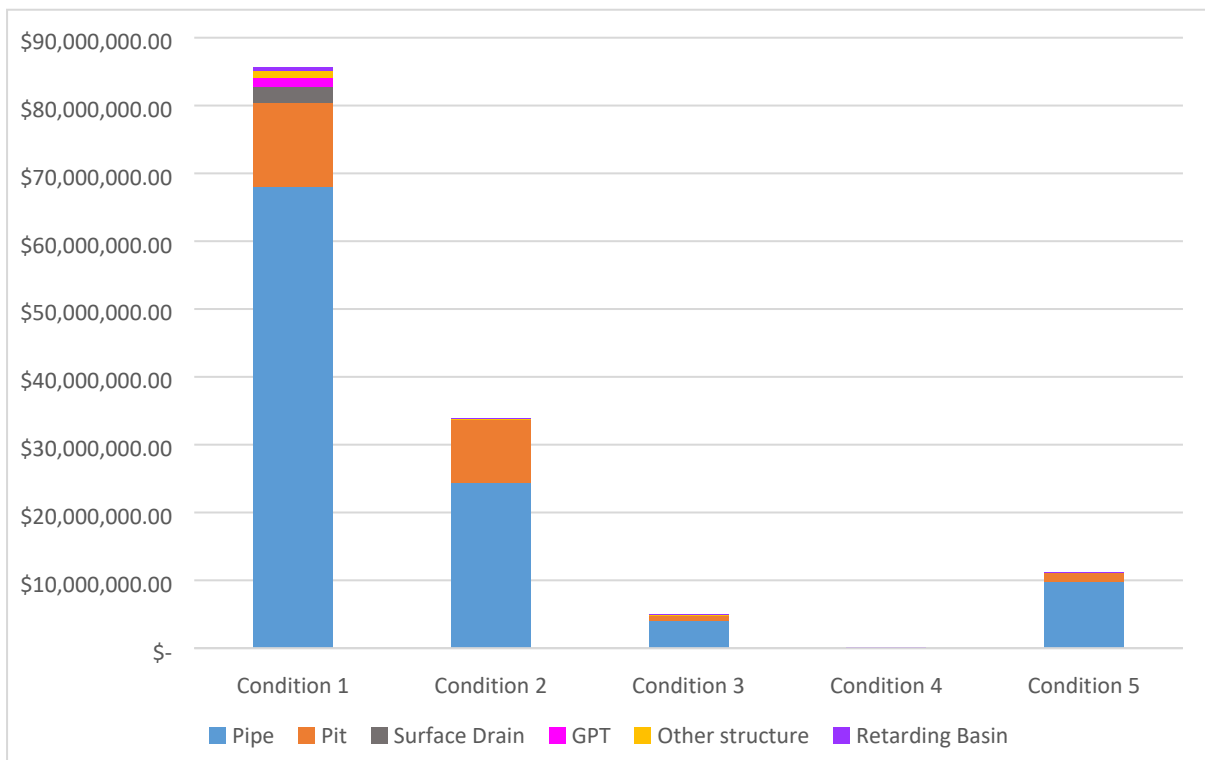
## 4.4 Asset Condition

Asset condition has been determined for QPRC's assets based on a combination of inspections, age profile and staff experience with the Asset Condition stored in the Asset Register against each asset. Council is committed to regular condition data collection in order to mitigate risk and to make informed decisions in accessing the whole of life costs for the asset.

Council utilises the IIMM condition rating system of 1 – 5.

**Table 5 - Condition Rating Table**

Condition Rating	Description of Condition
1	Excellent – As New
2	Good – Minor Defects Only
3	Average – Maintenance Required to Return to Acceptable Level of Service
4	Poor – Consider Renewal
5	Very Poor – Approaching Unservicable and Requires Replacement



**Figure 2: Asset condition**

**Notes:** Limited condition information is recorded for stormwater assets. Some CCTV images are available of large diameter stormwater pipes only and age profiles are relied on for condition assessment.



## 4.5 Asset Valuation

QPRC Stormwater assets were valued as at 12 May 2016 as part of the formation of Queanbeyan-Palerang Regional Council. An external valuation company conducted the asset valuation. Since the valuation date, additional assets have been realised and capitalised through QPRC's Capitalisation Directive and asset indexations applied according to the Australian Accounting Guidelines.

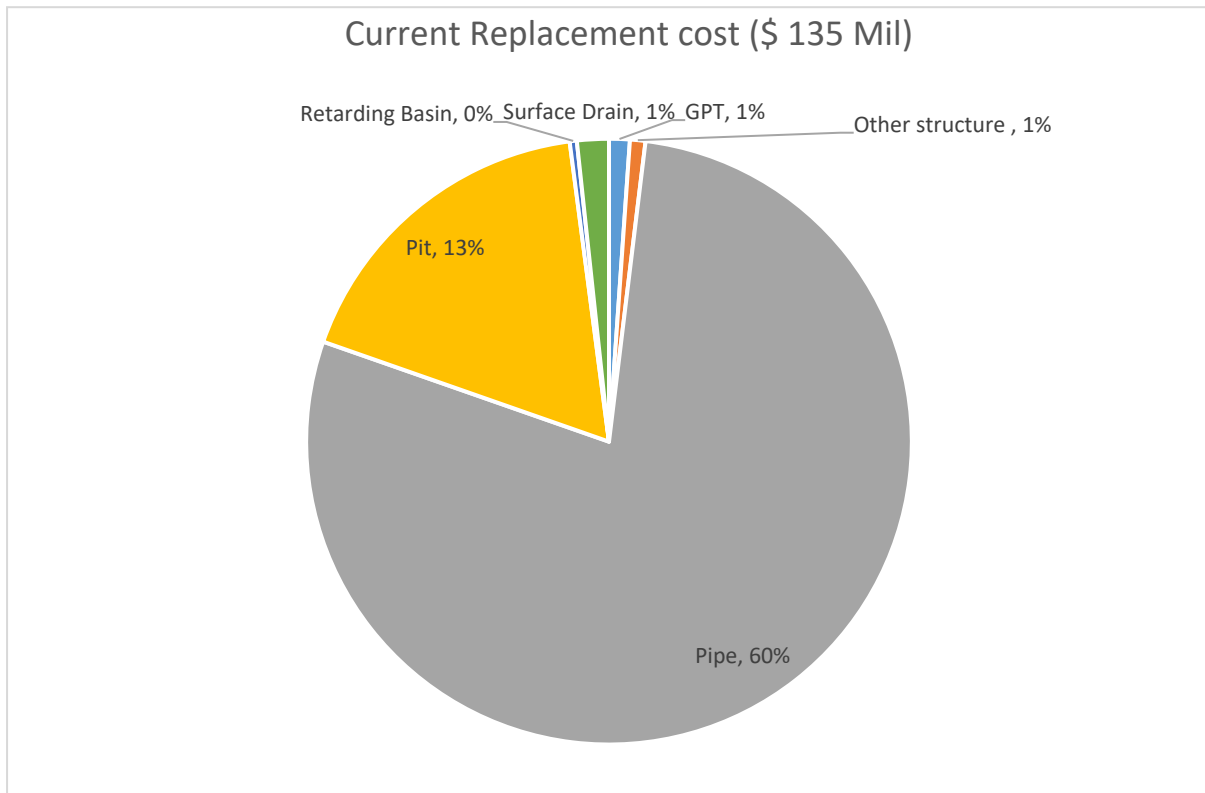


Figure 3: Asset valuation

## 4.6 Maintenance Plan

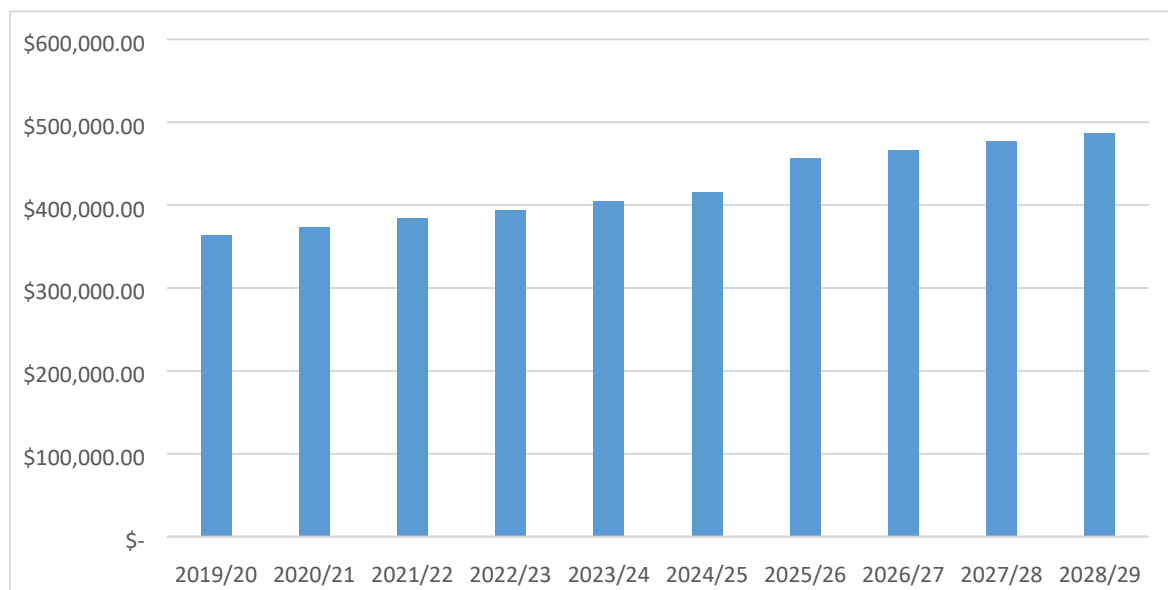
Maintenance planning is required to ensure that council are adequately managing its asset base in an optimal manner. The average expenditure on operational and maintenance activities for the Stormwater asset base was **\$0.4M (0.7% of Depreciable Value)**. Due to the current financial accounting system in operation, a reliable breakdown of operational versus maintenance costs is not available. Similarly, a split of maintenance costs for the various asset classes not fully understood.

Council is moving towards a work-order system that will allow maintenance costs to be more accurately captured directly against the assets which will enable a more transparent view of costs to be provided.

QPRC is endeavouring to improve its asset management practices to include more preventative maintenance activities. This includes developing scheduled inspections and maintenance tasks to reduce expensive reactive repair work.

As the work-order system develops, additional scheduled inspections and maintenance activities will be added further assisting in understanding maintenance requirements and reducing reliance on reactive repair work.

As highlighted in the community satisfaction survey (Section 2.1), the satisfaction rating for stormwater services was above average (mean satisfaction is 3). This indicates that most customers are not impacted at present by any system issues.



**Figure 4: Forecast O & M Expenditure**

Until a holistic picture can be provided on maintenance costs, future maintenance budgets will be increased between **2% - 3%** of depreciable value as a base figure.

If maintenance levels are decreased, there is a possibility that additional asset deterioration will occur and result in increased backlog of rehabilitation and/or replacement requirements to meet level of service requirements.

## 4.7 Renewal Plan

Renewal expenditure is major work that does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered enhancement or new works expenditure.

Assets requiring renewal are identified from the following:

- Projected from the condition based remaining life calculation.
- Where condition data is not available; age & remaining useful life has been used to calculate.

Prioritisation of the renewal plan is based on an assessment of assets criticality in terms of importance and related risk. At present, QPRC determines priority based on past experience and knowledge of the asset networks.

Renewal works identified in terms of renewal strategies may be deferred if the cost (or aggregate cost) is beyond the current financial ability to fund it. This can occur when there are short term renewal profile peaks, or higher priority works are required on other infrastructure asset groups. When renewal works are deferred, the impact of the deferral on the assets ability to still provide the required level of service will be assessed. Although the deferral of some renewal works may not impact significantly on the short-term operation of the assets, repeated deferral will create a liability (backlog) in the longer term, which may impact on QPRC’s ability to achieve an overall asset backlog of less than 2%.

**Table 6- Renewal Forecasting Method**

<b>Asset Class</b>	<b>Predictive Criteria Used</b>	<b>Model Used</b>
Stormwater system	Asset age	Asset age

Major stormwater renewal projects identified to occur over the next 4 year period include:

- Upgrade of the Braidwood urban stormwater system capacity
- Bungendore Flood Mitigation Works

## 4.8 Creation / Acquisition / Upgrade

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be required at no cost to the organisation from land development, or through 'gifts' provided to Council.

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations.

All new assets created through Capital Project Work must have a business case developed justifying the requirement of the need as documented in QPRC's Capital Project Management Framework.

With the increased "Greenfield" land development that is occurring in Googong, Tralee, Braidwood and Bungendore, the value of new stormwater assets gifted to Council is expected to be approximately \$5 M average per year.

## 4.9 Disposals

Disposal includes any activity associated with disposal of a decommissioned asset, including sale, demolition or relocation. During the course of renewal projects, some assets may be demolished, decommissioned and replaced with a new asset. This occurs during a stormwater main replacement project where the existing stormwater main is completely decommissioned and replaced with a new stormwater main asset.

During asset capitalisation, any decommissioned assets or partially decommissioned assets will be identified and the financial values adjusted in-line with the approved accounting practices.

There are no other large value assets currently identified for disposal during this Asset Management Plan period.

## **5 Risk Management Planning**

### **5.1 Critical Assets**

A critical asset is an asset for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets. Although critical assets have a high consequence of failure, they don't necessarily have a high likelihood of failure. Asset criticality information are used for prioritising maintenance and renewal work. Mainly asset hierarchy has been considered as criticality ranking for this Stormwater AMP. A further review of the asset criticality need to be conducted in the future revisions of this Stormwater AMP.

### **5.2 Infrastructure Risk Management Plan**

Currently Stormwater Risk Management Plan is unavailable and will be developed in future revisions of this Stormwater AMP.

# 6 Financial Summary

This section contains the financial requirements resulting from all the information presented in the previous sections of this Stormwater AMP. The financial projections will be improved as further information becomes available on agreed level of service and current & projected future asset performance. The projections are based on the best available information and are aimed at giving a direction for the Long Term Financial Planning (LTFP).

## 6.1 Financial Statements and Projections

The financial history & projected expenditures (Operation, maintenance, renewal and new/enhancement) are shown below. Note that all costs are 2018/19 values.

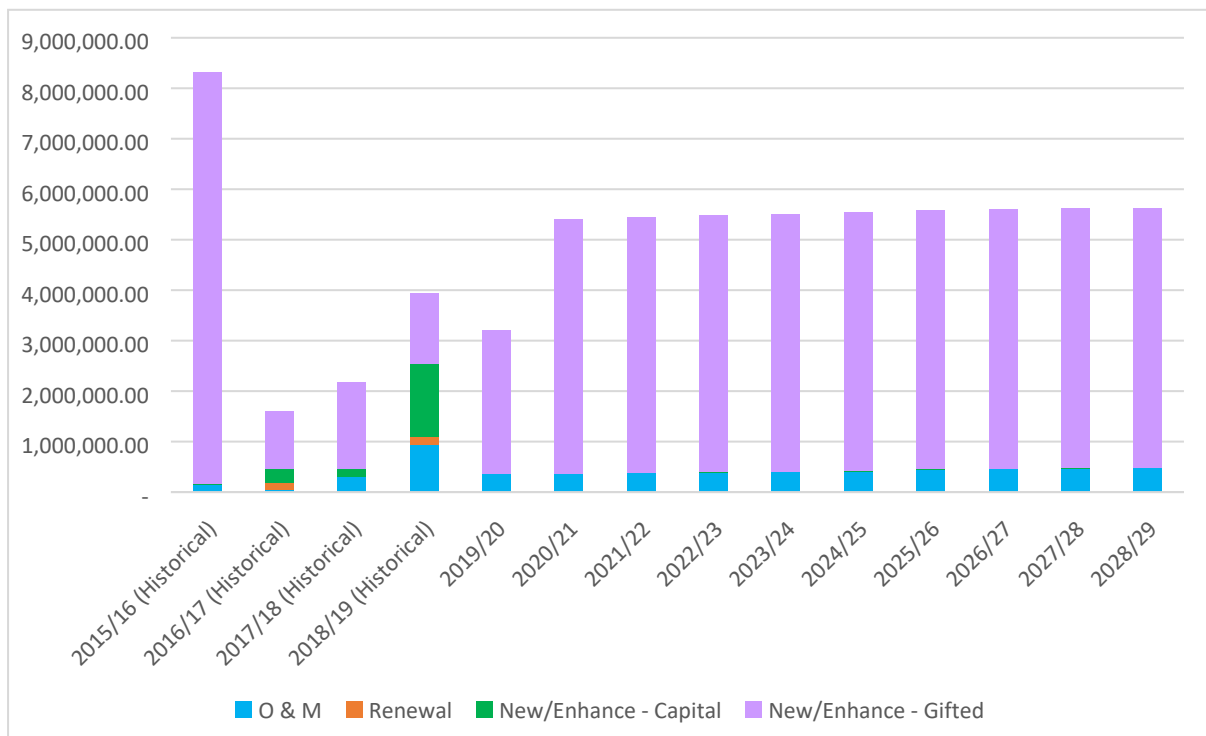


Figure 5: Summary of asset expenditure & gifted value (historical, & predicted)

## 6.2 Funding Requirements – Asset Replacement

In order to maintain a sustainable asset base, the funding required to replace aging and deteriorated assets should be sufficient to deliver an overall backlog of less than 2%. This will require Council to maintain an asset renewal expenditure ratio of 100% over the 10 year planning period.

Table 7: Renewal expenditure trends

Renewal Expenditure (\$ '000)				
	2015/16	2016/17	2017/18	2018/19
Total Renewal expenditure	0	149	0	154
Total Annual depreciation	1,538	2,005	1,683	1,795
Renewal Expenditure Ratio %	0%	7%	0%	9%

Further financial indicators obtained through Council's requirements for reports against Special Schedule 7 in the Annual report provide indicator ratios on any asset funding gaps (backlog) and maintenance ratios.

**Table 8: SS7 Reporting**

SS7 Reporting (\$ '000)				
	2015/16	2016/17	2017/18	2018/19
Estimated Cost to bring to satisfactory standard	23,976	9,387	5,407	11,183
Net carrying amount	148,211	111,689	156,883	110,278
<b>Capital Funding Gap Ratio</b>	<b>16.2%</b>	<b>8.4%</b>	<b>3.4%</b>	<b>10.1%</b>
Required maintenance	11,154	696	4,967	218
Actual maintenance	1,531	548	2,025	134
<b>Maintenance Expenditure ratio</b>	<b>13.7%</b>	<b>79%</b>	<b>41%</b>	<b>61%</b>

QPRC's renewal expenditure has fluctuated as a result of the merger of Queanbeyan City Council and Palerang Council and the different methodologies used to record and monitor renewal costs. Generally, the adopted renewal ratio will be 100%. Renewal ratios will be monitored over the life of this Asset Management Plan and reported annually with the Financial Statements.

Evidence suggests that significant underspending has occurred on Stormwater assets. In order to reduce the future spokes in renewals and emergency maintenance works, additional funding should be redirected from other asset classes to stormwater assets.

## 6.3 Funding Strategy

After reviewing service levels, as appropriate to ensure ongoing financial sustainability, projected expenditure in section 6.1 need to be accommodated in Council's LTFFP.

Potential funding sources include, but are not limited to:

- Operating revenue;
- Grants;
- Developer contributions; and
- Loans.

## 6.4 Valuation Forecast

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from asset constructed by land developers and others and donated to Council.

The figure below shows the projected Stormwater asset replacement cost, depreciated expense & depreciated replacement cost for the next 10 years in current 2019 dollar values. The valuation forecasts include developer contributions for Googong, South Jerrabomberra & Bungendore Development. It is anticipated that the asset base will continue to increase in value and as a result, depreciation costs will also increase proportionally.

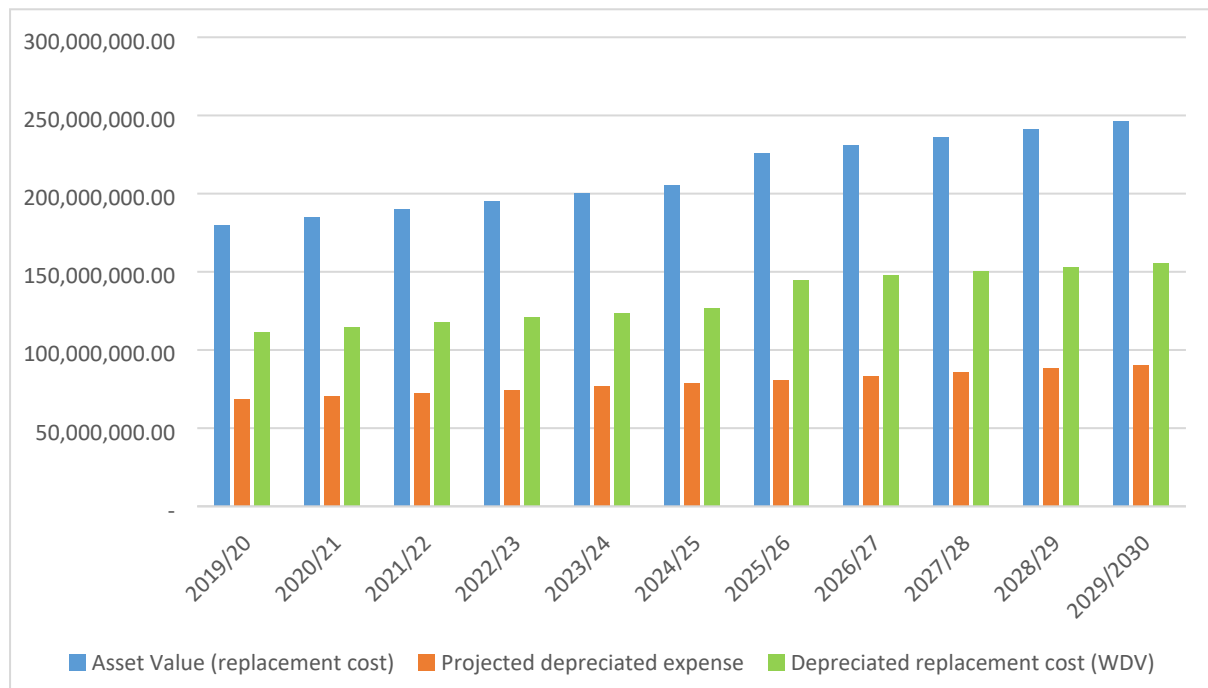


Figure 6: Projected value, depreciated expense and depreciated replacement cost (WDV)

## 6.5 Key Assumptions made in Financial Forecasts

Key assumptions made in the preparation of the financial information in this Stormwater AMP are:

- All predicted costs stated are in current 2019 dollar values;
- Maintenance forecasts are based on maintaining current level of expenditure
- Renewal forecasts have been calculated based on available asset condition data, remaining life and asset criticality.
- Useful lives have been considered based on industry practice and IIMM guidelines.
- 12 May 2016 Valuation figures and thereafter indexation were adopted.



## 6.6 Forecast Reliability and Confidence

QPRC is a newly formed council from the amalgamation of two former councils. Two former councils had two different asset management information systems. After amalgamation we are having new asset management information system; where we are continuously refining our data.

The accuracy of the future financial forecasts may be improved in future revisions of this Stormwater AMP by the following actions:

- Improve asset condition data;
- Determine asset construction date;
- Refine intervention levels;
- Review and improve asset criticality;
- Implementing mobility system across all Stormwater assets will allow better prediction modelling

# 7 Plan Improvement and Monitoring

## 7.1 Improvement Plan

This asset management plan is to be continually reviewed and improvements made into how QPRC manages its asset base. The following actions have been identified in developing this asset management plan:

**Table 9: Stormwater asset management improvement plan**

Identified gap	Priority (High: 1 – 2 years; Medium: 2 – 4 years; Low: above 4 years)
Refine community levels of service including gaining community agreement to standard and key performance measurement	High
Review technical level of standards and ensure the standards reflect service levels, quadruple bottom line decision making and meets asset management requirements	Medium
Review business processes and update the Sewerage Maintenance Plans based on agreed community, technical and maintenance service standards	High
Develop a Sewerage Risk Management Plan and identify critical assets and response times	High
Review maintenance activities and develop schedules for inspections/routine maintenance tasks as required and document in maintenance plans.	Medium
Review asset register data structure and identify asset attribute data gaps	High
Continue to synchronise Asset Registers with GIS mapping functionality. This includes refining and harmonising GIS layers	High
Formalise condition assessment/inspection framework for all asset classes. Ensure condition data is less than 4 years old.	Medium
Ensure Gifted Assets correctly recorded and valued in Asset Registers	High

## 7.2 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

Information used to support the AM Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the organisation’s long term financial plan.

This Stormwater AMP has a life of 4 years (Council Election Cycle) and is due for revision and updating within 12 months of each Council election.

## 7.3 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required projected expenditures identified in this Stormwater AMP are incorporated into council's long term financial plan,
- The degree to which 1-5 years detail work programs, budgets, business plans and organisational structures take into account the overall works program trends provided by this Stormwater AMP.
- Sufficient asset renewal funding (ratio with annual depreciation expense to be above 1.0) to target infrastructure backlog ratio of less than 2.0% is achieved by 2026.

## 8 References

IPWEA, 2015, International Infrastructure Management manual (IIMM), Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org.au/IIMM](http://www.ipwea.org.au/IIMM)

IPWEA, 2015, Australian Infrastructure Financial Management Guidelines, Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org.au/AIFMG](http://www.ipwea.org.au/AIFMG)

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