

# Asset Management Plan



## Stormwater Assets

*Providing a quality lifestyle*



| Document Control |              | Asset Management Plan                   |        |          |          |
|------------------|--------------|---|--------|----------|----------|
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|                  |              |   |        |          |          |

The entity can choose either template to write/update their plan regardless of their level of asset management maturity and in some cases may even choose to use only the Executive Summary.

The illustrated content is suggested only and users should feel free to omit content as preferred (e.g. where info is not currently available).

This Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

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## 1.0 EXECUTIVE SUMMARY

### 1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AMP) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 20 year planning period. The AMP will link to a LTFP (Long Term Financial Plan) which typically considers a 10 year planning period.

This plan covers the infrastructure assets that provide **Stormwater (SW)** related assets.

### 1.2 Asset Description

The SW network covered in this AMP comprises the following asset categories:

| Asset Category        | Quantity    | Current Replacement Cost (\$) |
|-----------------------|-------------|-------------------------------|
| SW Pipes              | 161,585 (m) | 109,578,286                   |
| Culverts              | 21 (Nos)    | 4,266,352                     |
| Open Channel Walls    | 11,624 (m2) | 9,420,888                     |
| Trash Racks           | 12 (Nos)    | 125,675                       |
| SW Pits               | 3941 (Nos)  | 11,399,274                    |
| Gross Pollutant Traps | 2 (Nos)     | 502,000                       |
| Mesh pits             | 5 (Nos)     | 19,008                        |
| Open Channel Floors   | 10,928 (m2) | 4,943,285                     |
| Total                 |             | <b>\$140,254,768</b>          |

The above infrastructure assets have a total renewal value estimated at **\$140,254,768**

#### Typical SW pipe and Culvert



Typical underground SW pipe



Typical Culvert



### Open Channel Walls



Reno Matress Wall



Rock Wall



Rock Wall



Concrete Wall

### Open Channel Floors



Concrete Floor



Rock Floor

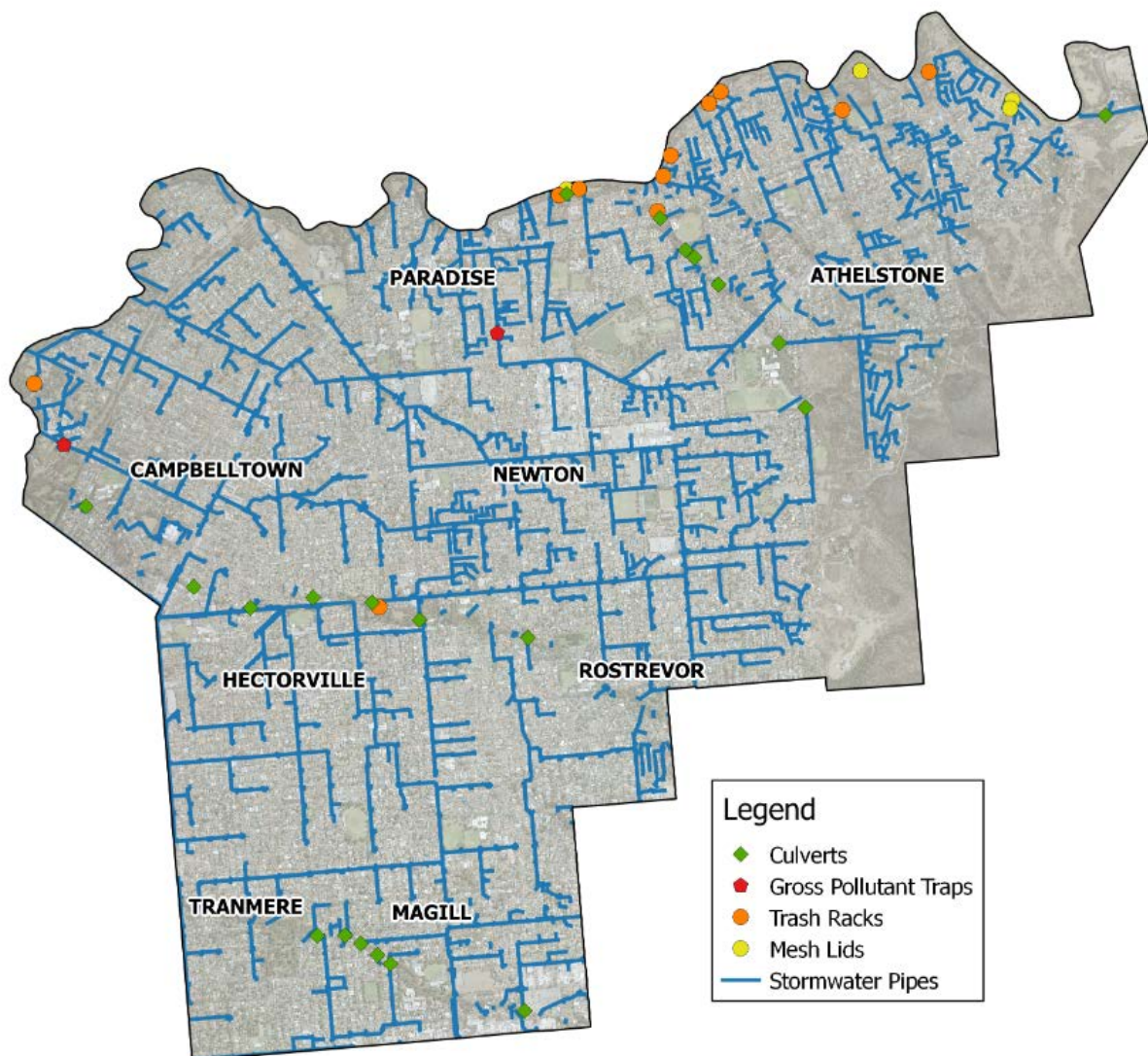


Trash Rack

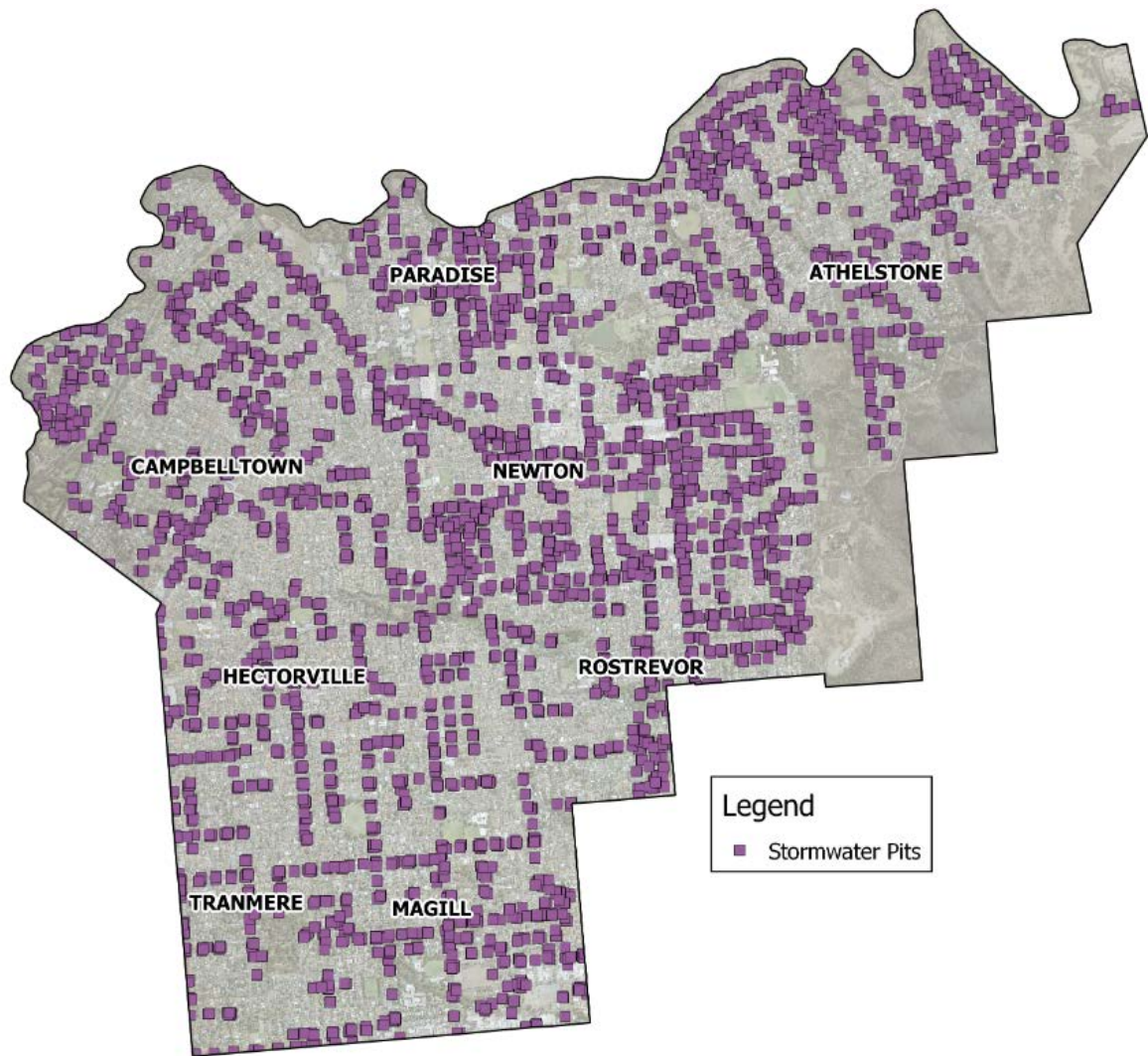


Mesh Pit

Locations of the SW assets are shown below:







### 1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

The main service consequences of the Planned Budget are:

- Litigation
- General Community Complaints

### 1.4 Future Demand

The main demands for new services are created by:

- Customer requests
- Community needs.

These demands will be addressed using a combination of managing and upgrading existing assets, and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.



## 1.5 Lifecycle Management Plan

### 1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AMP includes operations, maintenance, renewal, acquisition and disposal of assets. Although the AMP may be prepared for a range of time periods, it typically informs a LTFP period of 10 years. Therefore, a summary output from the AMP is the forecast of total outlays over a 10 year period, which for the SW assets are estimated as \$5,196,537 or an average of \$519,654 per year.

## 1.6 Financial Summary

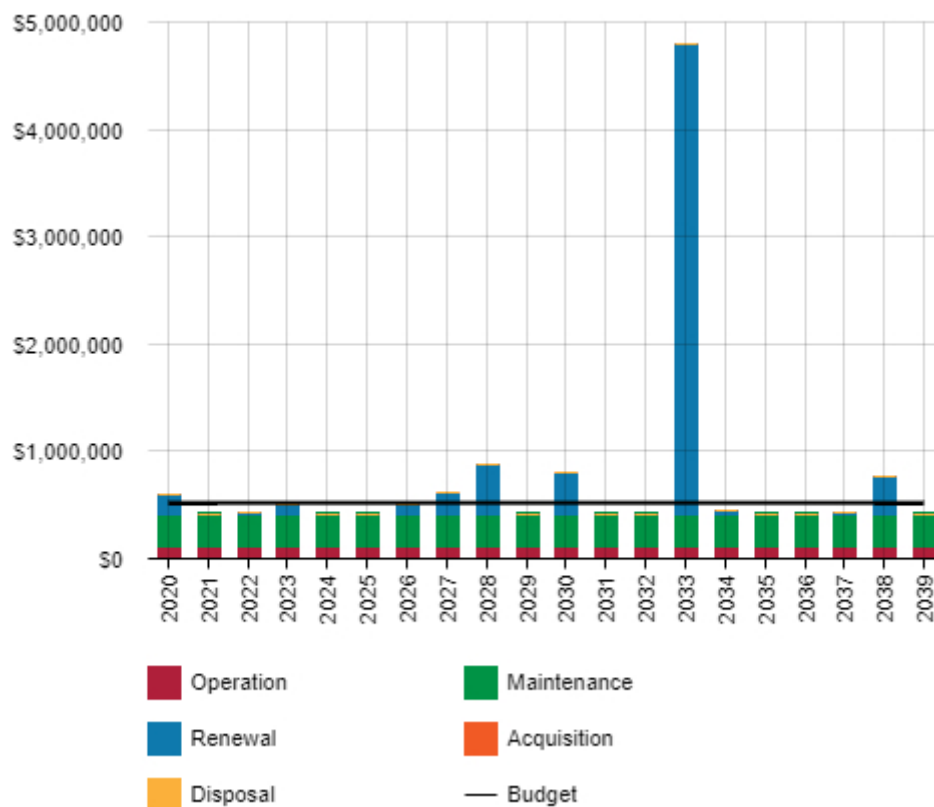
### 1.6.1 What we will do

Estimated available funding for the 10 year period is \$5,200,000 or an average of \$520,000 per year as per the LTFP or Planned Budget. This is 100.08% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the LTFP can be provided. The Informed decision making depends on the AMP emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for SW assets leaves a surplus funding of \$346 average per year of the forecast lifecycle costs required to provide services in the AMP compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

***Forecast Lifecycle Costs and Planned Budgets***



Note:

- The above graph details total budget expenditure (Acquisitions, Operation, Maintenance and Renewal costs)
- This AMP is based on total budgeted expenditure for renewal works with 10 year average funding of \$105,000 per year
  - This level of funding creates surplus funding of \$346 funding per year for the first 10 year
- It should be noted that this level of funding, if continued for 20 years, will create a shortfall of \$206,105 per year
- Further modelling indicates that
  - For 20year planning, it requires on an average \$315,000 per year to complete the renewal works
  - For 50year planning, it requires on an average \$1,265,500 per year to complete the renewal works
- The disposal life cycle costs shown are minimal, as these cost are built into renewal costs.
- No acquisitions (new works) are planned for the next 10 year
- Figure Values are in 2019 dollar values.

We plan to provide SW Assets services for the following:

- Operations, maintenance, renewal and upgrade of SW network to meet service levels set by annual budgets
- Renewal works as listed in the **Appendix D** within the 10 year planning period
- Continue to improve technology, processes and procedures for managing asset data thereby improving our knowledge of the assets to help make more informed decisions.

### 1.6.2 What we cannot do

We currently do allocate enough budget to sustain these services at the current standard. Works and services that cannot be provided under present funding levels are:

- New SW related requests from the Community, unless funded through Council budgets.
- Increase of stormwater runoff due to infill development.

### 1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

Reduction in the current funding level may incur the following risk consequences are:

- Litigation
- Financial
- Reputation

We will endeavour to manage these risks within available funding by:

- Undertaking frequent inspections and maintenance to ensure that the assets meet current legislative and safety requirements.
- Allocate sufficient funds to ensure that assets meet compliance requirements
- Communicate effectively with the ratepayers.
- Requesting additional funding to remediate stormwater issues eg localise flood

### **1.7 Asset Management Practices**

Our systems to manage assets include:

- Finance One to manage finance data
- Conquest to manage asset data.
- QGIS/Intramap to manage spatial asset data.

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

Asset Register data is used to forecast the renewal costs. This is done using the acquisition year and the useful life.

The Asset Register is used to forecast the renewal life cycle costs for this AMP.

### **1.8 Monitoring and Improvement Program**

The next steps resulting from this AMP to improve asset management practices are to:

- further develop/improve Mobile Field Data Collection technology which will enable Staff to record defects in the Maintenance Management in Conquest Asset Management System (ASM).
- continue to use Mobile Capital Works Project Data Capture in the field. Council has developed this methodology to capture the asset data when a capital Work Project is complete. The asset team is coordinating this process with the project managers.
- develop a further data capture programme will be developed to collect cyclic maintenance works, in addition to scheduled condition assessment programme, where SW assets are captured every four years.
- develop inspection regimes for expired Assets based on the information contained in Conquest.
- train staff in order to update their knowledge with current Asset Management practices.



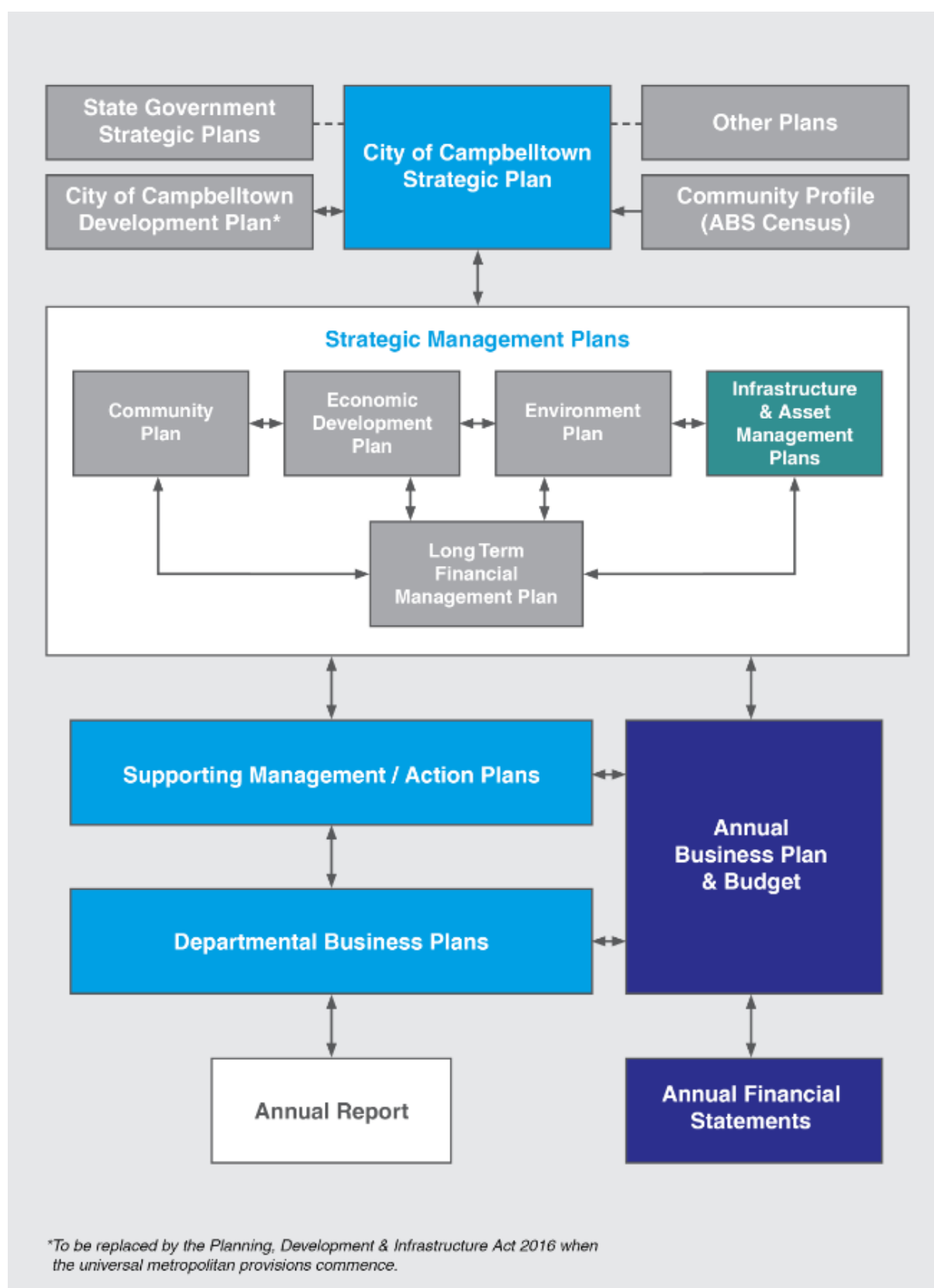
## **2.0 Introduction**

### **2.1 Background**

This AMP communicates the requirements for the sustainable delivery of services through the management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

Council's Asset Management Policy has been used to develop its suite of AMPs, along with the following key planning documents:

- Campbelltown City Council Strategic Plan 2010-2020
- Campbelltown City Council Asset Capitalisation Administrative Procedure
- Campbelltown City Council Depreciation Policy
- Unit Rate Review Document
- Useful Live Review Document
- Resilient East Vulnerability Assessment and Climate Projects for the eastern Region
  - <https://www.resilienteast.com/resources>
- State of the Environment reporting ( done every 5 years, most recent is 2018)
  - [https://www.epa.sa.gov.au/data\\_and\\_publications/state\\_of\\_the\\_environment\\_reporting](https://www.epa.sa.gov.au/data_and_publications/state_of_the_environment_reporting)
- Campbelltown City Council Social Plan 2020



The infrastructure assets included in this plan have a total replacement value of **\$140,254,768**.

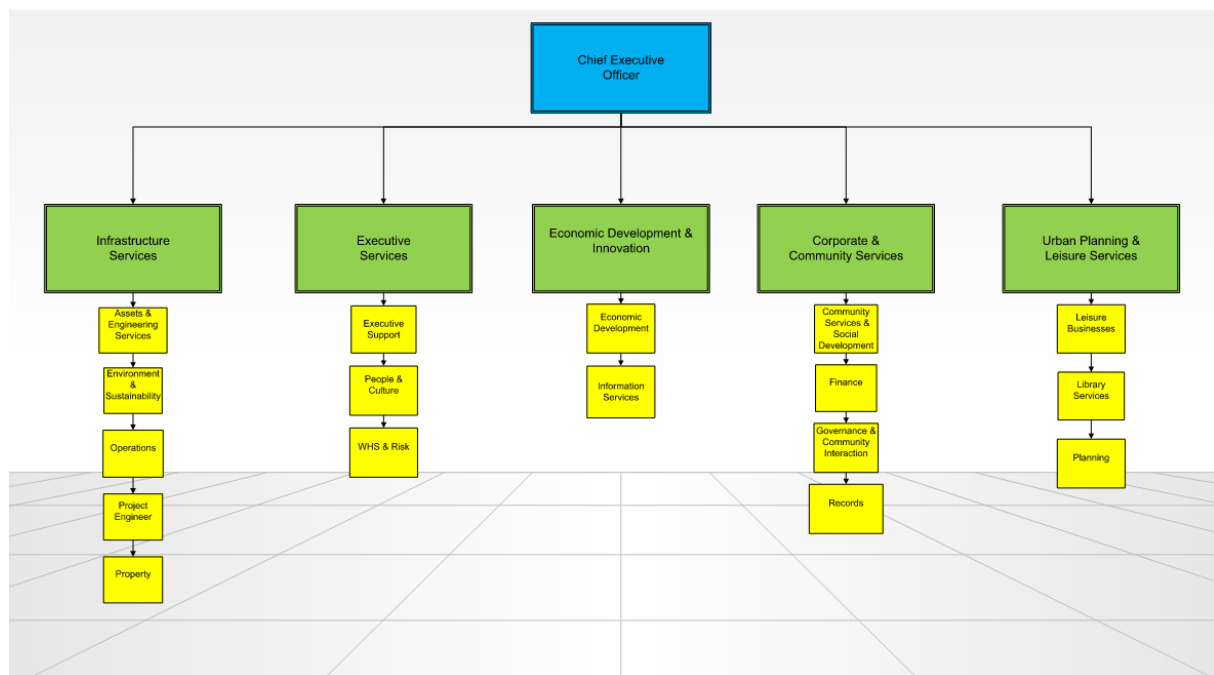
Key stakeholders in the preparation and implementation of this AMP are shown in Table 2.1.

**Table 2.1: Key Stakeholders in the AMP**

| Key Stakeholder                         | Role in Asset Management Plan  |
|---|--|
| Elected Members                         | <ul style="list-style-type: none"> <li>• Represent needs of community/shareholders</li> <li>• Allocate resources to meet the organisation's objectives in providing services while managing risks</li> <li>• Ensure organisation is financial sustainable.</li> <li>• Adoption of AMP</li> </ul>   |
| CEO/ Executive Management team          | <ul style="list-style-type: none"> <li>• Provide direction of AMP to meet the organisation's objectives in providing services while managing risks,</li> <li>• Ensure organisation is financially sustainable</li> </ul>   |
| General Manager Infrastructure Services | <ul style="list-style-type: none"> <li>• Manage organisation operational activities and future strategic planning direction</li> <li>• Allocate resources</li> </ul>   |
| Manager Assets and Engineering          | <ul style="list-style-type: none"> <li>• Overseeing the design of capital works projects, documentation</li> <li>• Manage technical Level of Service</li> <li>• Co-ordination of Asset Team</li> </ul>   |
| Manager City Operations                 | <ul style="list-style-type: none"> <li>• Manage the delivery of Capital Works program</li> </ul>   |
| Maintenance Coordinator                 | <ul style="list-style-type: none"> <li>• Supervision of Capital Works and maintenance in relation to this asset</li> </ul>   |
| Finance Department                      | <ul style="list-style-type: none"> <li>• LTFP, Asset Registers and operational financial data</li> </ul>   |
| Team Leader Asset Planning              | <ul style="list-style-type: none"> <li>• Collate asset information</li> <li>• Write, review and update AMPs</li> <li>• Manage and maintain asset management system</li> </ul>  |
| GIS Analyst & Asset Technical           | <ul style="list-style-type: none"> <li>• Assist in the development, maintenance and improvement of corporate spatial data and asset management</li> <li>• Develop, maintain and improve Council's GIS</li> <li>• Asset Management SQL Server Database Management and Scripting</li> <li>• Undertake asset related inspections</li> </ul> |
| Community & Ratepayers                  | <ul style="list-style-type: none"> <li>• End users of the services</li> <li>• Provide feedback on services</li> </ul>  |
| Governance                              | <ul style="list-style-type: none"> <li>• Development of Strategic Plans and other key strategic plans</li> </ul>   |

Our organisational structure for service delivery from infrastructure assets is detailed below:





## 2.2 Goals and Objectives of Asset Ownership

Our goal in managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a LTFP which identifies the income, expenses and funding required to provide its services to the community.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided
- Future demand – how this will impact on future service delivery and how this is to be met
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service
- Financial summary – what funds are required to provide the defined services
- Asset management practices – how to manage provision the services
- Monitoring – how the plan will be monitored to ensure objectives are met
- Asset management improvement plan – how to improve Council’s asset management maturity.

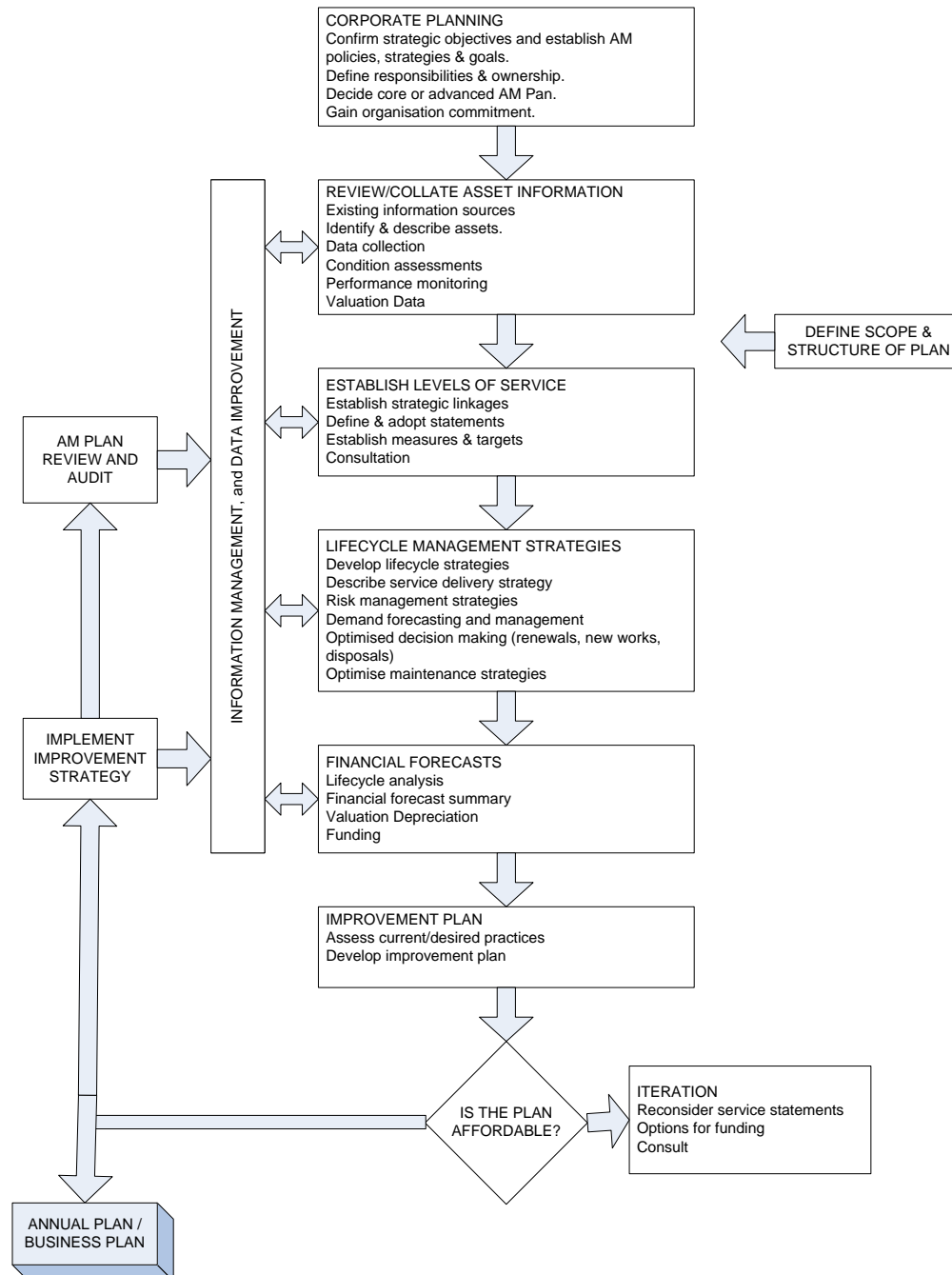
Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 <sup>1</sup>
- ISO 55000<sup>2</sup> - is an international standard covering management of assets of any kind. The ISO 55000 series of Asset Management Standards was launched in January 2014.

A road map for preparing an Asset Management Plan is shown below.

### ***Road Map for preparing an Asset Management Plan***

*Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11*



<sup>1</sup> Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

<sup>2</sup> ISO 55000 Overview, principles and terminology

### 3.0 LEVELS OF SERVICE

Level of service dictate the targeted asset performance in relation to customer expectation, and associated legislative and technical provisions. They also provide achievable milestones for the continuous upgrading of levels of service currently practiced.

Understanding the level of service required of an asset is vital for its lifecycle management as this largely determines an asset's development, operation, maintenance, replacement and disposal. Levels of service are pivotal in asset management as they have a direct financial impact due to their importance in both operational and risk-based prioritisation.

When establishing Level of Service they should be based on:

- Stakeholder Expectation – information gained from stakeholders on expected quality and price of services.
- Strategic and Corporate Goals – provides guidance for the scope of current and future services offered the manner of the services delivery and defines the specific level of service, which Council wishes to achieve.
- Legislative Requirements – legislation, regulation, environmental standards and industry and Australian Standards that impact on the way these assets are managed.

#### 3.1 Customer Research and Expectations

Council's Community Satisfaction Survey ask the community to rate:

- The importance of an asset on a scale from 0 (not important at all) to 10 (very important)
- How satisfied they are with Council's performance in providing and maintaining its assets from 0 (very dissatisfied) to 10 (very satisfied).

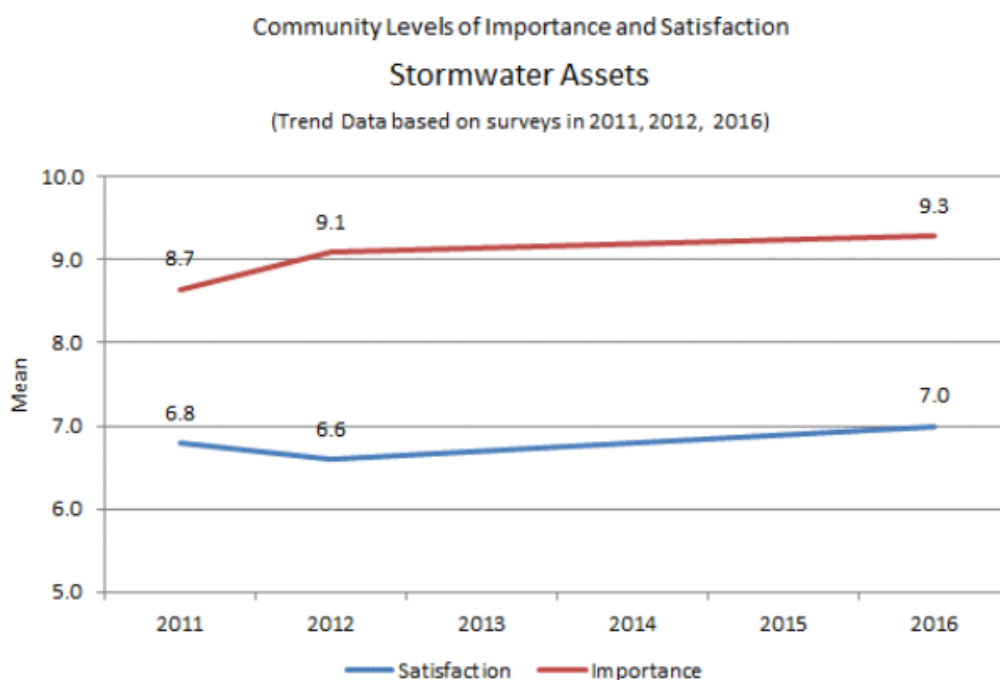
The community was asked to rate the level of importance and level of satisfaction with SW drains and Creeks in the surveys conducted in 2011, 2012 and 2016. Trends have been graphed using the mean scores from these years.

Table 3.1 summarises the results from our Customer Satisfaction Survey.

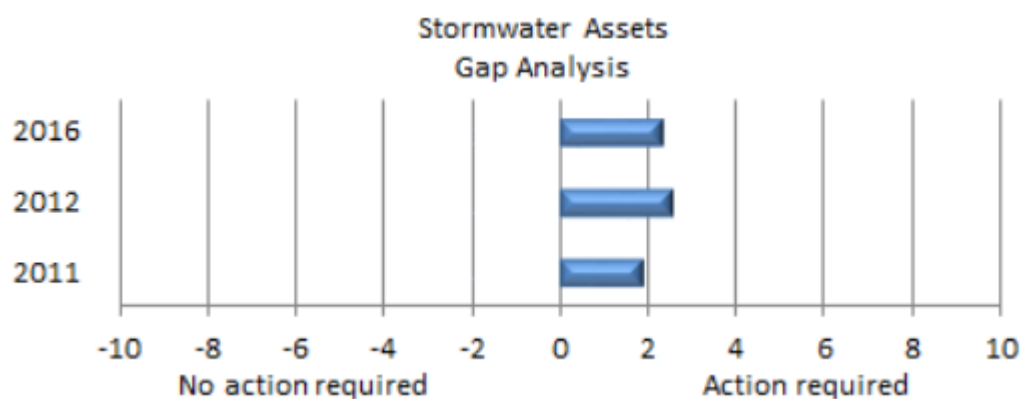
**Table 3.1: Customer Satisfaction Survey Levels**

| Performance Measure | Satisfaction Level    |                        |                 |                          |                     |
|---------------------|-----------------------|------------------------|-----------------|--------------------------|---------------------|
|                     | Very Satisfied (8-10) | Fairly Satisfied (6-8) | Satisfied (4-6) | Somewhat satisfied (2-4) | Not satisfied (0-2) |
| Satisfaction        |                       | ✓                      |                 |                          |                     |
| Importance          | ✓                     |                        |                 |                          |                     |





The Community consider SW drains and Creek assets as very important and is fairly satisfied with Council's performance in providing and maintaining these assets. The following graph shows the gap between importance and satisfaction rating for the 2016 survey year. This is useful in gauging how the community feels about the quality of service received, with the aim being to close the gap between the level of importance and the level of satisfaction).



The gap analysis shows the Community's perception of Council's performance in relation to SW drains and Creek assets and action is still required. This AMP will assist Council to close the gap between the Community importance and satisfaction rating.

The outcome of the community engagement survey conducted from 12<sup>th</sup> October 2020 through to 2<sup>nd</sup> November 2020 indicated that the community consider stormwater assets as extremely important. The overall average rating provided by the community for 'importance' was over 8.0.

Community engagement results also indicated that they are fairly satisfied with the stormwater assets by providing an average rating of 7.5 for ‘Satisfaction’.

In summary, there is an upward trend of overall ‘Importance’ and ‘Satisfaction’ measured through the community engagement survey.

### 3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Council’s vision, mission, goals and objectives.

Our vision is *“Campbelltown provides a quality lifestyle for its people.”*

Our mission is *“ At Campbelltown we will place a high value on living together, respecting each other’s views and building strong partnerships to support the needs of the community.”*

Our vision statement for Council’s Assets is: *“To effectively manage our City’s assets in an affordable and equitable way; ensuring the long term needs of the community are met.”*

The relevant goals and objectives and how these are addressed in this Asset Management Plan are summarised in Table 3.2.

**Table 3.2: Goals and how these are addressed in this Plan**

| Goal                                  | Objective  | How Goal and Objectives are addressed in the AM Plan  |
|---------------------------------------|--|---|
| Goal 1 – Quality Living               | 1.3. City Infrastructure that provides a range of welcoming, attractive and safe facilities that encourage social interaction and an active community. | Provide appropriate infrastructure and services.  |
| Goal 2 – Leadership                   | 2.2. Investment in strong leadership through training and development  | Further develop the Asset Management system to include mobile technology to assist in the management of our assets.   |
| Goal 3 – City Planning                | 3.2. Effective Infrastructure and Asset Management that allows for growth  | Continual development of processes and systems to ensure we have the best available data to enable us to make more informed decisions.  |
| Goal 4 – Environmental Responsibility | 4.2 Opportunities to conserve energy and resources are maximised   | Investigate design options that are available in the market at the time which can be utilised to have cooler, greener and more liveable outcomes in upgrading and of renewing assets. |
| Goal 5 – Local economy                | 5.2 Business and industry partnerships which support growth in the local economy   | Giving priorities to local businesses in selecting contractors for asset upgrade/ renewal works   |

### 3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the SW Assets service are outlined in Table 3.3.

**Table 3.3: Legislative Requirements**

| Legislation   | Requirement  |
|---|--|
| Local Government Act 1999                                 | Sets out the role, purpose, responsibilities and powers of local governments including the preparation of a LTFP supported by AMPs for sustainable service delivery.   |
| Local Government Act – Annual Reporting Section 428(2)(d) | A report on the condition of the public works, under the control of the Council as at the end of that year together with:<br>(i) An estimate (current values) of the amount of money required to bring the works up to a satisfactory standard; and<br>(ii) An estimate (current values) of the annual expense of maintain the works at that standard; and<br>(iii) Council’s programme for maintenance for that year in respect of the works. |
| Australian Road Rules                                     | Contains power for Council to install and remove traffic control devices.  |
| Australian Accounting Standards                           | Set out the financial reporting standards relating to, inter alia, the revaluation and depreciation of infrastructure assets.  |
| Local Government (Financial Management) Regulations 2011  | Impetus for the development of a Strategic Management Plan, comprising an (Infrastructure) AMP and LTFP.   |
| Work Health & Safety Act 2012                             | To secure the health, safety and welfare of persons at work.<br>To eliminate, at their source, risks to the health, safety and welfare of persons at work.<br>To protect the public against risks to health or safety arising out of or in connection with the activities of persons at work, or the use of operation of various types of plant.   |
| Highways Act 1926   | Set out the legislative framework for roads and road authorities in SA   |
| Environmental Protection Act 1993                         | An Act to provide for the protection of the environment: <ul style="list-style-type: none"> <li>• to establish the Environment Protection Authority</li> <li>• to define its functions and powers; and</li> <li>• for other purposes.</li> </ul>   |
| Road Traffic Act 1961                                     | Contains powers for Council to install or remove traffic control devices.  |

### 3.4 Customer Values

Service levels are defined in three ways; customer values, customer levels of service and technical levels of service.

**Customer Values** indicate:

- what aspects of the service is important to the customer
- whether they see value in what is currently provided and
- the likely trend over time based on the current budget provision.

**Table 3.4: Customer Values**



**Service Objective: Maintain the service level to meet or exceed the existing customer satisfaction level**

| Customer Values | Customer Satisfaction Measure    | Current Feedback   | Expected Trend Based on Planned Budget            |
|-----------------|----------------------------------|--|---|
| Importance      | via Customer Satisfaction Survey | *The community considered bridge assets are reasonably important with the rating of 9.0              | Close the gap between importance and satisfaction |
| Satisfaction    | via Customer Satisfaction Survey | *The community is fairly satisfied with the bridge assets and the overall satisfaction level was 6.8 | Close the gap between importance and satisfaction |

### 3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

**Quality** How good is the service...what is the condition or quality of the service?

**Function** Is it suitable for its intended purpose...is it the right service?

**Capacity/Use** Is the service over or under used...do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding levels.

These are measures of fact related to the service delivery outcome e.g. number of occasions when a service is not available, condition percentages of Very Poor/Poor/Average/Good/Very Good and provide a balance in comparison to the customer perception that may be more subjective.

**Table 3.5: Customer Level of Service Measures**

| Type of Measure  | Level of Service  | Performance Measure   | Current Performance   | Expected Trend Based on Planned Budget  |
|------------------|---|---|---|---|
| <b>Condition</b> | Provide SW network that are safe and free from hazard for the community                         | The SW network is maintained at a minimum of Condition Grading 2 as defined in Table 5.1.3  | Perform regular condition audits, including CCTV inspections, in order to remedy defects through Capital Works and Maintenance plans to ensure the network is maintained in good condition. | Council undertake the following works: <ul style="list-style-type: none"> <li>• CCTV survey of approximately 3% of SW underground pipe network each year</li> <li>• Cleaning and data capture of side entry pits twice a year</li> <li>• Regular maintenance</li> </ul> |
|                  | <b>Confidence levels</b>  |   | Medium  | Medium to High  |
| <b>Function</b>  | Provide SW network that meet the requirements of the legislation and community and other users. | Monitor CRMs (Customer Service Requests). Minimise flooding<br><br>Water quality (Gross Pollutant Trap, Trash Racks, Water Sensitive Urban Design). | Asset Management System providing detailed information regarding the SW assets and defects, enabling Planned Maintenance work.<br><br>Regular GPT, Trash Rack cleaning.                     | Improve function as required by regulations, if required.<br><br>Continue to deliver scheduled maintenance programs as require to meet demand   |
|                  | <b>Confidence levels</b>  |   | Medium  | Medium to High  |
| <b>Capacity</b>  | Ensure SW assets meet the required volume capacity  | Monitor CRMs.   | Perform regular defect inspections.   | Undertake necessary changes as required.  |
|                  | <b>Confidence levels</b>  |   | Medium  | Medium to High  |

### 3.6 Technical Levels of Service

**Technical Levels of Service** – Technical measures of performance drive delivering customer values and the expected level of service. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. upgrading a existing SW pipe system to cater for higher ARI event in a flood prone area) or adding a new service that did not exist previously (e.g. new SW infrastructure)
- **Operation** – the regular activities to provide services (e.g., undertake CCTV survey, street sweeping, SEPs cleaning, visual inspections, etc.)
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. high pressure jetting, undertake flood damage repairs, defects repair identified through various inspections (tree root intrusion))
- **Renewal** – the activities that return the service capability of an asset to that which it had originally provided (e.g. replacement of SW assets identified through renewal programme)

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.<sup>3</sup>

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the forecast activity requirements being recommended in this AMP.

**Table 3.6: Technical Levels of Service**

| Lifecycle Activity                 | Purpose of Activity  | Activity Measure                            | Current Performance*   | Recommended Performance **           |
|------------------------------------|--|---|--|--------------------------------------|
| <b>TECHNICAL LEVELS OF SERVICE</b> |  |   |  |                                      |
| <b>Acquisition</b>                 | SW design to meet capacity requirement to meet current design specifications | Compliance to relevant Codes and Standards. | <ul style="list-style-type: none"> <li>• New SW pipe installation for subdivisions are inspected by CCTV</li> <li>• SW does not enter private property at design storm intensity.</li> </ul> | Regular inspection of the SW network |

<sup>3</sup> IPWEA, 2015, IIMM, p 2|28.

| Lifecycle Activity | Purpose of Activity  | Activity Measure   | Current Performance*  | Recommended Performance **  |
|--------------------|--|--|---|---|
|                    | Develop Stormwater Management Plan for each creek catchments | Compliance to relevant Codes and Standards.  | <ul style="list-style-type: none"> <li>Council has region based Stormwater Management Plan</li> </ul> | <ul style="list-style-type: none"> <li>Undertake SWMP for each creeks catchment within five years.</li> </ul> |
|                    |  | <b>Budget</b>  | Nil   | Nil   |
| <b>Operation</b>   | SW network is in serviceable condition                       | Cyclic operational activities carried out efficiently. Includes yearly CCTV inspection based on the high risk underground drainage, and the scheduled cleaning of Side Entry Pits (SEPs) twice a year. | Regular CCTV inspections, SEP cleaning and defect inspections are carried out efficiently             | Continue to undertake yearly CCTV inspection and other relevant inspection regime                             |
|                    |  | <b>Budget</b>  | \$105,000   | \$105,000 (increase this amount if required)  |
| <b>Maintenance</b> | Documenting and Fixing Defects                               | SW network components are defect inspected regularly, re-inspected after major storm events and CRMs are investigated promptly.  | Regularly undertake defect inspections to monitor and record defects.                                 | Yearly recorded defect inspections to monitor and record defects needs  |
|                    |  | <b>Budget</b>  | \$310,000   | \$310,000 (increase this amount if required)  |
| <b>Renewal</b>     | SW design to meet capacity requirement to meet               | Compliance to relevant Codes and Standards.  | Defect inspections are carried out regularly. Detailed Survey and Condition audits of                 | Complete the renewal activities as listed in the Appendix D for the next 10 years.                            |

| Lifecycle Activity | Purpose of Activity  | Activity Measure  | Current Performance*   | Recommended Performance **   |
|--------------------|--|---|--|--|
|                    | current design specifications  |   | major/ minor culverts, Trash racks are carried out every 4 years.        |  |
|                    |  | <b>Budget</b>   | \$105,000  | \$105,000  |
| <b>Disposal</b>    | To remove existing component/s of SW network that are no longer required or require replacement. | Component has reached the end of its useful life or is no longer fit for purpose. | Components disposed in accordance with AMPs.                             | Components disposed in accordance with AMPs.                             |
|                    |  | <b>Budget</b>   | \$0, as disposal cost is included in the replacement cost of components. | \$0, as disposal cost is included in the replacement cost of components. |

Note: \* Current activities related to Planned Budget.

\*\* Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, with customer priorities changing over time.

## 4.0 FUTURE DEMAND

### 4.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices and environmental awareness.

### 4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

### 4.3 Demand Impact and Demand Management Plan

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 can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this AMP.

**Table 4.3: Demand Management Plan**

| Demand driver              | Current position  | Projection   | Impact on services  | Demand Management Plan  |
|----------------------------|---|--|---|---|
| Population /building stock | Estimated residential population in the Campbelltown Council area is 52,192 – 2019 ERP figures. | The population is projected to growth to 63,963 by 2031.   | Population growth throughout Adelaide will increase.  | Develop demand management strategies. Demand for new assets and services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new and expanded assets to meet demand plus implementing demand management strategies where appropriate. |
|                            | Increase in smaller property allotment  | Population increase may increase the prevalence of subdivisions, and subsequent to that smaller allotments will make up a larger | Potential increase in stormwater management runoff which could cause a localise flood and the need to either upgrade the existing stormwater network or acquiring new assets. | Incorporating WSUD as part of the development plan<br><br>Better inspection to ensure all storwater requirement are being implemented.  |



|                |  | percentage of overall allotments  |  |   |
|----------------|--|---|--|---|
| Climate Change | Council SW assets are constructed based on the current environmental conditions and current environmental standards. Council has recently declared a Climate Emergency and Staff are developing a Climate Solution Strategy. | Temperature rise, high density short duration rainfall, weather events becoming more frequent – likelihood of drought and flooding could have an impact on the SW assets. | Potential for ground movement in reactive soils during periods of drought, washout of SW infrastructure during flooding may impact on SW network assets.<br><br>Tree root intrusion that may impact on storm water pipe capacity | Continue to monitor the SW assets, research new engineering techniques and materials, investigate and, if appropriate, apply techniques in problem areas. |
| Social         | Healthy lifestyles are promoted with people recognising the importance of social connectivity.   | More people would desire to have Water Sensitivity Urban Design incorporated within the existing network.   | Potential for increased community expectation on services provided.  | Develop master plans and strategies accordingly ensuring any increased demand is planned for strategically.   |

#### 4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the SW Assets to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the LTFP (Refer to Section 5).

#### 4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change for any new works or acquisitions. Council recently has declared a Climate Emergency and Staff are developing a Climate Solution Strategy. This strategy will be considered in future AMP's.

Opportunities identified to date for the management of climate change impacts on existing assets are shown in Table 4.5.1.

**Table 4.5.1 Managing the Impact of Climate Change on Assets**

| Climate Change Description | Projected Change  | Potential Impact on Assets and Services  | Management  |
|----------------------------|---|--|---|
| Extreme weather events     | Increased frequency and duration of extreme weather events. | <ul style="list-style-type: none"> <li>Increases flows through more frequent storm events could require the upgrade of certain areas of the network (lack of capacity)</li> <li>Deterioration of assets</li> <li>Soil movement which will impact the SW network.</li> <li>Asset washed away from flooding</li> </ul> | <ul style="list-style-type: none"> <li>Undertake inspections following an extreme weather events and monitor</li> <li>Regular maintenance/cleaning</li> <li>Review of materials used in various SW network components that perform well in the extreme weather events</li> <li>Prepare Storm Water Management Plans (including city wide stormwater modelling)</li> </ul> |

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Buildings resilience will have the following benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint.

Table 4.5.2 summarises some asset climate change resilience opportunities.

**Table 4.5.2 Building Asset Resilience to Climate Change**

| New Asset Description | Climate Change impact These assets?                          | Build Resilience in New Works  |
|-----------------------|--|--|
| Extreme Storm Event   | Components of the SW network can get washed away or damaged. | <p>If the SW asset is to be installed at the same location, design the asset to cater for new hydraulic and climatic conditions.</p> <p>Consider to increase the stormwater capacity through upgrade or duplication.</p> |

It should also be noted that the impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AMP.

## 5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the SW Assets plans to manage and operate the assets at the agreed levels of service (Refer to Section 3), while managing life cycle costs.

### 5.1 Background Data

#### 5.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5.1.1.

**Table 5.1.1: Assets covered by this Plan**

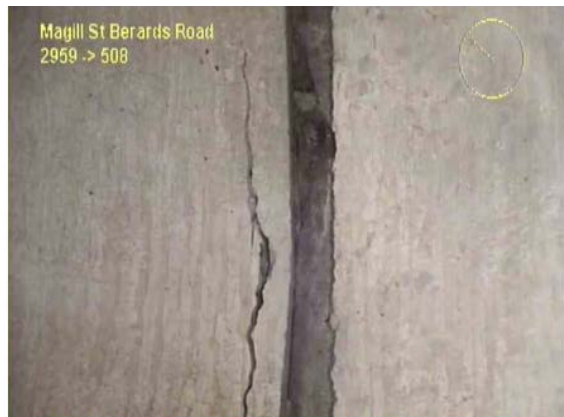
| Asset Category        | Dimension   | Replacement Value (\$) |
|-----------------------|-------------|------------------------|
| SW Pipes              | 161,585 (m) | 109,578,286            |
| Box Culverts          | 11 (Nos)    | 2,783,622              |
| Major Culverts        | 11 (Nos)    | 1,482,730              |
| Open Channel Walls    | 11,624 (m2) | 9,420,888              |
| Trash Racks           | 13 (Nos)    | 125,675                |
| Side Entry Pits       | 3941 (Nos)  | 11,399,274             |
| Gross Pollutant Traps | 2 (Nos)     | 502,000                |
| Mesh pits             | 5 (Nos)     | 19,008                 |
| Open Channel Floors   | 10,928 (m2) | 4,943,285              |
| <b>TOTAL</b>          |             | <b>\$140,254,768</b>   |

#### Operation and Maintenance Strategies

The organisation will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities include:

- Scheduling operations activities to deliver the defined level of service in the most efficient manner,
- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes. Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 - 70% planned desirable as measured by cost),
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council,
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs,
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options,
- Maintain a current hierarchy of critical assets and required operations and maintenance activities,
- Develop and regularly review appropriate emergency response capability,
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

Standard Defects have been identified through CCTV survey are listed below:



Defective connection intruding into the main pipe



Pipe joint displacement due to root intrusion



Spalling of concrete at a pipe joint



Deposit of the debris obstructing the flow



Deposit of the debris obstructing the flow



Pipe joint displacement due to root intrusion





Deposit of the debris obstructing the flow



Services from third parties obstructing flow

Most of these maintenance defects are addressed at the time of survey (e.g. Deposits in the pipes and the root intrusions would be cleared while undertaking the work)

Locations of pipe joints displacements, Spalling of concrete etc will be noted in the Council Asset Management System for further monitoring.

Standard Defects have been identified through Side Entry Pit (SEP) Cleaning Works are listed below



Pit Cover damage



Pit cover surrounding (kerb) damage



Expired pit cover that require replacement



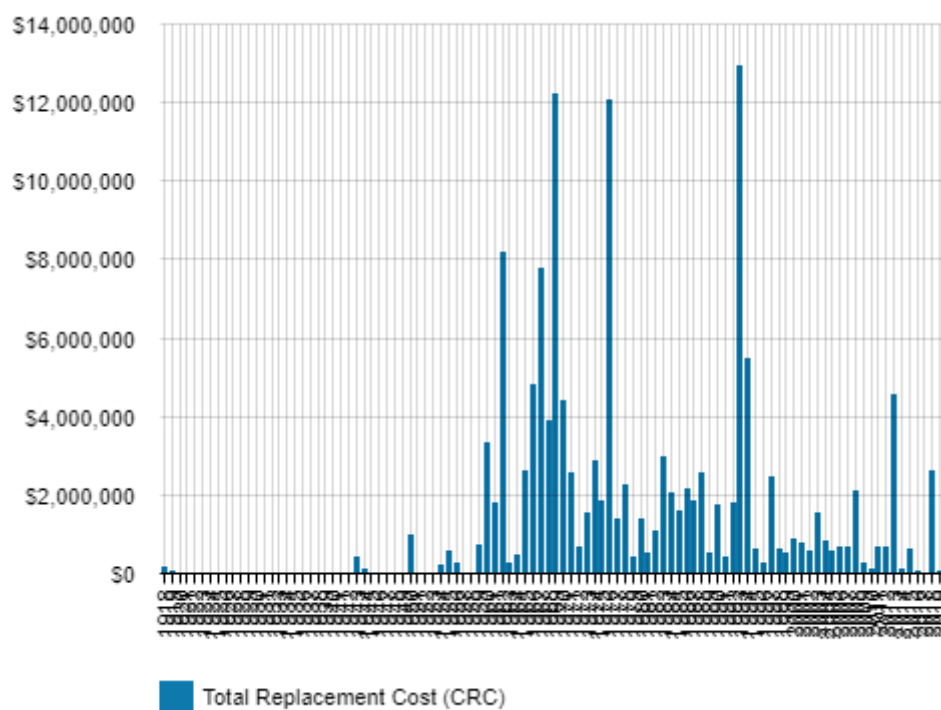
example of a recently repaired pit (cover and its surroundings)



The above photos show the most common defects that were identified through SEP cleaning works. In most cases, the pits are found to be in good serviceable condition.

The age profile of the assets included in this AMP are shown in Figure 5.1.1.

Figure 5.1.1: Asset Age Profile



All figures are shown in 2019 dollar values

The Asset age profile is shown from 1918 to 2019

### 5.1.2 Asset capacity and performance

In general terms it is believed that the SW network is meeting capacity and performance requirements.

In addition to the scheduled yearly CCTV survey and the twice a year SEP cleaning programme, regular SW network inspection and condition audits are carried out on the entire network every 4 years. A survey and condition audit was carried out on all Culverts, Open Channel Walls & Floors and Trash Racks in 2019.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

**Table 5.1.2: Known Service Performance Deficiencies**

| Location | Service Deficiency   |
|----------|--|
| Various  | Most of the SW related issues would be around the areas where no SW infrastructure exists or under capacity. |

The above service deficiencies were identified from regular inspections and customer notifications.

### 5.1.3 Asset condition

Apart from the scheduled condition assessment programme where SW assets are captured every four years, a further data capture programme will be developed to collect cyclic maintenance works. The asset condition survey is undertaken by experienced Council staff.

Condition is measured using a 1 – 5 grading system<sup>4</sup> as detailed in Table 5.1.3. It is important that consistent condition grades be used in reporting various assets across an organisation. This supports effective communication. At the detailed level assets may be measured utilising different condition scales, however, for reporting in the AMP they are all translated to the 1 – 5 grading scale.

**Table 5.1.3: Simple Condition Grading Model**

| Condition Grading | Description of Condition  |
|-------------------|---|
| 1                 | <b>Very Good:</b> only planned maintenance required               |
| 2                 | <b>Good:</b> minor maintenance required plus planned maintenance  |
| 3                 | <b>Fair:</b> significant maintenance required                     |
| 4                 | <b>Poor:</b> significant renewal/rehabilitation required          |
| 5                 | <b>Very Poor:</b> physically unsound and/or beyond rehabilitation |

The condition profile of our assets is shown in Figure 5.1.3.

**Figure 5.1.3: Asset Condition Profile**



<sup>4</sup> IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Notes: Given the scale of the graph the condition grading for the poor and very poor assets cannot be easily viewed and are detailed as (Condition 1 – \$2,926,519, Condition 2 – \$132,706,304, Condition 3 – \$3,819,499, Condition 4 - \$621,580 and Condition 5 - \$180,866).

All figure values are shown in 2019 dollar values.

## 5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include CCTV survey, SEP Cleaning, Street Sweeping and asset inspection costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include high pressure jetting, flood damage repairs, defects identified through scheduled CCTV inspections and SEP cleaning contracts.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

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

Specific maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacing air conditioning units, etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

The trend in maintenance budgets are shown in Table 5.2.1.

**Table 5.2.1: Maintenance & Operation Budget Trends**

| Year    | Operation Budget (\$) | Maintenance Budget \$ |
|---------|-----------------------|-----------------------|
| 2016/17 | 93,715                | 347,239               |
| 2017/18 | 109,106               | 256,724               |
| 2018/19 | 104,410               | 361,686               |

Note: For this AMP, for operation and maintenance budgets, average value of 2017/18 and 2018/19 budget figures are used

Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks will be identified and highlighted in this AMP and service risks considered in the Infrastructure Risk Management Plan.

Assessment and priority of reactive maintenance is undertaken by Staff using experience and judgement.

## Asset Hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting, with the service level hierarchy used for service planning and delivery.

The service hierarchy is shown in Table 5.2.2.

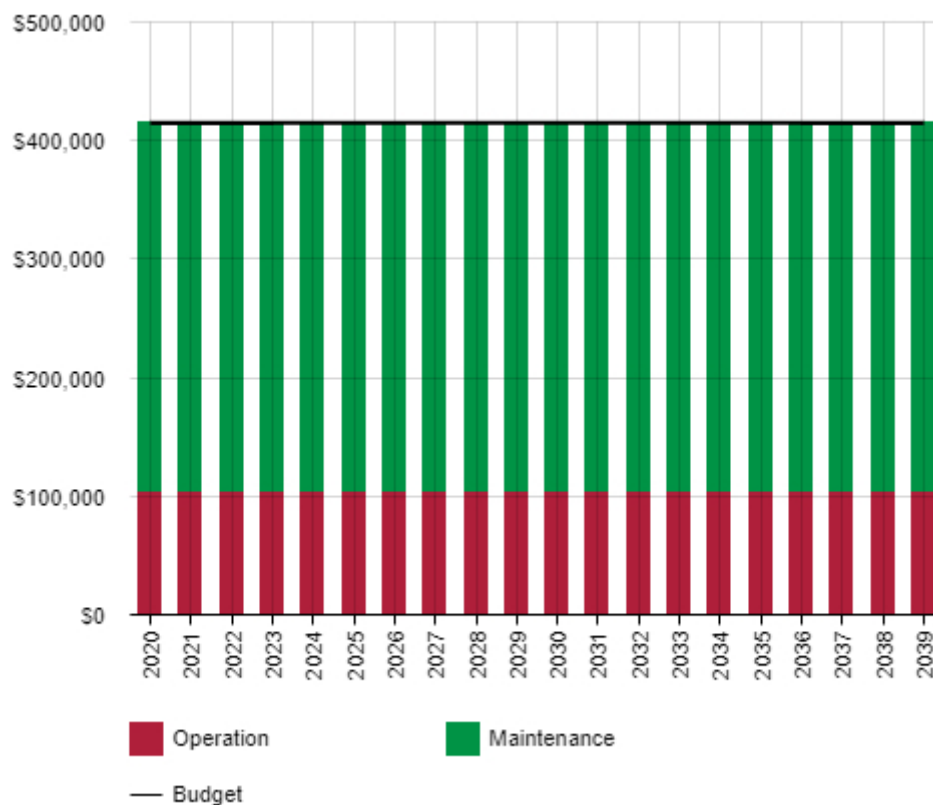
**Table 5.2.2: Asset Service Hierarchy**

| Service Hierarchy | Service Level Objective  |
|-------------------|--|
| SW Assets         | To provide a safe and serviceable SW network for the community |

## Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of and not replaced, the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

**Figure 5.2: Operations and Maintenance Summary**



Note that all costs are shown in 2019 dollar values

### 5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, 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 to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model:

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year)
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work. Examples include the use of the condition modelling system, staff judgement and average network renewals.

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed in 2018/2019 financial year as a part of scheduled condition survey assessment.

Table 5.3: Useful Lives of Assets

| Asset (Sub) Category       | Useful life (years) |
|----------------------------|---------------------|
| SW Pipes                   | 100                 |
| Culverts                   |                     |
| • Rock Headwall            | 30                  |
| • Concrete Apron           | 40                  |
| • Culvert                  | 100                 |
| Side Entry Pits/ Mesh Pits | 100                 |
| Open Channel               |                     |
| • Stone Wall               | 100                 |
| • Rock Wall                | 20                  |
| • Gabion Wall              | 30                  |
| • Concrete Wall            | 100                 |
| • Reno Mattress Floor      | 15                  |
| • Stone Floor              | 20                  |
| GPT system                 | 15                  |
| Trash Rack                 |                     |
| • Concrete Apron           | 40                  |
| • Steel Frame              | 15                  |
| • Headwall                 | 80                  |

The estimates for renewals in this AMP were based on the Asset Register method.

### 5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. adequate capacity of a pipe for a designed ARI event), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a SW Asset).<sup>5</sup>

It is possible to prioritise renewals by identifying assets or asset groups that have:

- Potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.
- Have a high utilisation and subsequent impact on users would be greatest,
- The total value represents the greatest net value to the organisation,
- Have the highest average age relative to their expected lives,
- Are identified in the AMP as key cost factors,
- Have high operational or maintenance costs, and
- Where replacement with modern equivalent assets would yield material savings.

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.3.1.

**Table 5.3.1: Renewal Priority Ranking Criteria**

| Criteria             | Weighting   |
|----------------------|-------------|
| Risk and Safety      | 30%         |
| Physical Condition   | 20%         |
| Financial impact     | 20%         |
| Social impact        | 15%         |
| Environmental Impact | 15%         |
| <b>Total</b>         | <b>100%</b> |

### 5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4. A detailed summary of the forecast renewal costs is shown in Appendix D.

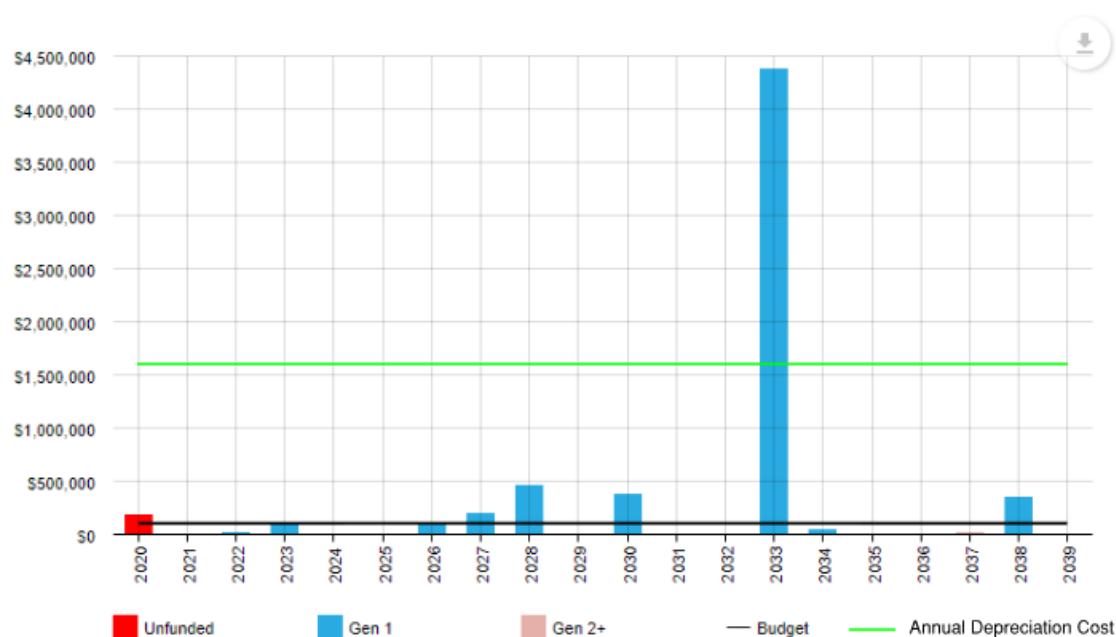
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<sup>5</sup> IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.



**Figure 5.4: Forecast Renewal Costs**

20 year cycle



Note:

The unfunded amount of \$180,866, year 2020, is associated with the following assets renewal works:

| *Asset Category              | Quantity | Renewal Amount (\$) |
|------------------------------|----------|---------------------|
| Side Entry Pit - Double      | 7 Nos    | 19,250              |
| Side Entry Pit - Single      | 14 Nos   | 36,816              |
| Open Channel – Concrete Wall | 172m2    | 124,800             |
| <b>Total</b>                 |          | <b>180,866</b>      |

\* - Complete list of assets that come under this category is listed in the Appendix D

Staff inspected these asset categories and have confident that the useful lives of these assets can be extended further based on a field condition assesement completed recently. Ongoing monitoring of the condition of these assets will be undertaken. Images below shows the recent photos taken from the site visits.

- Side Entry Pits – Double



SP1594 - Maryvale Road

Observation: Pit lids require replacement and surrounding require repair. Pit condition is good

- Side Entry Pits – Single



SP242 – Riverview

Observation: Pit lids require replacement and surrounding require repair. Pit condition is good

Almost all SEP inspected, it was observed that the pit condition appear to be in good condition. What is required on expired pit assets is either replacement of pit cover or to undertake the required repairs surrounding of the pit.

In the current asset registry, pit and the cover included as a single asset. Staff recommend that, for the better management of the Pit assets, the pit asset is to componentise as Pit and Pit Covers, as pit cover would have a shorter useful life compare to the pit.

- Open channel – Concrete Wall



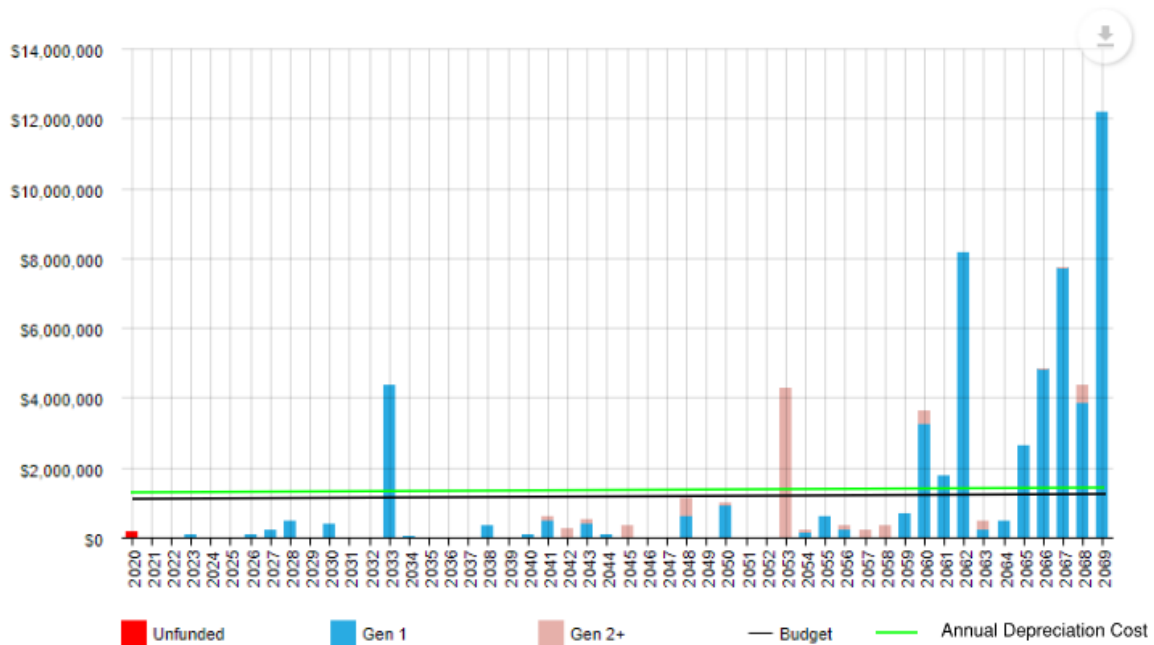
Riverview Drive – Asset ID 119713



River Drive – Asset ID 119714

Observation: As per Council Asset data, these walls were built in 1918. These wall have been weathered over the years and they do not pause foreseeable risk to the public if they fall. The staff have confidence that they will last few more years. However, these wall have been listed to inspect a twice a year in the asset inspection list in addition to the scheduled inspection which will occur in four yearly.

#### 50 year cycle



#### Notes:

- Budget shown on the 20year cycle graphs is \$105,000 which represent the 10year average renewal cost
- Budget shown on the 50 year cycle graphs is \$1,265,500 which represent the 50year average renewal cost. The significant increase between the 20 and 50 year cycles is due to storm water infrastructure having a long asset life.
- Annual depreciation cost is \$1,639,413

- Gen 1: refers to the first renewal figure shown on a particular asset, or group of assets, within the planning period.
- Gen 2: refers to the next generations of an asset, or group of assets, within the planning period. For example an asset with a 5 year life cycle would show up multiple times in a 20 year planning period.
- All figure values are shown in 2019 dollar values.

Recommendation:

The current modelling has done up to 50 years and most of the stormwater assets have longer life up to 100 years. Hence, it is recommended that the current replacement budget is maintained.

## 5.5 Acquisition Plan

Acquisitions are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity, which may result from growth, demand, social or environmental needs. SW Assets may also be donated to Council.

### 5.5.1 Selection Criteria

Proposed upgrade of existing assets and new assets are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with other parties. Potential upgrade and new works should be reviewed to verify that they are essential to the entity's needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority based on funding available, then scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

**Table 5.5.1: Acquired Assets Priority Ranking Criteria**

| Criteria             | Weighting   |
|----------------------|-------------|
| Social Impact        | 20%         |
| Financial Impact     | 20%         |
| Environmental impact | 15%         |
| Legislative Impact   | 20%         |
| Risk and Safety      | 25%         |
| <b>Total</b>         | <b>100%</b> |

Summary of future asset acquisition costs

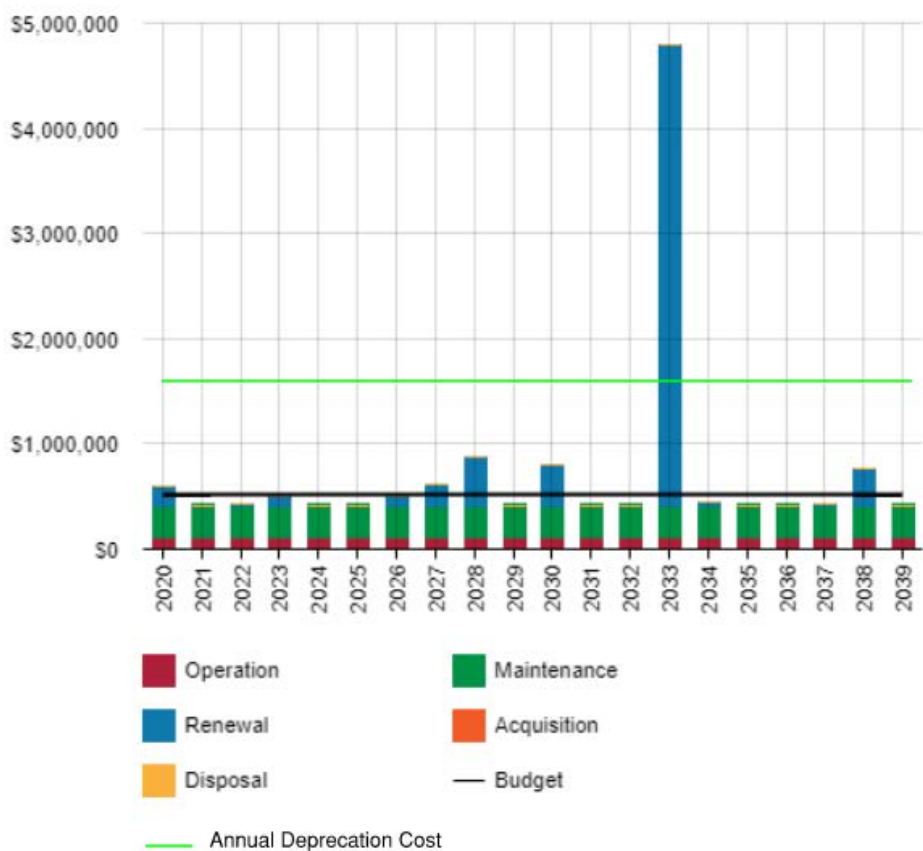
No projected capital upgrade/new asset expenditure is assumed for SW assets in the foreseeable future.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operations, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The graph represents the forecast costs needed to minimise the life cycle costs associated with the service provision. The gap between the forecast work and the proposed budget (available funding) is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



### **Summary of Total Funding**

- The above graph details total budget expenditure (Acquisitions, Operation, Maintenance and Renewal costs)
- No new works or Acquisitions have been identified in the next 10 years
- This plan is based on total budgeted expenditure for renewal works with 10 year average funding of \$105,000 per year
  - This level of funding create a surplus funding of \$346 per year for the next 10 year
  - It should be noted that this level of funding, if continued for 20 years, will create a shortfall of \$206,105 per year
- Further modelling indicates that
  - For 20year planning, it requires on an average \$315,000 per year to complete the renewal works
  - For 50year planning, it requires on an average \$1,265,500 per year to complete the renewal works
- The disposal life cycle costs shown are minimal, as these cost are built into renewal costs.
- Annual depreciation cost is \$1,639,413
- Figure Values are in 2019 dollar values.

### **5.6 Disposal Plan**

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of these assets are also outlined in Table 5.6.

Assets Identified for disposal is listed in Appendix D under 10year renewal programme. The disposal of cost of these assets are included in the asset replacement cost.



## 6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as ‘coordinated activities to direct and control with regard to risk’<sup>6</sup>.

An assessment of risks<sup>7</sup> associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

### 6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

**Table 6.1 Critical Assets**

| Critical Asset(s) | Failure Mode   | Impact  |
|-------------------|--|---|
| SW assets         | Possible flooding events, asset damage in extreme storm events | Nuisance and possible hazard to the community |

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

### 6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

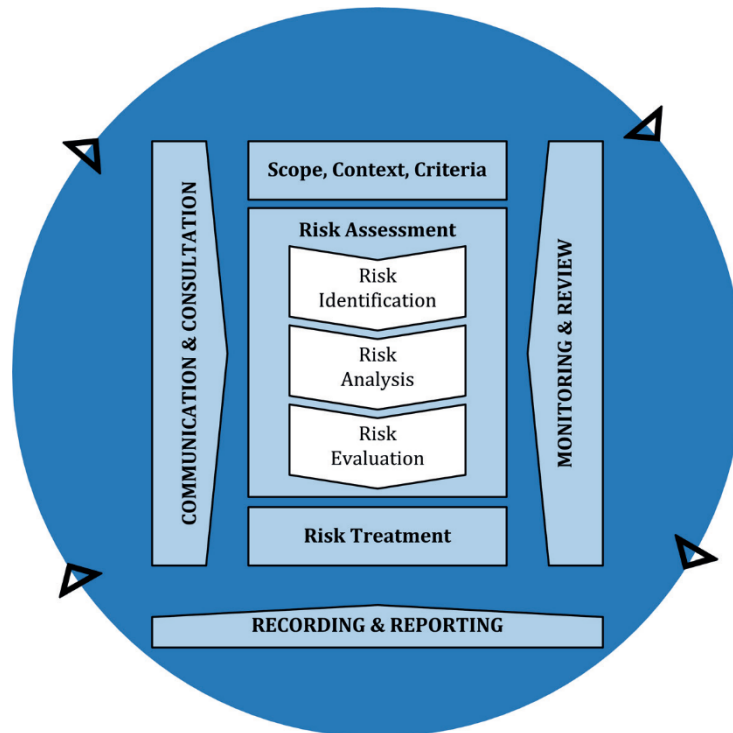
It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

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<sup>6</sup> ISO 31000:2009, p 2

<sup>7</sup> REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote



**Fig 6.2 Risk Management Process – Abridged**

*Source: ISO 31000:2018, Figure 1, p9*

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks<sup>8</sup> associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences.

Critical risks are those assessed with ‘Very High’ (requiring immediate corrective action) and ‘High’ (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management.

<sup>8</sup> REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

***Table 6.2: Risks and Treatment Plans***

| Service or Asset at Risk | What can Happen   | Risk Rating (VH, H) | Risk Treatment Plan  | Residual Risk * | Treatment Costs  |
|--------------------------|---|---------------------|--|-----------------|--|
| SW Assets in general     | Lack of funding to operate, maintain and renew assets   | VH                  | Asset data managed and maintained within an Asset Management System and fully utilised to perform analysis to assist in making informed decision and appropriate funding recognise in the LTFP e.g. determining optimum intervention levels, priorities etc. Implement the best cost effective and environmentally friendly options. | Low             | Can be significantly high depending on the asset type and option selected. |
|                          | Inadequate asset management planning  | H                   | Ensure essential information is captured in the Asset Management System – correct unit rates, useful lives and condition information to determine lifecycle costs.   | Low             | Can be significantly high depending on the accuracy of asset data.         |
|                          | Underestimated or unknown condition and lifecycle performance resulting in structural failure | H                   | Undertake regular survey and condition audits at least once every four years.<br><br>Review unit rates and useful lives on a yearly basis.   | Low             | Can be significantly high depending on the asset type.                     |
|                          | Under design of an asset  | H                   | Ensure all designs and construction complies with relevant Standards and Council requirements.   | Low             | Can be significantly high depending on the asset type.                     |

|  |  |   |  |     |  |
|--|--|---|--|-----|--|
|  | Changing environmental conditions                    | H | Record and monitor assets that are impacted by environmental changes. Investigate using different materials and techniques to counter changes.<br><br>Useful lives may be required to be shortened for assets in identified areas. | Low | Can be significantly high depending on the asset type and option selected. |
|  | Maintenance level below technical level or Standards | H | Ensure maintenance is carried out in accordance with Australian Standards and Council's specifications.  | Low | Can be significantly high depending on the asset type.                     |

Note \* The residual risk is the risk remaining after the selected risk treatment plan is implemented.

### 6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand' and to respond to possible disruptions to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity, climate change and crisis leadership.

We do not currently measure our resilience in service delivery. This will be included in future iterations of the AMP.

### 6.4 Service and Risk Trade-Offs

The decisions made in adopting this AMP are based on the objective to achieve the optimum benefits from the available resources.

#### 6.4.1 What we cannot do

This section is not applicable at present as Council will allocate sufficient funds to meet the delivery of SW assets for the next 10 years.

#### 6.4.2 Service trade-off

This section is not applicable at present as Council will allocate sufficient funds to meet the delivery of SW assets for the next 10 years.

#### 6.4.3 Risk trade-off

This section is not applicable at present as Council will allocate sufficient funds to meet the delivery of SW assets for the next 10 years.

## 7.0 FINANCIAL SUMMARY

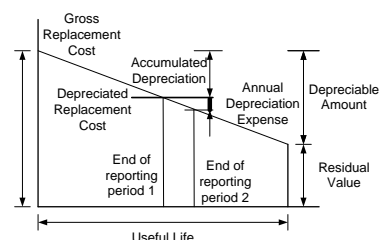
This section contains the financial requirements resulting from the information presented in the previous sections of this AMP. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

### 7.1 Financial Statements and Projections

#### 7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. The assets are valued at fair value at cost to replace service capacity:

|   |               |
|---|---------------|
| Current (Gross) Replacement Cost          | \$140,254,768 |
| Depreciable Amount                        | \$140,254,768 |
| Depreciated Replacement Cost <sup>9</sup> | \$84,237,416  |
| Depreciation                              | \$1,639,413   |



Key assumptions made in preparing the valuations were:

- Straight line depreciation
- All figures are based on 2018/19 unit rates
- Yearly review of Useful Lives and Unit Rates
- Apart from the annual CCTV survey and half yearly cleaning of the SEP's, regular condition surveys every 4 years of the SW assets

#### 7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AMP for this service area. The two indicators are the:

- Asset Renewal Funding Ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- Medium term forecast costs/proposed budget (over 10 years of the planning period).

##### Asset Renewal Funding Ratio

Asset Renewal Funding Ratio<sup>10</sup> 100.33%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 100.0% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

This AMP identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

<sup>9</sup> Also reported as Written Down Value, Carrying or Net Book Value.

<sup>10</sup> AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.



This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is an average of \$519,654 per year.

The proposed (budget) operations, maintenance and renewal funding is \$520,000 on average per year, meaning there is a surplus funding of \$346 per year for the next 10 years. This indicates that 100.08% of the forecast costs needed to provide the services documented in this AMP are accommodated in the proposed budget. This calculation is based on existing assets only.

### **Long Term – 50 year financial planning period**

#### **Summary of finance**

- Planned total budget per year is \$1,265,500
- Total funding required to complete renewal works is \$63,274,381 (50 year period)
- Total fund available (assuming \$1,265,500 renewal funding will be available each planning year) to complete required renewal work is \$63,275,000 (50 year period)
- Asset Renewal Funding Ratio is 100%
- Surplus funding is \$12 per year
- Annual depreciation is \$1,639,413

### **7.1.3 Forecast Costs (outlays) for the long-term financial plan**

Table 7.1.3 shows the forecast costs (outlays) for the 10 year LTFP.

Forecast costs are shown in 2018/2019 dollar values.

**Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan(\$)**

| Year | Forecast Acquisition (\$) | Forecast Operation (\$) | Forecast Maintenance (\$) | Forecast Renewal (\$) | Forecast Disposal (\$) |
|------|---------------------------|-------------------------|---------------------------|-----------------------|------------------------|
| 2020 | -                         | 105,000                 | 310,000                   | 180,866               | -                      |
| 2021 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2022 | -                         | 105,000                 | 310,000                   | 19,622                | -                      |
| 2023 | -                         | 105,000                 | 310,000                   | 90,113                | -                      |
| 2024 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2025 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2026 | -                         | 105,000                 | 310,000                   | 95,863                | -                      |
| 2027 | -                         | 105,000                 | 310,000                   | 195,500               | -                      |
| 2028 | -                         | 105,000                 | 310,000                   | 464,573               | -                      |
| 2029 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2030 | -                         | 105,000                 | 310,000                   | 378,723               | -                      |
| 2031 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2032 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2033 | -                         | 105,000                 | 310,000                   | 4,380,172             | -                      |
| 2034 | -                         | 105,000                 | 310,000                   | 41,709                | -                      |
| 2035 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2036 | -                         | 105,000                 | 310,000                   | -                     | -                      |
| 2037 | -                         | 105,000                 | 310,000                   | 19,622                | -                      |
| 2038 | -                         | 105,000                 | 310,000                   | 353,537               | -                      |
| 2039 | -                         | 105,000                 | 310,000                   | -                     | -                      |

## 7.2 Funding Strategy

The proposed funding for assets is outlined in Council's budget and LTFP.

The financial strategy of Council determines how funding will be provided, whereas the AMP communicates how and when it will be spent, along with the service and risk consequences of various service alternatives.

## 7.3 Valuation Forecasts

During the formulation of this plan, it is anticipated that asset numbers are forecast to remain consistent as there is no plan to add or remove assets from service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future replacement cost forecasts.

## 7.4 Key Assumptions Made in Financial Forecasts

In compiling this AMP, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AMP and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AMP are:

- Council Asset Data registry reflects accurate data with a confidence level of  $\pm 10\%$
- Operation and Maintenance cost remain within the same range for the next 10 years
- Council will allocate sufficient funding to meet operations, maintenance and renewal expenditure.
- The useful Lives of the SW assets are accurate
- Present service levels to remain constant over the life of this AMP
- Nil Growth
- All valuations are based on 2018/19 unit rates

## 7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale<sup>11</sup> in accordance with Table 7.5.1.

**Table 7.5.1: Data Confidence Grading System**

| Confidence Grade   | Description  |
|--------------------|--|
| A. Highly reliable | Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$ .  |
| B. Reliable        | Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings. For example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$ . |
| C. Uncertain       | Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$ .                             |
| D. Very Uncertain  | Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy $\pm 40\%$ .  |
| E. Unknown         | None or very little data held.   |

The estimated confidence level for and reliability of data used in this AMP is shown in Table 6.5.1.

<sup>11</sup> IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

**Table 7.5.1: Data Confidence Assessment for Data used in AMP**

| <b>Data</b>                        | <b>Confidence Assessment</b> | <b>Comment</b>  |
|------------------------------------|------------------------------|---|
| Demand drivers                     | Reliable                     | Based on Council's adopted Asset Management Policy  |
| Growth projections                 | Reliable                     | Data based on government populations data   |
| Acquisition forecast               | Reliable                     | Data based on past experience   |
| Operation forecast                 | Reliable                     | Expenditures have been apportioned across each asset class  |
| Maintenance forecast               | Reliable                     | Council will allocate sufficient funds to meet maintenance forecast   |
| Renewal forecast<br>- Asset values | Reliable                     | Unit Rates are reviewed each year and endorsed independently. Asset values are calculated using unit rates multiplied by valuation measurement. |
| - Asset useful lives               | Reliable                     | Useful lives are reviewed yearly and endorsed independently.  |
| - Condition modelling              | Reliable                     | Council undertakes a detailed bridge survey and condition audit every 4 years.  |
| Disposal forecast                  | Reliable                     | Based on the financial data   |

## 8.0 PLAN IMPROVEMENT AND MONITORING

### 8.1 Status of Asset Management Practices<sup>12</sup>

#### 8.1.1 Accounting and Financial Data Sources

This AMP utilises accounting and financial data. The source of the data is from Council's corporate finance system, Finance One.

#### 8.1.2 Asset Management Data Sources

This AMP also utilises asset management data. The source of the data is from Council's Asset Management Data System, Conquest.

### 8.2 Improvement Plan

It is important that an entity recognise areas of their AMP and planning process that requires future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AMP is shown in Table 8.2.

**Table 8.2: Improvement Plan**

| Task | Task   | Responsibility                          | Resources Required  | Timeline     |
|------|--|---|---|--------------|
| 1    | Further develop Mobile Technology for field work defect recording and Maintenance Management in Conquest AMS | GIS Analyst, Team Leader Asset Planning | GIS Analyst, Team Leader Asset Planning, IT, Depot Staff<br>Equipment:<br>Mobile Device | 1 to 2 years |

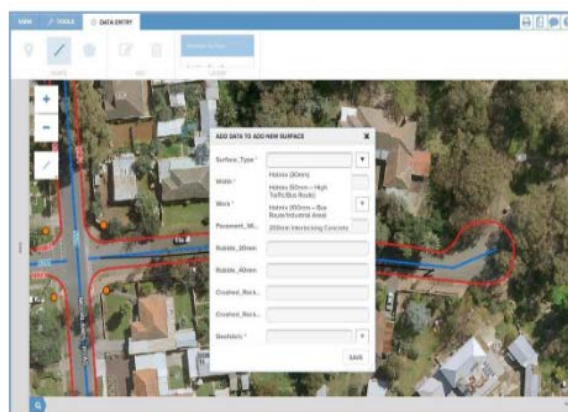
*SEP Assets Cleaning Programme – recording the data in the field*



<sup>12</sup> ISO 55000 Refers to this the Asset Management System

|   |  |  |  |                               |
|---|--|--|--|-------------------------------|
| 2 | Continue program for data collection of cyclic maintenance works                                 | GIS Analyst, Team Leader Asset Planning, Coordinators, Team Leaders, Outside Staff | GIS Analyst, Team Leader Asset Planning, Depot Staff<br>Equipment: Mobile Device | Ongoing for all Asset Classes |
| 3 | Develop Inspection Regimes for expired Assets (Fully Depreciated Assets past their useful lives) | GIS Analyst, Team Leader Asset Planning, Coordinators, Team Leaders, Outside Staff | GIS Analyst, Team Leader Asset Planning, Depot Staff<br>Equipment: Mobile Device | 12 month cycle                |

**Recording Proposed Capital Works in the field**



**Recording Proposed Capital Works in the field – Mapped**



|   |                                       |  |  |                |
|---|---------------------------------------|--|--|----------------|
| 4 | Undertake risk assessment inspections | GIS Analyst, Team Leader Asset Planning, Coordinators, Team Leaders, Outside Staff | GIS Analyst, Team Leader Asset Planning, Depot Staff<br>Equipment: Mobile Device | 12 month cycle |
|---|---------------------------------------|--|--|----------------|

|   |   |  |  |          |
|---|---|--|--|----------|
| 5 | Componatise Side Entry Pits( Pit Cover and the Pit) to better manage the renewals | GIS Analyst, Team Leader Asset Planning, Coordinators, Team Leaders, Outside Staff | GIS Analyst, Team Leader Asset Planning, Depot Staff<br>Equipment: Mobile Device | 6 months |
|---|---|--|--|----------|

### 8.3 Monitoring and Review Procedures

This AMP will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AMP will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of appointment of new Council.

### 8.4 Performance Measures

The effectiveness of this AMP can be measured in the following ways:

- The degree to which the required forecast costs identified in this AMP are incorporated into the LTFP
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures take into account the 'global' works program trends provided by the AMP
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Plan and associated plans
- The Asset Renewal Funding Ratio achieving Council's adopted target (100%).



## 9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/IIMM](http://www.ipwea.org/IIMM)
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/namsplus](http://www.ipwea.org/namsplus).
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/AIFMM](http://www.ipwea.org/AIFMM).
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/IIMM](http://www.ipwea.org/IIMM)
- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Towards 2020 – Campbelltown City Council Strategic Plan
- Annual Financial Statements for the Year Ended 30 June 2019.

## **10.0 APPENDICES**

### **Appendix A    Acquisition Forecast – N/A**

## Appendix B      Operation Forecast

### B.1 – Operation Forecast Assumptions and Source

Operation costs will remain unchanged for next 20 years. The operation forecast figure listed in the table below is based on the average operation costs that Council has incurred in the last two financial years.

### B.2 – Operation Forecast Summary

NAMS+ Outputs Summary for Renewal

**Table B2 - Operation Forecast Summary**

| Year | Operation Forecast (\$) | Additional Operation Forecast (\$) | Total Operation Forecast (\$) |
|------|-------------------------|------------------------------------|-------------------------------|
| 2020 | 105,000                 | -                                  | 105,000                       |
| 2021 | 105,000                 | -                                  | 105,000                       |
| 2022 | 105,000                 | -                                  | 105,000                       |
| 2023 | 105,000                 | -                                  | 105,000                       |
| 2024 | 105,000                 | -                                  | 105,000                       |
| 2025 | 105,000                 | -                                  | 105,000                       |
| 2026 | 105,000                 | -                                  | 105,000                       |
| 2027 | 105,000                 | -                                  | 105,000                       |
| 2028 | 105,000                 | -                                  | 105,000                       |
| 2029 | 105,000                 | -                                  | 105,000                       |
| 2030 | 105,000                 | -                                  | 105,000                       |
| 2031 | 105,000                 | -                                  | 105,000                       |
| 2032 | 105,000                 | -                                  | 105,000                       |
| 2033 | 105,000                 | -                                  | 105,000                       |
| 2034 | 105,000                 | -                                  | 105,000                       |
| 2035 | 105,000                 | -                                  | 105,000                       |
| 2036 | 105,000                 | -                                  | 105,000                       |
| 2037 | 105,000                 | -                                  | 105,000                       |
| 2038 | 105,000                 | -                                  | 105,000                       |
| 2039 | 105,000                 | -                                  | 105,000                       |

## Appendix C      Maintenance Forecast

### C.1 – Maintenance Forecast Assumptions and Source

Maintenance costs will remain unchanged for next 20 years. The maintenance cost forecast figure listed in the table below is the average maintenance costs that Council has incurred in the last two financial years.

### C.2 – Maintenance Forecast Summary

NAMS+ Outputs Summary for Renewal

**Table C2 - Maintenance Forecast Summary**

| Year | Maintenance Forecast (\$) | Additional Maintenance Forecast (\$) | Total Maintenance Forecast (\$) |
|------|---------------------------|--------------------------------------|---------------------------------|
| 2020 | 310,000                   | -                                    | 310,000                         |
| 2021 | 310,000                   | -                                    | 310,000                         |
| 2022 | 310,000                   | -                                    | 310,000                         |
| 2023 | 310,000                   | -                                    | 310,000                         |
| 2024 | 310,000                   | -                                    | 310,000                         |
| 2025 | 310,000                   | -                                    | 310,000                         |
| 2026 | 310,000                   | -                                    | 310,000                         |
| 2027 | 310,000                   | -                                    | 310,000                         |
| 2028 | 310,000                   | -                                    | 310,000                         |
| 2029 | 310,000                   | -                                    | 310,000                         |
| 2030 | 310,000                   | -                                    | 310,000                         |
| 2031 | 310,000                   | -                                    | 310,000                         |
| 2032 | 310,000                   | -                                    | 310,000                         |
| 2033 | 310,000                   | -                                    | 310,000                         |
| 2034 | 310,000                   | -                                    | 310,000                         |
| 2035 | 310,000                   | -                                    | 310,000                         |
| 2036 | 310,000                   | -                                    | 310,000                         |
| 2037 | 310,000                   | -                                    | 310,000                         |
| 2038 | 310,000                   | -                                    | 310,000                         |
| 2039 | 310,000                   | -                                    | 310,000                         |

## Appendix D    Renewal Forecast Summary

### D.1 – Renewal Forecast Assumptions and Source

The renewal summary is generated through National Asset Management System+ (NAMS+) based on the information contained in Council's Asset Register.

It is assumed that Council will allocate enough funds to meet the renewal projects expenditure.

### D.2 – Renewal Project Summary

The project titles included in the lifecycle forecast are included in the table D.4

### D.3 – Renewal Forecast Summary

NAMS+ Outputs Summary for Renewal

***Table D3 - Renewal Forecast Summary***

| Year | Renewal Forecast (\$) | Renewal Budget (\$) |
|------|-----------------------|---------------------|
| 2020 | 180,866               | 105,000             |
| 2021 | -                     | 105,000             |
| 2022 | 19,622                | 105,000             |
| 2023 | 90,113                | 105,000             |
| 2024 | -                     | 105,000             |
| 2025 | -                     | 105,000             |
| 2026 | 95,863                | 105,000             |
| 2027 | 195,500               | 105,000             |
| 2028 | 464,573               | 105,000             |
| 2029 | -                     | 105,000             |
| 2030 | 378,723               | 105,000             |
| 2031 | -                     | 105,000             |
| 2032 | -                     | 105,000             |
| 2033 | 4,380,172             | 105,000             |
| 2034 | 41,709                | 105,000             |
| 2035 | -                     | 105,000             |
| 2036 | -                     | 105,000             |
| 2037 | 19,622                | 105,000             |
| 2038 | 353,537               | 105,000             |
| 2039 | -                     | 105,000             |

#### D.4 –Renewal Plan

Detail output from NAMS+ Report for the Register Method

##### 10 Year Renewal Plan

| Asset ID                                | Asset Category               | Location              | Planned<br>Renewal Year | Renewal<br>Forecast (\$) |
|---|------------------------------|-----------------------|-------------------------|--------------------------|
| 119713                                  | Open Channel - Concrete Wall | Riverview Drive       | 2018                    | 69,656                   |
| 119714                                  | Open Channel - Concrete Wall | Riverview Drive       | 2018                    | 55,144                   |
| 115624                                  | Side Entry Pit - Single      | Adela Crescent        | 2018                    | 2,301                    |
| 116298                                  | Side Entry Pit - Single      | Colton Avenue         | 2018                    | 2,301                    |
| 116795                                  | Side Entry Pit - Single      | Gladstone Avenue      | 2018                    | 2,301                    |
| 117519                                  | Side Entry Pit - Single      | Lorne Avenue          | 2018                    | 2,301                    |
| 117614                                  | Side Entry Pit - Double      | Maple Avenue          | 2018                    | 3,850                    |
| 117644                                  | Side Entry Pit - Double      | Maryvale Road         | 2018                    | 3,850                    |
| 117821                                  | Side Entry Pit - Double      | Moore Street          | 2018                    | 2,301                    |
| 117907                                  | Side Entry Pit - Double      | Nightingale Avenue    | 2018                    | 3,850                    |
| 117816                                  | Side Entry Pit - Double      | Moore Crescent        | 2019                    | 2,301                    |
| 117563                                  | Side Entry Pit - Double      | Lower Athelstone Road | 2019                    | 3,850                    |
| 117581                                  | Side Entry Pit - Single      | Lower North East Road | 2019                    | 2,301                    |
| 116132                                  | Side Entry Pit - Single      | Carlow Avenue         | 2019                    | 2,301                    |
| 116518                                  | Side Entry Pit - Single      | Edmund Avenue         | 2019                    | 2,301                    |
| 115473                                  | Side Entry Pit - Double      | Riverview Drive       | 2019                    | 3,850                    |
| 115495                                  | Side Entry Pit - Single      | Riverview Drive       | 2019                    | 2,301                    |
| 115512                                  | Side Entry Pit - Single      | Else Avenue           | 2019                    | 2,301                    |
| 115532                                  | Side Entry Pit - Single      | Shepherd Lane         | 2019                    | 2,301                    |
| 115493                                  | Side Entry Pit - Single      | Riverview Drive       | 2019                    | 2,301                    |
| 118183                                  | Side Entry Pit - Single      | Rangeview Drive       | 2019                    | 2,301                    |
| 118234                                  | Side Entry Pit - Single      | Reserve Road          | 2019                    | 2,301                    |
| 119050                                  | Side Entry Pit - Single      | Wessen Street         | 2019                    | 2,301                    |
| <b>Total Backlog</b>                    |                              |                       |                         | <b>\$180,866</b>         |
| Asset ID                                | Asset Category               | Location              | Planned<br>Renewal Year | Renewal<br>Forecast (\$) |
| 119891                                  | Reno Mattress Floor          | Balmoral Avenue       | 2022                    | 5,606                    |
| 119892                                  | Reno Mattress Floor          | Balmoral Avenue       | 2022                    | 4,205                    |
| 119893                                  | Reno Mattress Floor          | Windsor Avenue        | 2022                    | 9,811                    |
| <b>Total Renewals for the Year 2022</b> |                              |                       |                         | <b>\$19,622</b>          |
| 119933                                  | Stone Floor                  | Greenbank Road        | 2023                    | 46,859                   |
| 119928                                  | Concrete Floor (300mm thick) | Emerald Court         | 2023                    | 43,254                   |
| <b>Total Renewals for the Year 2023</b> |                              |                       |                         | <b>\$90,113</b>          |

| Asset ID                                | Asset Category                                    | Location   | Planned<br>Renewal Year | Renewal<br>Forecast (\$) |
|---|---|--|-------------------------|--------------------------|
| 119900                                  | Reno Mattress Floor                               | Maynard Avenue                                   | 2026                    | 25,227                   |
| 119903                                  | Reno Mattress Floor                               | Meadow Avenue                                    | 2026                    | 8,409                    |
| 119878                                  | Reno Mattress Floor                               | Freeman Avenue                                   | 2026                    | 18,500                   |
| 119883                                  | Reno Mattress Floor                               | Lower North East Road                            | 2026                    | 25,507                   |
| 119884                                  | Reno Mattress Floor                               | Lower North East Road                            | 2026                    | 5,606                    |
| 119885                                  | Reno Mattress Floor                               | Lower North East Road                            | 2026                    | 2,242                    |
| 119759                                  | Gabion Wall                                       | Verco Court                                      | 2026                    | 3,673                    |
| 119955                                  | Trash Rack Frame Type 1<br>(Bracket/Frame)        | River Torrens Linear Park<br>Near Clark Crescent | 2026                    | 2,079                    |
| 119970                                  | Trash Rack Frame Type 1<br>(Bracket/Frame)        | Athelstone Recreation Res                        | 2026                    | 4,620                    |
| <b>Total Renewals for the Year 2026</b> |   |  |                         | <b>\$95,863</b>          |
| 34869                                   | Continuous Deflective<br>Speparation (CDS) System | Avenue Road, Paradise                            | 2027                    | 195,500                  |
| <b>Total Renewals for the Year 2027</b> |   |  |                         | <b>\$195,500</b>         |
| 119901                                  | Stone Floor                                       | Maynard Avenue                                   | 2028                    | 10,299                   |
| 119902                                  | Stone Floor                                       | Verco Court                                      | 2028                    | 12,358                   |
| 119899                                  | Stone Floor                                       | Avenida Street                                   | 2028                    | 23,172                   |
| 119897                                  | Concrete Floor (300mm thick)                      | Shakespeare Avenue                               | 2028                    | 225,541                  |
| 119926                                  | Stone Floor                                       | Range Road                                       | 2028                    | 10,299                   |
| 119931                                  | Stone Floor                                       | Greenbank Road                                   | 2028                    | 9,269                    |
| 119932                                  | Stone Floor                                       | Gladys Crescent                                  | 2028                    | 5,664                    |
| 119907                                  | Concrete Floor (300mm thick)                      | Galway Grove                                     | 2028                    | 136,560                  |
| 119924                                  | Stone Floor                                       | Stoneybrook Drive                                | 2028                    | 3,090                    |
| 119943                                  | Rock Floor  | Riverview Drive                                  | 2028                    | 28,321                   |
| <b>Total Renewals for the Year 2028</b> |   |  |                         | <b>\$464,573</b>         |





## Appendix F Budget Summary by Lifecycle Activity

### Key Assumptions Made:

- The existing SW assets will achieve their assumed useful life
- The existing SW asset classes have been constructed using sound engineering and design practices to ensure they are fit for purpose
- The unit rates for replacement of SW asset classes are realistic
- Accuracy of future financial forecasts may be improved in future revisions of the SW AMP
- No acquisitions planned for the next 20 years
- Operation and maintenance costs and service levels remain the same for next 20 years.

***Table F1 – Budget Summary by Lifecycle Activity***

| Year | Acquisition (\$) | Operation (\$) | Maintenance (\$) | Renewal (\$) | Disposal (\$) | Total (\$) |
|------|------------------|----------------|------------------|--------------|---------------|------------|
| 2020 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2021 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2022 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2023 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2024 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2025 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2026 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2027 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2028 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2029 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2030 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2031 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2032 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2033 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2034 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2035 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2036 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2037 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2038 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |
| 2039 | -                | 105,000        | 310,000          | 105,000      | -             | 520,000    |