



STORMWATER DRAINAGE ASSET MANAGEMENT PLAN (DRAFT)



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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

This Asset Management Plan (AM Plan) 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 years planning period. The AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provide Stormwater Drainage.

The Stormwater Drainage network comprises:

- Stormwater Pipes
- Stormwater Pits
- Box Culverts
- Pipe Culverts
- Open Channel Drainage
- Stormwater Storage Basin

Asset category	Dimension	Total Replacement Value (\$Million)
Stormwater Pipe	45,702 metres	\$13.814
Stormwater Pits/Manhole/Gully Pits	1571 Nos.	\$5.346
Box culverts	158 Nos.	\$7.956
Pipe Culverts >600 mm diameter	399 Nos.	\$7.339
Unformed Open Drains	No Data kept in register	Nil
Formed Open Drains	No Data in Register. To be captured.	To be determined.

Wet Land (Formed), Gross Pollutant Trap and Detention Ponds	No Data in Register. To be captured.	To be determined.
Kerb & Gutter	Included in Transport Asset Management Plan	N/A
TOTAL		\$ 34.455

1.3 Levels of Service

The allocation in the planned budget is not sufficient to continue providing existing services at current levels for the planning period.

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Population change
- Climate change
- Economic factors
- Seasonal factors
- Environmental awareness

These demands will be approached using a combination of managing existing assets, 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 AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Stormwater Drainage is estimated as \$17,594,138 or \$1,759,414 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is \$1,511,990 or \$151,199 on average per year as per the Long-Term Financial plan or Planned Budget. This is 8.59% 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 long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Stormwater Drainage Assets leaves a shortfall of \$-1,608,215 on average per year of the forecast lifecycle costs required to provide services in the AM Plan 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

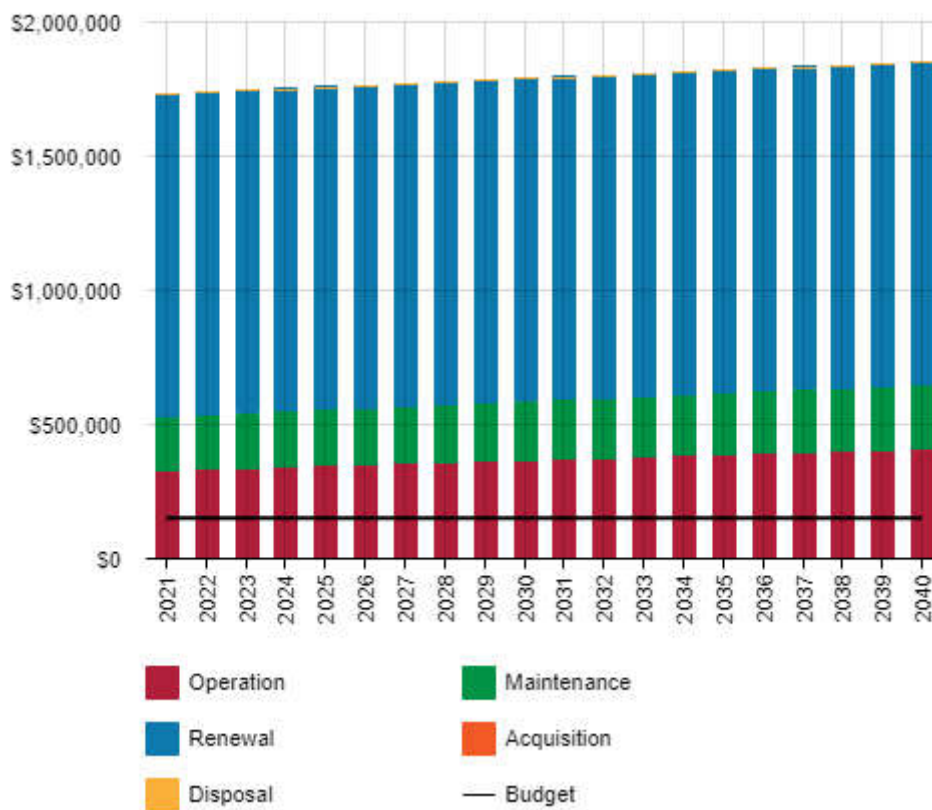


Figure Values are in current dollars.

We plan to provide Stormwater assets drainage services for the following:

Operation, maintenance, renewal and acquisition of stormwater assets to meet service levels set by Council in annual budgets. Although stormwater assets have long useful life and we do not have any condition data currently, it is essential to include renewal in the budget every year and reserve fund to replace these assets when necessary.

1.6.2 What we cannot do

We currently do **not** allocate sufficient budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Not replacing any assets.
- No new construction of assets.
- No renewal of any asset.
- No maintenance of open drains except mowing in some small areas

1.6.3 Managing the Risks

Our present budget levels are not sufficient to continue to manage risks in the medium term. The main risk consequences are:

- Frequency of flood events increasing due to increasing stormwater runoff;
- Stormwater of poor quality entering the receiving waters and wider environment; and
- Community expectations are not met.

1.7 Asset Management Planning Practices

Standards and specifications

New and upgrade work is carried out in accordance with the following Standards and Specifications.

- Aus Spec
- Australian Rainfall and Runoff
- Council's Policies and Procedures
- Australian Infrastructure Financial Management Guidelines 2009, IPWEA Version 1.
International Infrastructure Management Manual, IPWEA

Accounting/Financial Systems

The Local Government Act 1993 requires Council to prepare an annual report on its achievements with respect to the objectives and performance targets set out in its Operational Plan for that year. This report provides Council's audited financial statements including the condition of public works

under the control of the council as at the end of that year, together with:

- An estimate (at current values) of the amount of money required to bring the works up to a satisfactory standard; and
- An estimate (at current values) of the annual expense of maintaining the works at that standard; and
- The council's program of maintenance for that year in respect of the works.

Australian Accounting Standard (AAS) 27 is applicable to financial reporting by local governments, and provides guidelines for accounting methods and procedures

1.8 Monitoring and Improvement Program

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

- Prioritising acquisition expenditure;
- Establishing a formal condition rating process.
- Reviewing opportunities for stormwater reuse and WSUD;
- Reviewing resilience of critical infrastructure; and
- Reviewing adaptive technologies to prolong the life of assets.

2.0 INTRODUCTION

2.1 Background

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

The AM Plan is to be read with the YVC Stormwater Drainage Asset Management Plan planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Yass Valley Community Strategic Plan 2042
- Yass Valley Council 4 Year Delivery Plan
- Yass Valley Council Operational Plan

The infrastructure assets covered by this AM Plan include Stormwater Drainage assets. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

The infrastructure assets included in this plan have a total replacement value of \$34,455,219.

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

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none">■ Represent needs of community/shareholders,■ Allocate resources to meet planning objectives in providing services while managing risks,■ Ensure service sustainable.■ Responsible for overall endorsement and adoption of the Asset Management Plan and ensuring sufficient funding and resources are provided to comply with the target Levels of Service committed in the Asset Management Plan.
Executive Management Team	Follow up and report on the current status and provide guidance and direction for the future improvement of the Asset Management Plan.
Asset Engineer	To maintain and update Asset Registers, assist ESM to develop and implementation of Asset Management Plan and related plans.
Manager Road Delivery	Execute the Asset Management Plan for the assets under their portfolio.

Key Stakeholder	Role in Asset Management Plan
Engineering Services Manager	Execute the Asset Management Plan for the assets under their portfolio.
Government Authorities and Agencies	Regulate standards and practices through Legislation
Council Staff	Responsible for the undertaking the tasks allocated to them within the Asset Management Plan.
Community Members (Residents)	Contribute during the process to identify Level of Service in Asset Management Plan.

2.2 Goals and Objectives of Asset Ownership

Our goal for 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 Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

- Levels of service – specifies the services and levels of service to be provided,
- Risk Management,
- 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 we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

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

- International Infrastructure Management Manual 2015 ¹

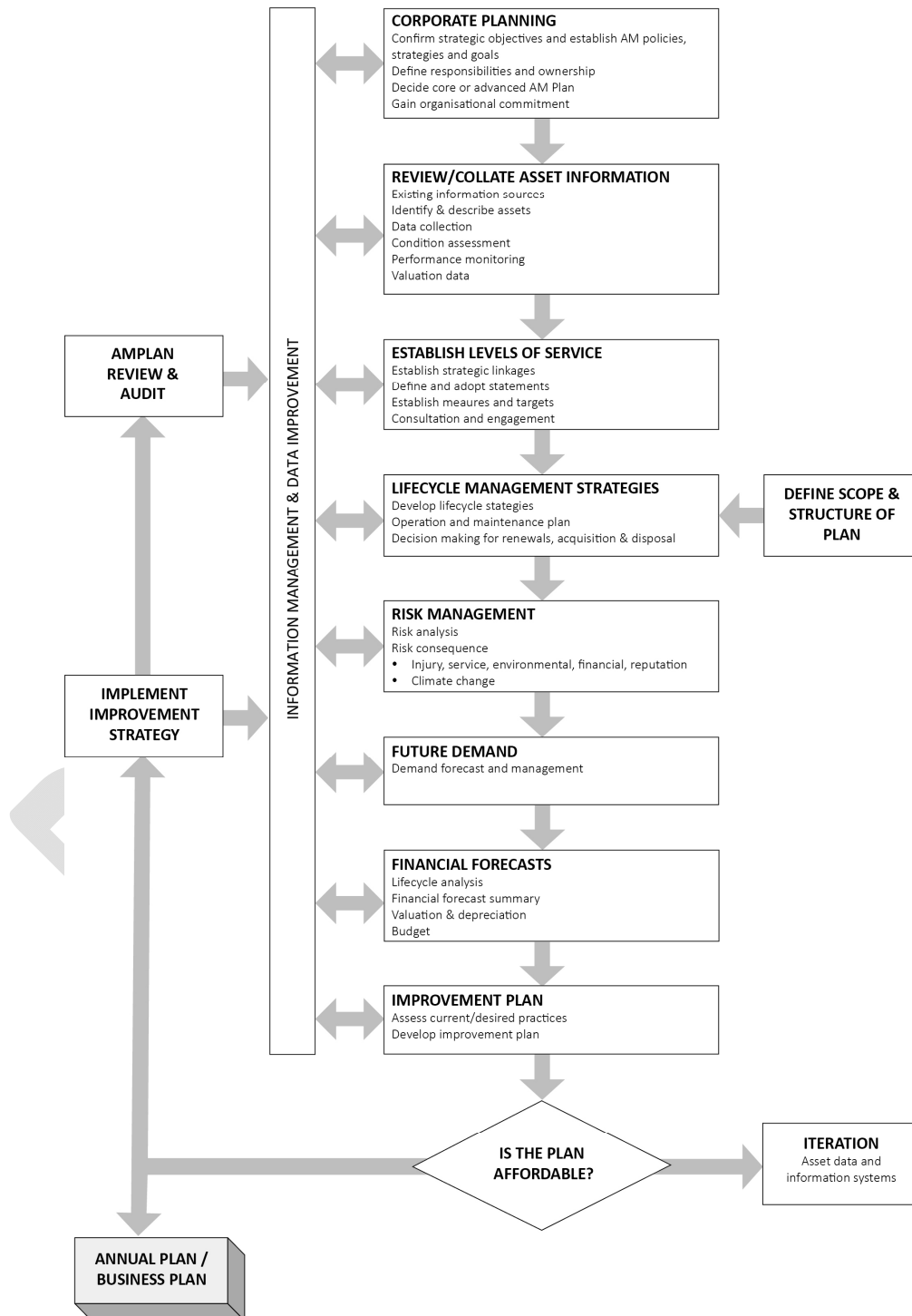
¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

- ISO 55000²

A road map for preparing an AM Plan is shown below.

Road Map for preparing an Asset Management Plan

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



² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

Council has not carried out any detailed research on customer expectations. This will be investigated for future updates of the asset management plan and will require significant community engagement as well as the development of various scenarios which include different possible levels of service and the corresponding cost of providing each of these. Council and the community will need to decide the desired service levels and determine how this will be funded via a long term financial plan.

This Asset Management Plan has adopted Council's current position in terms of available funding and service levels in order to provide a baseline which can be used as the basis for undertaking further community engagement on desired service levels.

It is expected that any increase in service levels over and above that currently provided will involve construction and/or upgrading of a substantial amount of infrastructure and this will need to be carefully considered and modelled in Councils long term financial plan to ensure its provision is sustainable.

We currently have no research on customer expectations. This will be investigated for future updates of the AM Plan.

3.2 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the YVC Stormwater Drainage Asset Management Plan vision, mission, goals and objectives.

This asset management plan is prepared under the direction of Council's Community Strategic Plan and Delivery Plan.

- Council plans to operate and maintain the stormwater network to achieve the following strategic objectives.
- Stormwater management plans are developed for all urban areas to identify requirements for new assets.
- Identify the funding gap through development of a Stormwater Management Plan and include requirements in Councils long term financial plan.
- Identify potential grant funding opportunities.
- Ensure that adequate stormwater infrastructure is provided for new development areas.

Ensure that the existing infrastructure is adequately maintained to ensure efficiency of the existing system.

3.3 Legislative Requirements

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

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of Local Governments agencies; including the need for the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Roads Act 1993	Sets out the powers and duties delegated to Council's, as roads authorities, in management of roads and road related areas.
The Australian Accounting Standards	Requires that valuation of assets be undertaken, and that this data is reported in the annual financial statements including taking account of depreciation of Councils assets.
Work Health and Safety Act 2011	Sets out legislative requirements in order to provide a healthy and safe and workplace for employees and community members,
Environmental Planning and Assessment Act 1979	Sets out requirements for land use planning and promotes the provision of adequate infrastructure for new developments.
Civil Liability Act 2002	Sets out to make provision in relation to the recovery of damages for death or personal injury caused by the fault or negligent of a person or organisations
Work Health and Safety (WHS) Act 2011	Sets out roles and responsibilities for the health, safety and welfare of personal at works.
Fisheries Management Act 1994	Provision for the fishery resources

Table 3.3: Legislative Requirements Customer Values

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

3.4 Customer Values

Customer values are determined through an analysis of:

- 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

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition 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?

These are measures of fact related to the service delivery outcome (e.g. number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

Quality

Stormwater assets will be maintained in a reasonable and functional condition. Defects found or reported that are outside adopted service standards will be repaired in accordance with defined maintenance response service levels and response times.

Function

Appropriate stormwater assets will be maintained in partnership with other levels of government and stakeholders to ensure that flooding to property is minimised and that nuisance to residents as a result of storm events is controlled.

Safety

All stormwater assets are regularly inspected and any defects are prioritised in accordance with defined intervention standards using a risk based approach to ensure that assets remain safe for public use.

Council has not carried out any detailed research on customer expectations. This will be investigated for future updates of the asset management plan and will require significant community engagement as well as the development of various scenarios which include different possible levels of service and the corresponding cost of providing each of these. Council and the community will need to decide the desired service levels and determine how this will be funded via a long term financial plan.

This Asset Management Plan has adopted Council's current position in terms of available funding and service levels in order to provide a baseline which can be used as the basis for undertaking further community engagement on desired service levels.

Currently Council is only conducting reactive maintenance for pipe and pits and culverts cleaning.

Table 3.5: Customer Level of Service Measures

Key Performance Measure	Level of Service	Performance Measure Process	Current Service Levels	Recommended Service Level
Stormwater Pipe	Undertake CCTV inspection	% network CCTV inspection	No CCTV inspection.	5% per year CCTV inspection.

			Stormwater Pipe condition based on remaining life: Condition 1 is 41% Condition 2 is 42% Condition 3 is 16% Condition 4 is 1% Condition 5 is 0%	
Stormwater Pit	No. of pit blockage	Customer Complaint	Stormwater Pit condition based on remaining life: Condition 1 is 44% Condition 2 is 40% Condition 3 is 15% Condition 4 is 1% Condition 5 is 0% Reactive maintenance from customer complain.	5% CCTV inspection
Minor Culverts	Culvert cleaning	Customer complaint.	Minor Culverts condition based on remaining life: Condition 1 is 7% Condition 2 is 37% Condition 3 is 52% Condition 4 is 5% Condition 5 is 0% Culvert cleaning as reactive maintenance.	Additional drainage crews and upgrade of culverts will ensure upgrade drainage system.
Open Drain		Customer Complaint	Zero Budget	Seek funding to maintain open drain.
Stormwater Detention and Retention Basin	Customer Complaint/Visual condition	Customer Complaint.	Zero Budget	To be determined in next version of the plan.

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. 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. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, 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. road patching, unsealed road grading, building and structure repairs),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

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

Table 3.6 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Operation	Drainage pipes and structures periodically inspected and condition rated	Not currently measured	Inspection from customer request	5% of the network will be inspected per year, also minor culverts condition assessment will be done. Also additional crew member will give the team deliver better service of maintenance.
		Budget	\$ 101,199	\$ 349,795
Maintenance	Drainage pipes and structures maintained in good working condition, routine cleaning of drains	Customer Service	We only do Reactive maintenance from customer complaint specially culvert cleaning and pit cleaning and addressing drainage issues. Currently there is no separate budget for	Additional maintenance budget with additional crews will give the team higher maintenance service to meet customer demand based on current customer enquiry.

³ IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
			stormwater drainage maintenance. \$ 50,00 budget is from Road Maintenance Budget.	
	Open channel drainage maintained in good working condition	Customer Service	Not spending any money on open channel.	Cleaning open channel And address community issue.
		Budget	\$ 50,000	\$ 209,619
Renewal	Drainage pipes/culverts and structures are replaced at optimum time to maximise asset usage and minimise asset maintenance requirements .	Customer service requests and condition inspection.	<p>No budget.</p> <p>Stormwater Pipe Condition 1 is 41% Condition 2 is 42% Condition 3 is 16% Condition 4 is 1% Condition 5 is 0%</p> <p>Stormwater Pit Condition 1 is 44% Condition 2 is 40% Condition 3 is 15% Condition 4 is 1% Condition 5 is 0%</p> <p>Minor Culverts: Condition 1 is 7% Condition 2 is 37% Condition 3 is 52% Condition 4 is 5% Condition 5 is 0%</p>	<p>Not currently measured. As stormwater assets life is 100 Years no renewal is scheduled within 20 years. Without CCTV inspection renewal requirements can not be budgeted.</p> <p>Council should reserve funding for future as renewal will be expensive when required. Minor culverts often fail due to storm damage and some old culvert have insufficient capacity to drainage, especially on rural roads. Forecast budget \$800k will improve those issue according to previous customer enquiry and our inspections. Also \$400k pipe and pit renewal budget will give us opportunity to build up fund for future renewal.</p>
		Budget	\$ 0	\$ 1,200,000

Note: * Current activities related to Planned Budget.

** Expected performance related to forecast lifecycle costs.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

3.7 Strategic Support and Condition Assessment

Council needs to increase our strategic asset management team capacity to deliver improved level of service. Council does not have the staff required to collect asset data, condition data or any proactive inspection of assets which leads to deteriorate asset condition. Council has around 557 drainage culverts on the sealed and unsealed road network and does not have ability to inspect proactively. Collecting stormwater drainage condition data in rural unsealed roads is also a challenging job for our team and currently not able to do due to shortage of manpower in the team.

Collecting condition data is not only challenging work, validating the data and capturing in asset register and doing analysis, forecasting condition deterioration is also a challenging task.

Inclusion of one Asset Officer in our Strategic Asset Management Team will give us opportunity to maintain more effectively for both Transport and Stormwater Drainage asset and can save Council's money to intervene earlier than current situation.

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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, environmental awareness, etc.

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.

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

Demand factor trends and impacts on service delivery are summarised in Table 4.1.

Table 4.1. Demand Factors, Projections and Impact on Services

Demand Factor	Present Position	Projection	Impact on services
Population	Population of the Yass Valley LGA in 2011 is estimated at 15,000	Estimated population growth rate for the period from 2011 to 2031 is 2.0% Considering the projected growth rate, the future population of Yass Valley LGA would be: Population in 2015: 16,236 Population in 2020: 17,926 Population in 2025: 19,792 Population in 2031: 22,289	<ul style="list-style-type: none"> Increased demand on existing infrastructure; reduced serviceability of existing assets; Requirement for asset upgrades and provision of new assets to meet demand.
Population Density	2.87 Persons per Dwelling	2.25 Persons per Dwelling in 2031	Reduced population density will increase the cost of infrastructure required per head of population.
Climate Change	Relative certainty of climatic conditions and intensity of storm events.	Increased storm intensity and frequency reducing effective capacity of drainage network.	Increased incidence of flooding and need to upgrade network capacity.
Community Expectations	Lack of drainage infrastructure in some towns and villages.	Expectation of increased service delivery in relation stormwater infrastructure.	Need to provide significant amount of new stormwater infrastructure
Environment	Lack of stormwater quality control infrastructure	Increased demand from community and government	Increased cost of constructing and maintaining

		for stormwater quality control	stormwater quality control devices
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4.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

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 AM Plan.

Table 4.3: Demand Management Plan Asset Programs to meet Demand

Service Activity		Demand Management Plan
Capital renewal activities		Explore opportunities for stormwater detention to reduce the need for upgrade of stormwater system capacity.
Sustainable Growth	Community	Ensure land use planning and development is undertaken in a controlled manner and that infrastructure required by these developments does not create a burden on Council and existing rate payers.

4.4 Asset Program 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 Stormwater Asset Management Plan 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 long-term financial plan (Refer to Section 5).

4.5 Climate Change Adaptation

The impacts of climate change may 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 impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.⁴

⁴ IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

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

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

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5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the YVC Stormwater Drainage Asset Management Plan plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

The stormwater assets and facilities are maintained and developed in a way that is fit for purpose and sustainable over time and consistent across the Shire. Council's key asset management principle is meeting the service levels and managing risk while minimising whole-of-life costs. It is important that asset lifecycle costs are considered in decision making as they are typically several times greater than the initial development costs.



Asset Life Cycle

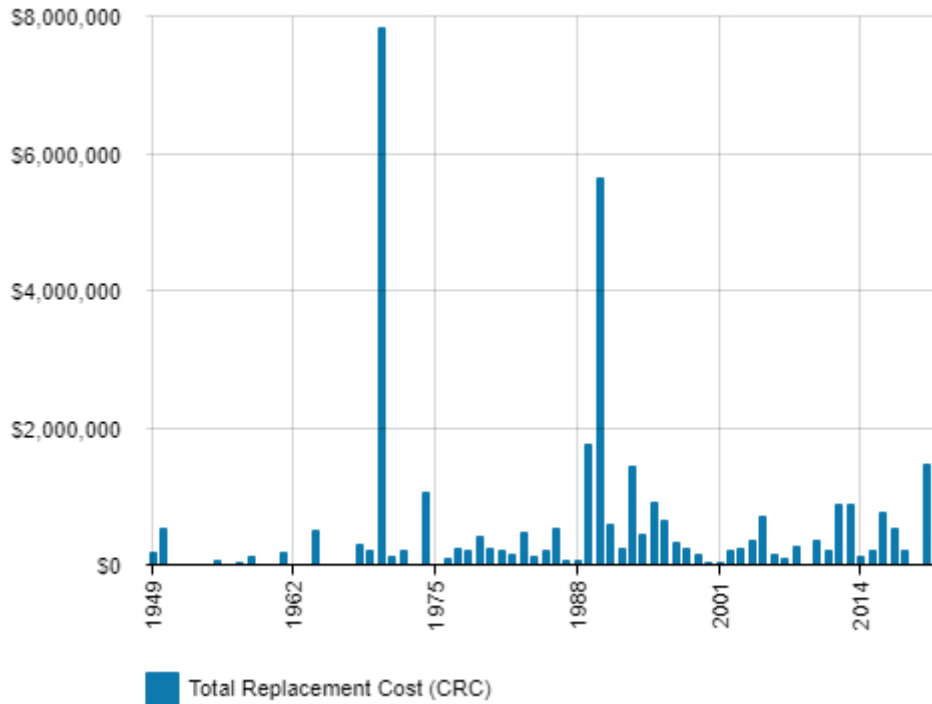
5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AM Plan are shown below:

- Stormwater Pipes
- Stormwater Pits
- Box Culverts
- Pipe Culverts
- Open Channel Drainage

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



All figure values are shown in current day dollars.

Figure 5.1.1. shows the value of individual stormwater assets as constructed each year. It can be used to give a 'snapshot' of when assets were constructed, when they will need to be renewed and at what cost. It illustrates the overall life consumption of stormwater assets as a whole.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. 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
Yass Township	Lack of infrastructure and insufficient capacity of existing stormwater infrastructure in some locations. No stormwater outlets have pollution control measures. No structure installed for stormwater reuse.
Villages	Lack of infrastructure in villages leads to flooding during rain events

5.1.3 Asset condition

We did not have any condition assessment currently and all conditions are age and remaining life based.

Condition is measured using a 1 – 5 grading system⁵ as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM plan results are translated to a 1 – 5 grading scale for ease of communication.

Table 5.1.3: Condition Grading System

Condition Grading	Description of Condition
1	Very Good: free of defects, only planned and/or routine maintenance required
2	Good: minor defects, increasing maintenance required plus planned maintenance
3	Fair: defects requiring regular and/or significant maintenance to reinstate service
4	Poor: significant defects, higher order cost intervention likely
5	Very Poor: physically unsound and/or beyond rehabilitation, immediate action required

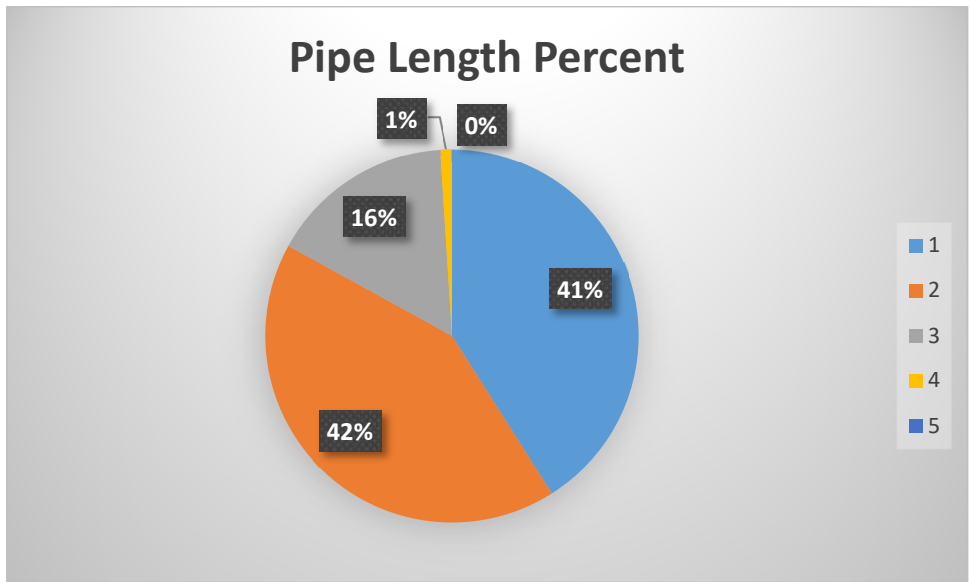
The condition profile of our assets is shown in Figure 5.1.3.

A desktop assessment of asset condition has been completed for the purposes of developing this AMP using the following method:

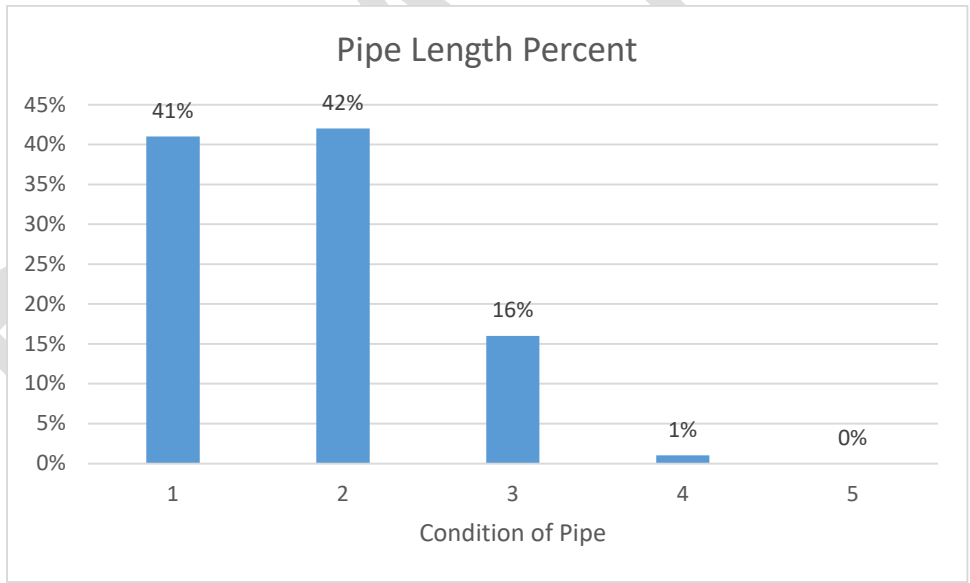
- Age and remaining life (based on design life)

Figure 5.1.3: Asset Condition Profile

⁵ IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.



**Figure 5.1.3.1 Stormwater Pipe Condition Age Based
(Condition 1 Excellent , Condition 5 Very Poor)**



**Figure 5.1.3.2 Stormwater Pipe Condition Age Based
(Condition 1 Excellent , Condition 5 Very Poor)**

Pipe Condition	Pipe Length Percent
1	41%

2	42%
3	16%
4	1%
5	0%

Stormwater Pipe Condition Age Based
(Condition 1 Excellent , Condition 5 Very Poor)

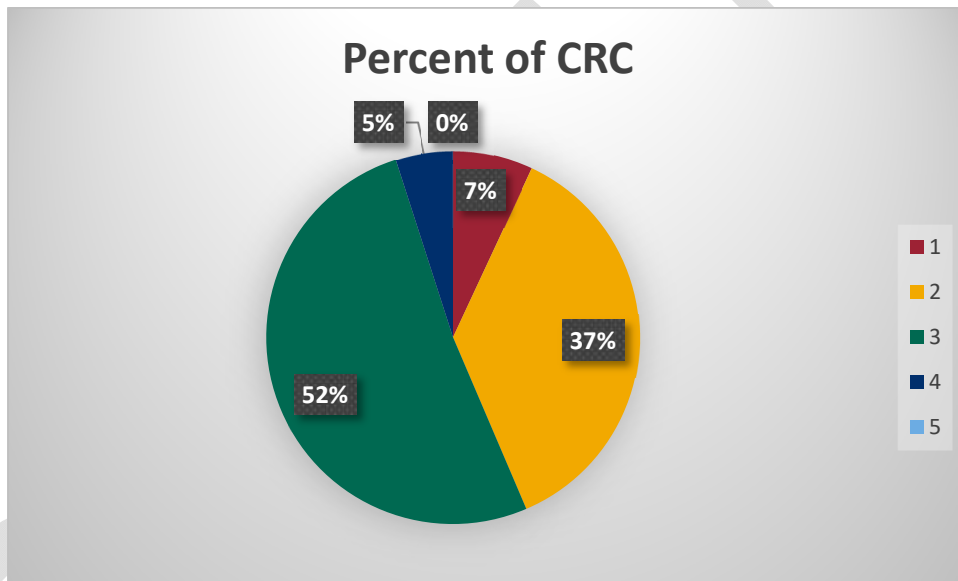
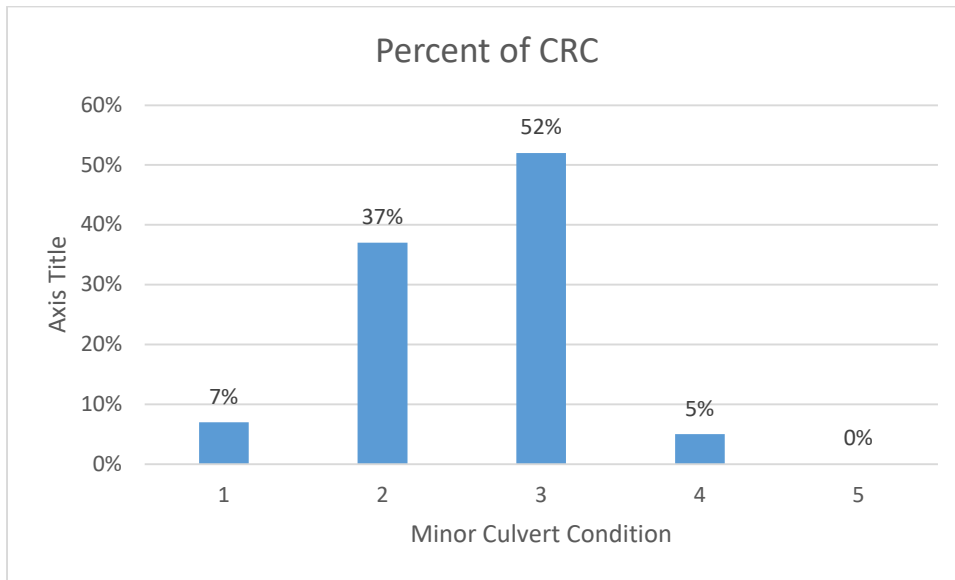


Figure 5.1.3.3 Minor Culvert Condition Age Based
(Condition 1 Excellent, Condition 5 Very Poor)



**Figure 5.1.3.4 Minor Culvert Condition Age Based
(Condition 1 Excellent Condition 5 Very Poor)**

Culvert Condition	Percent of CRC
1	7%
2	37%
3	52%
4	5%
5	0%

**Minor Culvert Condition Age Based
(Condition 1 Excellent, Condition 5 Very Poor)**

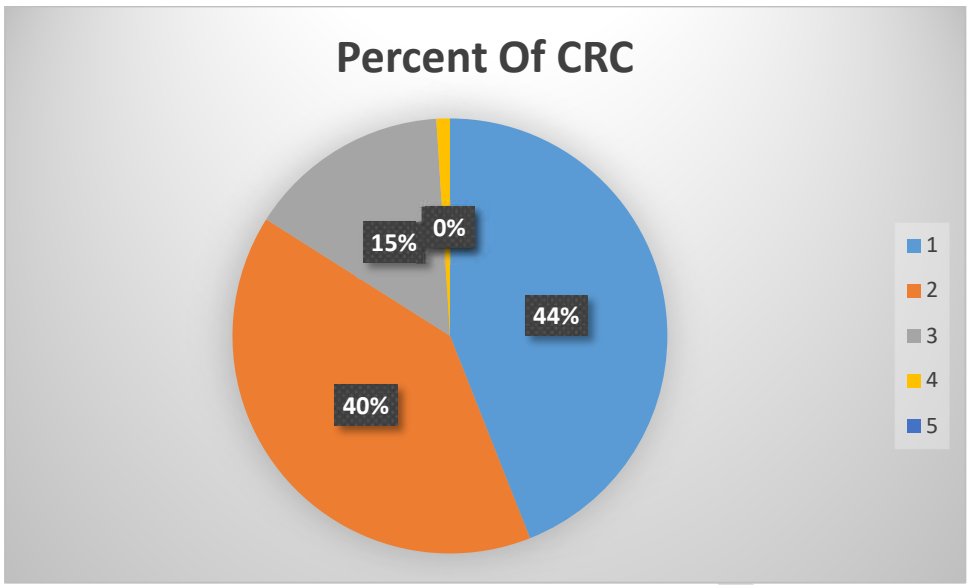


Figure 5.1.3.5 Pit Condition Based On Remaining Life
(Condition 1 Excellent, Condition 5 Very Poor)

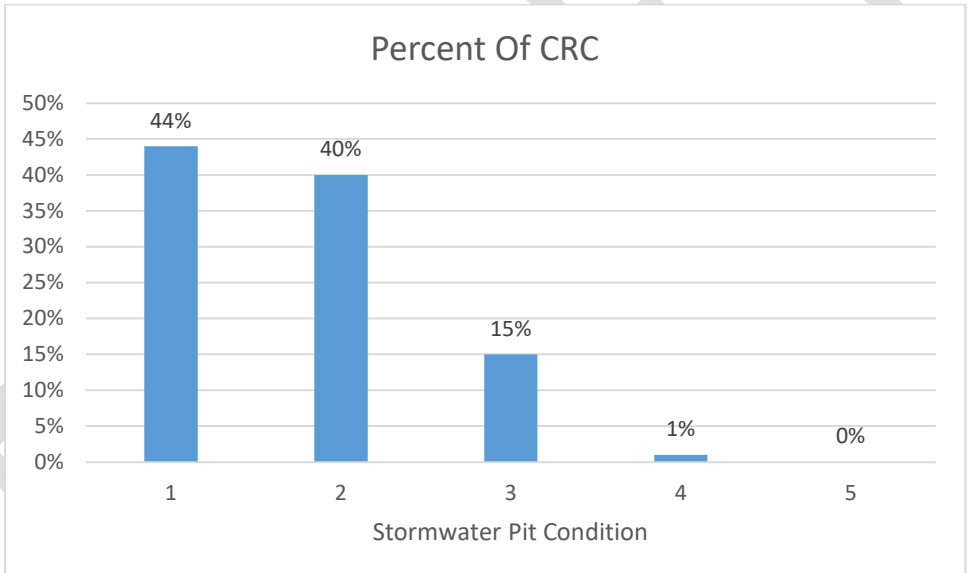


Figure 5.1.3.6 Pit Condition Based On Remaining Life
(Condition 1 Excellent, Condition 5 Very Poor)

Pit Condition	Percent Of CRC
1	44%
2	40%
3	15%
4	1%
5	0%

Pit Condition Based On Remaining Life
(Condition 1 Excellent, Condition 5 Very Poor)

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility 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 pipe repairs, asphalt patching, and equipment repairs.

To improve the functionality of our stormwater assets, we regularly undertake operational activities such as pits and pipes cleaning. We also need to do camera inspections (CCTV) and condition assessments. While this work will not change the condition of the asset, it will help prolong its useful life. We also undertake regular maintenance work including side entry pit frame repairs, lid replacements and patch repairs over small sections of damage assets. This work will improve the condition and functionality of the asset necessary to keep them operational. Maintenance works are classified as planned and reactive:

Reactive maintenance:

Reactive maintenance is undertaken in response to customer requests or when assets fail and need immediate repair. Council is currently doing reactive maintenance.

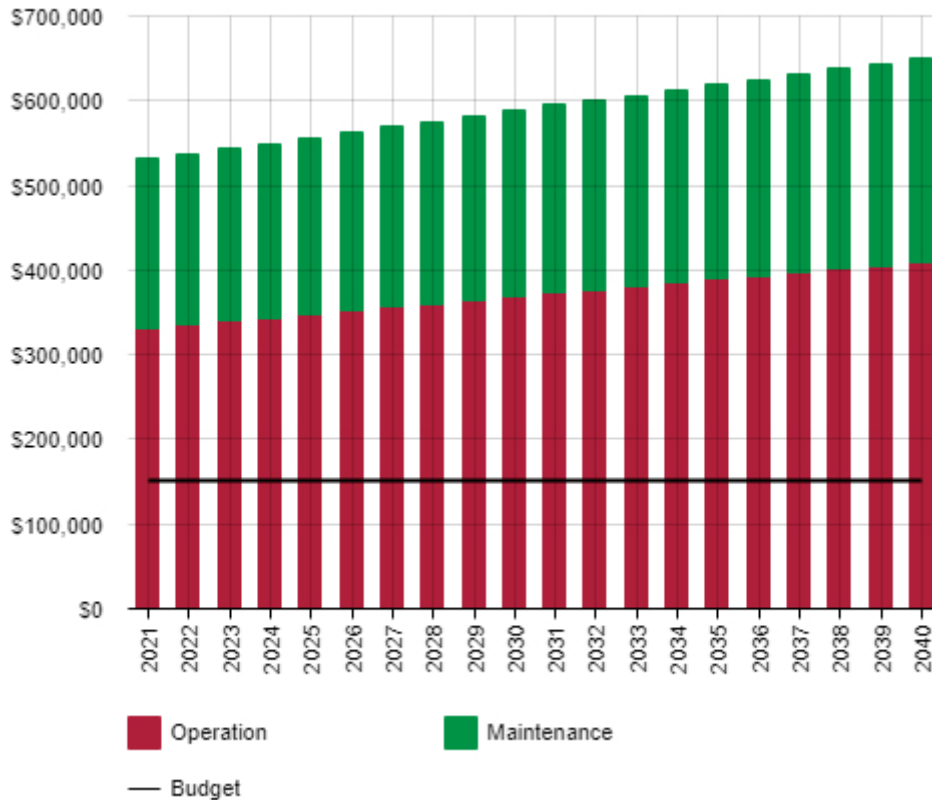
Planned maintenance:

Planned maintenance relates to repair work that arises from proactive activities such as inspections and condition assessments, where actioning repair work is then prioritised, scheduled and reviewed against previous maintenance history.

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 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



All figure values are shown in current day dollars.

Operations budget considered from Council’s financial system MAGIQ. Additional operational budget considered for gifted assets from developer. Additional budget \$ 80,000 forecast for condition assessment every year considering 5% asset will be inspected by CCTV and additional drainage crew \$150,000.

Currently there are no separate maintenance budget for stormwater assets. Maintenance works are completed from the local road maintenance budget. Maintenance budget \$50,000 considered from previous maintenance record and road maintenance team in this Asset Management Plan. Also, additional maintenance budget considered for gifted assets from developer. Additional \$150,000 per year forecast for minor culverts, sudden storm damage or flood damage event, open channel and other stormwater assets maintenance.

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), or

- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

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 on 30th June 2025

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life (Years)
Stormwater Pipe	100
Stormwater Pit	100
Pipe Culverts	100
Box Culverts	100

The estimates for renewals in this AM Plan were based on the Asset Register Method.

5.3.1 Renewal ranking criteria

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

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁶

Renewal work is carried out in accordance with the following Standards and Specifications.

- Aus Spec
- Australian Rainfall and Runoff
- Council's Policies and Procedures

⁶ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

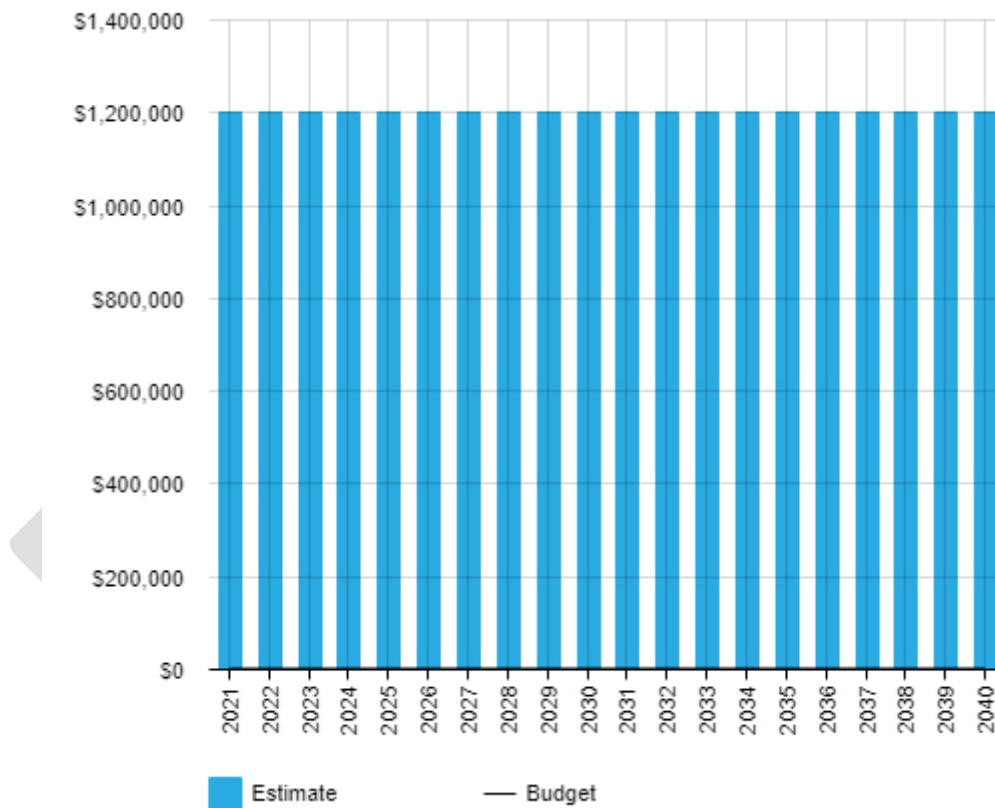
5.4 Summary of future renewal costs

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 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Future renewal budget did not come anything based on asset register method as we don't have any condition assessment.

We do not have any condition assessment and we did the renewal program based on remaining useful life of asset and there are no future renewal showing in the graph with in this planning period.

Figure 5.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

We do not have any condition assessment to generate renewal program currently. Based on our experience and community expectation from customer request, we proposed renewal program forecast.

As stormwater assets life is 100 Years it is not showing any renewal within 20 years' time. Without CCTV inspection we can't currently recommend correct renewal figure and will be updated this budget after CCTV inspection in next version of Asset Management Plan.

Council should reserve funding for future as renewal will be expensive when required. Minor culverts often fail due to storm damage and some old culvert have insufficient capacity to drainage, especially on rural roads. Forecast budget \$800k will improve those issue according to previous customer enquiry and our inspections. Also \$400k pipe and pit renewal budget will give us opportunity to build up fund for future renewal.

5.5 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs.

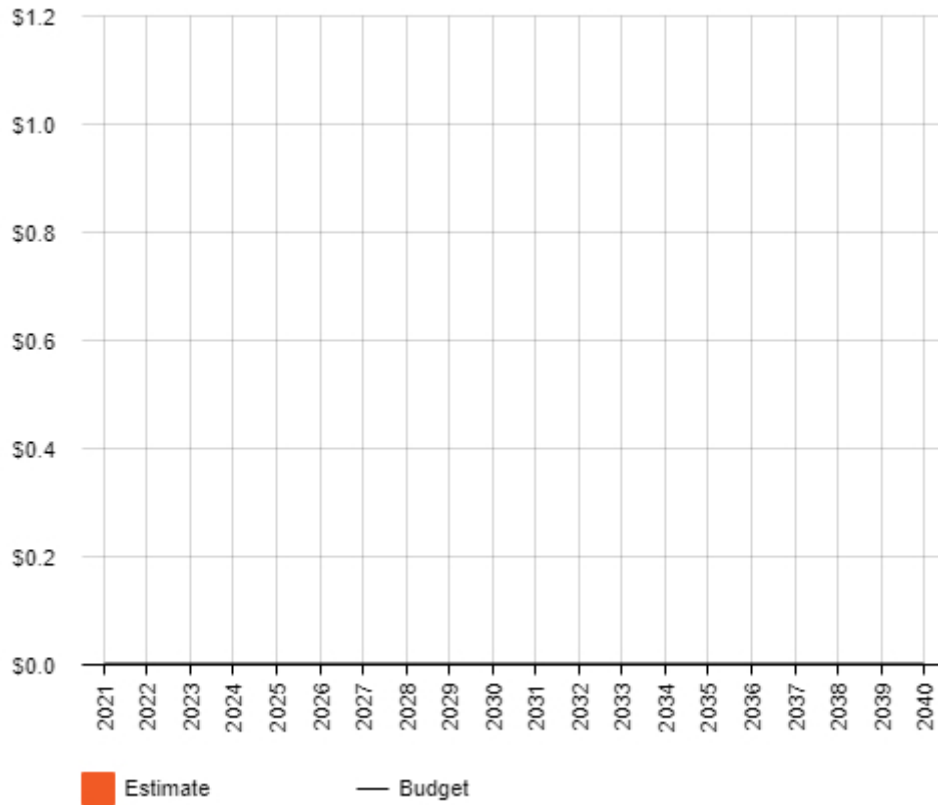
5.6 Selection criteria

Proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities 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 and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.5.1.

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarized in Figure 5.5.1 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

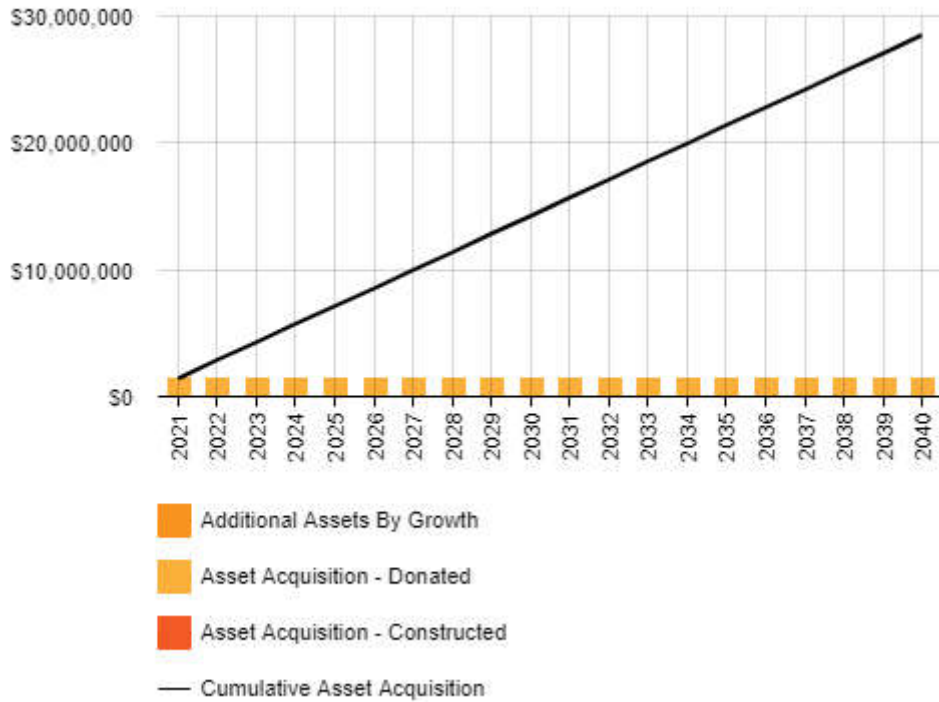
Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

When an Entity commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current dollars.

Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

5.7 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 the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Asset	Reason for Disposal	Timing	Cash flow from disposal
There are currently no assets identified for disposal	N/A	N/A	N/A

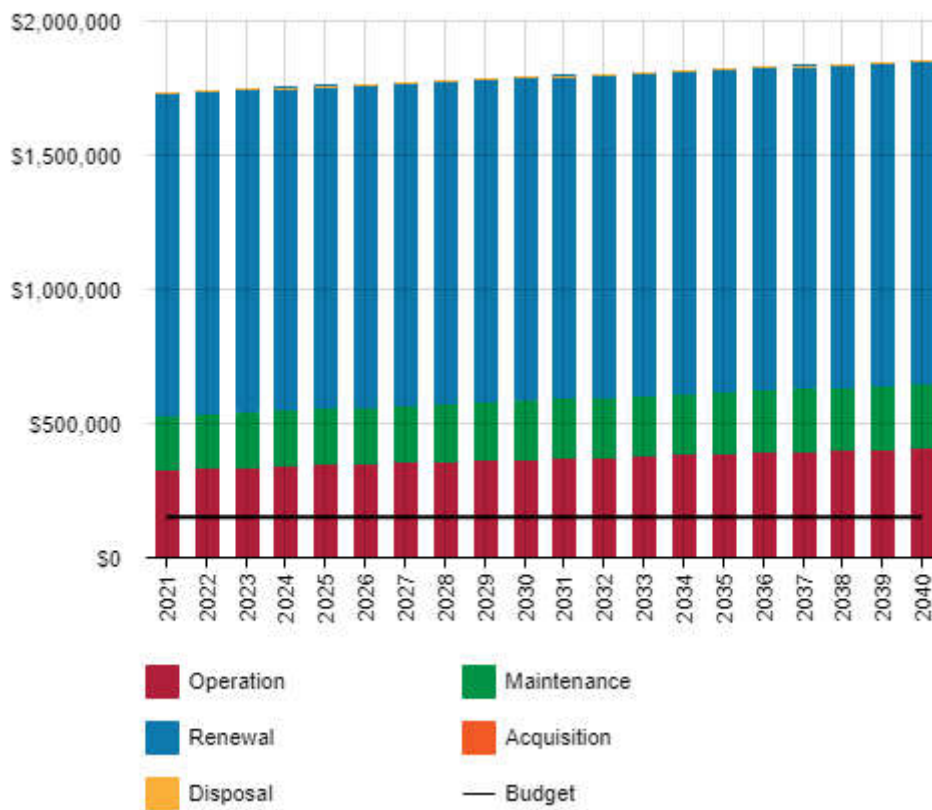
Where cash flow projections from asset disposals are not available, these will be developed in future revisions of this asset management plan.

5.8 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.7.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.7.1: Lifecycle Summary



All figure values are shown in current day dollars.

Maintenance budget based on maintenance team and previous asset management plan \$50,000 currently not in the actual stormwater maintenance budget. \$2,137 is for maintenance of additional assets from developer and additional \$100,000 per year is assumed for emergency maintenance of minor culverts due to flood or storm event.

Actual operational expenditure \$ 101,199 from MAGIQ last year budget taken and assumed for next 20 years budget. Additional forecast \$ 4,132 is for additional asset from developer, \$ 60,000 forecast

for 5% of asset CCTV inspection each year and \$150,000 per year for additional crew member for stormwater maintenance team.

The ongoing development of maintenance and condition assessment activities will ensure that future asset failure will be minimised with a “no-surprises” approach for future funding forecasts. This will be supported through the initial development of condition monitoring to predict potential maintenance and renewal requirements.

In compiling the current forecasts, the following general assumptions have been identified:

- Proposed Capital Renewal Program will be funded in accordance with the current Council model adopted;
- Renewal works will be prioritised according to asset condition;
- The condition of the assets reflect what is reported within this document;
- Current maintenance funding levels will meet service level requirements;
- Renewals, maintenance and isolated failure replacement is generally ‘like for like’;
- Where a renewal must be provided to a higher standard, the difference in cost between a ‘like for like’ renewal and the higher standard is to be treated as an asset upgrade.
- Depreciation is in accordance with Council Policy;
- There is no allowance for CPI as the continuing revaluation and condition inspection process will make adjustments for current rates.

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’⁷.

An assessment of risks⁸ 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
Major Culverts to be identified	Structural Failure	Disconnect community from essential services

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.

⁷ ISO 31000:2009, p 2

⁸ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

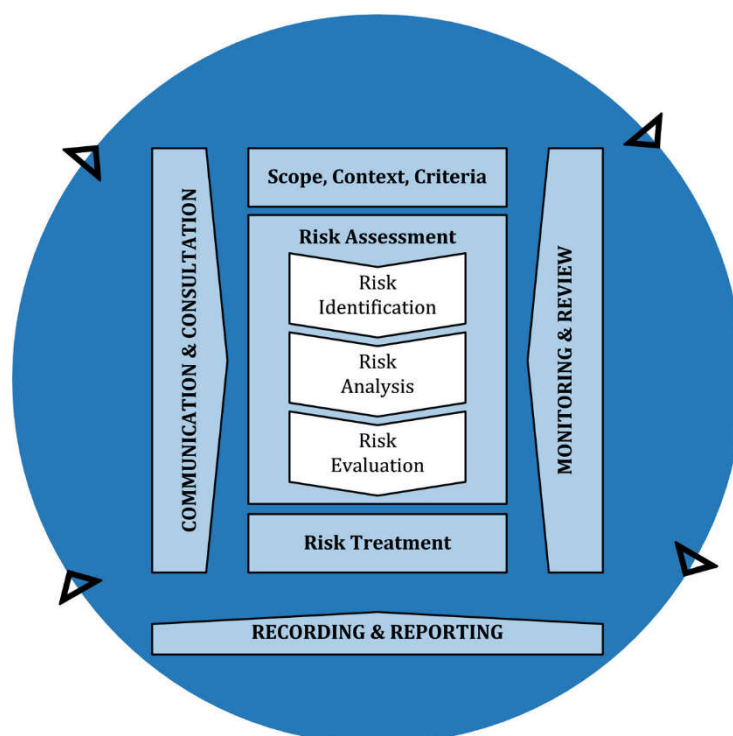


Fig 6.2 Risk Management Process – Abridged
 Source: ISO 31000:2018, Figure 1, p9

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 risks⁹ 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 and the Councillor.

Table 6.2: Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Rating	Risk Treatment Plan
Urban Stormwater	Flooding of properties due to lack of stormwater infrastructure	High	Develop stormwater management plan for all towns and villages and include works on asset management plan and long term financial plans.

⁹ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

Urban Stormwater	Capacity of existing infrastructure exceeded as a result of increased inflow from new development.	High	Develop stormwater management policy to ensure that on site detention is required for major new developments. Assess existing infrastructure to determine where upgrade works are required.
Urban Stormwater	Flooding of roads and/or properties as a result of blocked drainage systems.	Medium	Develop asset inspection and maintenance program.
Urban Stormwater	Inadequate funding available to provide required infrastructure.	Medium	Develop stormwater management plan for all towns and villages and include works on asset management plan and long term financial plans. Undertake community engagement activities to determine 'willingness to pay' for required upgrades.
Minor Culvert	Culvert Failure	High	Period inspection and Maintenance

7.0 FINANCIAL SUMMARY

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

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AM Plan 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 Ratio¹⁰ 0.0 %

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 0.0 % 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.

Medium term – 10 year financial planning period

This AM Plan 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.

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$ 1,759,414 average per year.

The proposed (budget) operations, maintenance and renewal funding is \$ 151,199 on average per year giving a 10 year funding shortfall of \$-1,608,215 per year. This indicates that 8.59% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AM Plan and ideally over the 10 year life of the Long-Term Financial Plan.

¹⁰ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

7.1.2 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) required for consideration in the 10 year long-term financial plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the long-term financial plan.

A gap between the forecast outlays and the amounts allocated in the financial plan indicates further work is required on reviewing service levels in the AM Plan (including possibly revising the long-term financial plan).

We will manage the 'gap' by developing this AM Plan to provide guidance on future service levels and resources required to provide these services in consultation with the community.

Forecast costs are shown in FY 2021-22 dollar values.

Table 7.1.2: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2021	0	\$ 331,199	\$ 200,000	\$ 1,200,000	0
2022	0	\$ 335,331	\$ 202,137	\$ 1,200,000	0
2023	0	\$ 339,464	\$ 204,275	\$ 1,200,000	0
2024	0	\$ 343,596	\$ 206,412	\$ 1,200,000	0
2025	0	\$ 347,729	\$ 208,550	\$ 1,200,000	0
2026	0	\$ 351,861	\$ 210,687	\$ 1,200,000	0
2027	0	\$ 355,994	\$ 212,825	\$ 1,200,000	0
2028	0	\$ 360,126	\$ 214,962	\$ 1,200,000	0
2029	0	\$ 364,259	\$ 217,100	\$ 1,200,000	0
2030	0	\$ 368,391	\$ 219,237	\$ 1,200,000	0
2031	0	\$ 372,524	\$ 221,375	\$ 1,200,000	0
2032	0	\$ 376,656	\$ 223,512	\$ 1,200,000	0
2033	0	\$ 380,789	\$ 225,650	\$ 1,200,000	0
2034	0	\$ 384,921	\$ 227,787	\$ 1,200,000	0
2035	0	\$ 389,054	\$ 229,925	\$ 1,200,000	0
2036	0	\$ 393,186	\$ 232,062	\$ 1,200,000	0
2037	0	\$ 397,319	\$ 234,200	\$ 1,200,000	0
2038	0	\$ 401,451	\$ 236,337	\$ 1,200,000	0
2039	0	\$ 405,583	\$ 238,475	\$ 1,200,000	0
2040	0	\$ 409,716	\$ 240,612	\$ 1,200,000	0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Entity’s budget and Long-Term financial plan.

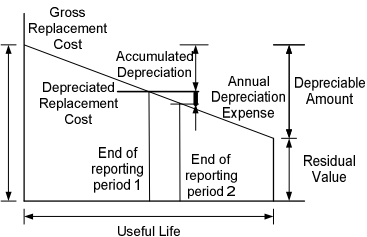
The financial strategy of the entity determines how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at Fair Value

Replacement Cost (Current/Gross)	\$34455219
Depreciable Amount	\$34455219
Depreciated Replacement Cost ¹¹	\$23123650
Depreciation	\$344563.06



7.3.2 Valuation forecast

Asset values are forecast to increase as additional assets are added to 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 depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this AM Plan are:

- Unit rates used to calculate asset replacement costs are accurate and indicative of actual replacement costs at the time of development of the plan. These do not take into account rise and fall of construction costs.
- Condition data was difficult to obtain as the majority of the assets are buried beneath the ground. Asset condition has been based on assessment of the assets acquisition date and the projected remaining useful life based on industry average overall useful lives. In many cases accurate construction dates were not available, and these were estimated in these circumstances. The asset renewal years that have been identified for individual assets are

¹¹ Also reported as Written Down Value, Carrying or Net Book Value.

indicative only and will need refinement once additional objective condition data (eg. CCTV surveys) are able to be obtained.

- Funding allocations for maintenance and renewal of assets are largely based on current available funding levels and are not intended to represent the required level of funding.
- Useful lives for various asset components have been assumed based on industry standards and professional experience of Council staff. These will be subject to community engagement to determine whether the assumed levels represent what is acceptable to the community. A small change in these levels of service (useful lives) may have a dramatic impact on asset maintenance and renewal requirements.

Accuracy of future financial forecasts may be improved in future revisions of this asset management plan by the following actions.

- Improving the condition assessment procedure to collect and update asset condition data
- Research and refine useful life of assets
- Development of a long term financial plan which includes various levels of service and funding scenarios to define what is acceptable to the community and affordable to Council.

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7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan 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 scale¹² in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	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. High	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. Medium	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. Low	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. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	C	
Growth projections	C	
Acquisition forecast	B	Only considered from gifted
Operation forecast	C	Currently not reflecting actual operating cost
Maintenance forecast	C	Currently no budget and spend from road budget
Renewal forecast - Asset values	B	Revaluation done as at 30 th June 2020.

¹² IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

- Asset useful lives	B	Assessed during revaluation of assets as at 2020
- Condition modelling	E	No condition assessment done.
Disposal forecast	C	No planned disposal considered

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8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹³

8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is MAGIQ software used by YVC.

8.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is Assetic MyData as asset register, MAGIQ as financial data..

8.2 Improvement Plan

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

Table 8.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
	In consideration of more detailed and regular condition assessments, priority should be given to the high value and critical assets	Engineering Services Manager/Asset Engineer	Contractor Available Fund	2025
1.	Engage with the community to determine customer satisfaction levels and desired levels of service/willingness to pay	Director of Infrastructure Assets	Facilitator Available Fund	2025
2.	Develop stormwater management plans to identify required asset upgrades.	Engineering Services Manager/ Manager Road Delivery/Asset Engineer	Consultant	Ongoing
3.	Develop service level and funding scenarios using long term financial model	Engineering Services Manager/ Asset Engineer	Financial model, Consultant Available Fund	2025
4.	Update of AMP to reflect communities desired levels of service and long term financial plan	Engineering Services Manager/Asset Engineer	Consultant	2025

¹³ ISO 55000 Refers to this as the Asset Management System

5.	Develop comprehensive risk register	Asset Engineer	No additional resource required.	2025
6.	Develop an Emergency Response Plan for the critical stormwater assets	Risk Coordinator	ESM	TBA
7.	Assess adequacy of operations and maintenance budget.	ESM/Manager Road Maintenance	No Additional resource required	Ongoing
8.	Continue to develop long term models predicting services level and risks based on varying funding models	Director Infrastructure Assets/ESM/Manager Road Delivery/Asset Engineer	Consultant Condition Data Available Fund	2025

8.3 Monitoring and Review Procedures

This AM Plan 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 AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned 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 Council election.

8.4 Performance Measures

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

- Adoption of the Stormwater Infrastructure AMP by Council.
- Historical asset activities that are recorded and located in Council's asset management system.
- Limited reactive work and more planned maintenance activities.
- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

- The Stormwater Infrastructure AMP becomes the reference point for all information and enables good decision making for asset related activities and investments.

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9.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
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- 'Strategic Plan 20XX – 20XX',
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- Community Strategic Plan 2013-2030

10.0 APPENDICES

Appendix A Acquisition Forecast

Acquisition Forecast Summary

Only gifted asset in took in to account. No new construction considered and no population growth considered.

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2021	0	\$ 1,424,989	0
2022	0	\$ 1,424,989	0
2023	0	\$ 1,424,989	0
2024	0	\$ 1,424,989	0
2025	0	\$ 1,424,989	0
2026	0	\$ 1,424,989	0
2027	0	\$ 1,424,989	0
2028	0	\$ 1,424,989	0
2029	0	\$ 1,424,989	0
2030	0	\$ 1,424,989	0
2031	0	\$ 1,424,989	0
2032	0	\$ 1,424,989	0
2033	0	\$ 1,424,989	0
2034	0	\$ 1,424,989	0
2035	0	\$ 1,424,989	0
2036	0	\$ 1,424,989	0
2037	0	\$ 1,424,989	0
2038	0	\$ 1,424,989	0
2039	0	\$ 1,424,989	0
2040	0	\$ 1,424,989	0

Appendix B Operation Forecast

Operation Forecast Summary

Actual operational expenditure \$ 101,199 from MAGIQ last year budget taken and assumed for next 20 years budget. Additional forecast \$ 4,132 is for additional asset from developer, \$ 80,000 forecast for 5% of asset CCTV inspection each year and minor culverts condition assessment, \$ 150,000 for additional crew members in drainage maintenance team

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2021	\$ 101,199	\$ 4,132	\$ 331,199
2022	\$ 101,199	\$ 4,132	\$ 335,331
2023	\$ 101,199	\$ 4,132	\$ 339,464
2024	\$ 101,199	\$ 4,132	\$ 343,596
2025	\$ 101,199	\$ 4,132	\$ 347,729
2026	\$ 101,199	\$ 4,132	\$ 351,861
2027	\$ 101,199	\$ 4,132	\$ 355,994
2028	\$ 101,199	\$ 4,132	\$ 360,126
2029	\$ 101,199	\$ 4,132	\$ 364,259
2030	\$ 101,199	\$ 4,132	\$ 368,391
2031	\$ 101,199	\$ 4,132	\$ 372,524
2032	\$ 101,199	\$ 4,132	\$ 376,656
2033	\$ 101,199	\$ 4,132	\$ 380,789
2034	\$ 101,199	\$ 4,132	\$ 384,921
2035	\$ 101,199	\$ 4,132	\$ 389,054
2036	\$ 101,199	\$ 4,132	\$ 393,186
2037	\$ 101,199	\$ 4,132	\$ 397,319
2038	\$ 101,199	\$ 4,132	\$ 401,451
2039	\$ 101,199	\$ 4,132	\$ 405,583
2040	\$ 101,199	\$ 4,132	\$ 409,716

Appendix C Maintenance Forecast

Maintenance Forecast Summary

Maintenance budget based on previous asset management plan \$ 50,000 currently not in the actual stormwater maintenance budget. \$ 2,137 is for maintenance of additional assets from developer and additional \$150,000 per year is assumed for emergency flood damage minor culverts, open channel and other drainage asset maintenance.

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2021	\$ 50,000	\$ 2,137	\$ 200,000
2022	\$ 50,000	\$ 2,137	\$ 202,137
2023	\$ 50,000	\$ 2,137	\$ 204,275
2024	\$ 50,000	\$ 2,137	\$ 206,412
2025	\$ 50,000	\$ 2,137	\$ 208,550
2026	\$ 50,000	\$ 2,137	\$ 210,687
2027	\$ 50,000	\$ 2,137	\$ 212,825
2028	\$ 50,000	\$ 2,137	\$ 214,962
2029	\$ 50,000	\$ 2,137	\$ 217,100
2030	\$ 50,000	\$ 2,137	\$ 219,237
2031	\$ 50,000	\$ 2,137	\$ 221,375
2032	\$ 50,000	\$ 2,137	\$ 223,512
2033	\$ 50,000	\$ 2,137	\$ 225,650
2034	\$ 50,000	\$ 2,137	\$ 227,787
2035	\$ 50,000	\$ 2,137	\$ 229,925
2036	\$ 50,000	\$ 2,137	\$ 232,062
2037	\$ 50,000	\$ 2,137	\$ 234,200
2038	\$ 50,000	\$ 2,137	\$ 236,337
2039	\$ 50,000	\$ 2,137	\$ 238,475
2040	\$ 50,000	\$ 2,137	\$ 240,612

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

Describe the assumptions and include relevant information relating to the Renewal Forecast.

Alternate method used for renewal forecast.

Year	Project	Estimate
2021	Minor Culvert Renewal	\$ 300,000
2021	Stormwater Pipe and Pit Renewal	\$ 400,000
2021	New Culverts and Culverts Upgrade	\$ 500,000
2022	Minor Culvert Renewal	\$ 300,000
2022	Stormwater Pipe and Pit Renewal	\$ 400,000
2022	New Culverts and Culverts Upgrade	\$ 500,000
2023	Minor Culvert Renewal	\$ 300,000
2023	Stormwater Pipe and Pit Renewal	\$ 400,000
2023	New Culverts and Culverts Upgrade	\$ 500,000
2024	Minor Culvert Renewal	\$ 300,000
2024	Stormwater Pipe and Pit Renewal	\$ 400,000
2024	New Culverts and Culverts Upgrade	\$ 500,000
2025	Minor Culvert Renewal	\$ 300,000
2025	Stormwater Pipe and Pit Renewal	\$ 400,000
2025	New Culverts and Culverts Upgrade	\$ 500,000
2026	Minor Culvert Renewal	\$ 300,000
2026	Stormwater Pipe and Pit Renewal	\$ 400,000
2026	New Culverts and Culverts Upgrade	\$ 500,000
2027	Minor Culvert Renewal	\$ 300,000
2027	Stormwater Pipe and Pit Renewal	\$ 400,000
2027	New Culverts and Culverts Upgrade	\$ 500,000
2028	Minor Culvert Renewal	\$ 300,000
2028	Stormwater Pipe and Pit Renewal	\$ 400,000
2028	New Culverts and Culverts Upgrade	\$ 500,000
2029	Minor Culvert Renewal	\$ 300,000
2029	Stormwater Pipe and Pit Renewal	\$ 400,000
2029	New Culverts and Culverts Upgrade	\$ 500,000
2030	Minor Culvert Renewal	\$ 300,000
2030	Stormwater Pipe and Pit Renewal	\$ 400,000
2030	New Culverts and Culverts Upgrade	\$ 500,000
2031	Minor Culvert Renewal	\$ 300,000
2031	Stormwater Pipe and Pit Renewal	\$ 400,000
2031	New Culverts and Culverts Upgrade	\$ 500,000
2032	Minor Culvert Renewal	\$ 300,000
2032	Stormwater Pipe and Pit Renewal	\$ 400,000
2032	New Culverts and Culverts Upgrade	\$ 500,000
2033	Minor Culvert Renewal	\$ 300,000

2033	Stormwater Pipe and Pit Renewal	\$ 400,000
2033	New Culverts and Culverts Upgrade	\$ 500,000
2034	Minor Culvert Renewal	\$ 300,000
2034	Stormwater Pipe and Pit Renewal	\$ 400,000
2034	New Culverts and Culverts Upgrade	\$ 500,000
2035	Minor Culvert Renewal	\$ 300,000
2035	Stormwater Pipe and Pit Renewal	\$ 400,000
2035	New Culverts and Culverts Upgrade	\$ 500,000
2036	Minor Culvert Renewal	\$ 300,000
2036	Stormwater Pipe and Pit Renewal	\$ 400,000
2036	New Culverts and Culverts Upgrade	\$ 500,000
2037	Minor Culvert Renewal	\$ 300,000
2037	Stormwater Pipe and Pit Renewal	\$ 400,000
2037	New Culverts and Culverts Upgrade	\$ 500,000
2038	Minor Culvert Renewal	\$ 300,000
2038	Stormwater Pipe and Pit Renewal	\$ 400,000
2038	New Culverts and Culverts Upgrade	\$ 500,000
2039	Minor Culvert Renewal	\$ 300,000
2039	Stormwater Pipe and Pit Renewal	\$ 400,000
2039	New Culverts and Culverts Upgrade	\$ 500,000
2040	Minor Culvert Renewal	\$ 300,000
2040	Stormwater Pipe and Pit Renewal	\$ 400,000
2040	New Culverts and Culverts Upgrade	\$ 500,000

D.2 – Renewal Forecast Summary

Currently we don't have condition data and based on customer enquiry and our experience.

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2021	\$ 1,200,000	0
2022	\$ 1,200,000	0
2023	\$ 1,200,000	0
2024	\$ 1,200,000	0
2025	\$ 1,200,000	0
2026	\$ 1,200,000	0
2027	\$ 1,200,000	0
2028	\$ 1,200,000	0
2029	\$ 1,200,000	0
2030	\$ 1,200,000	0
2031	\$ 1,200,000	0
2032	\$ 1,200,000	0
2033	\$ 1,200,000	0
2034	\$ 1,200,000	0
2035	\$ 1,200,000	0
2036	\$ 1,200,000	0
2037	\$ 1,200,000	0
2038	\$ 1,200,000	0
2039	\$ 1,200,000	0
2040	\$ 1,200,000	0



Table E3 – Disposal Activity Summary

Year	Disposal Forecast	Disposal Budget
2021	0	0
2022	0	0
2023	0	0
2024	0	0
2025	0	0
2026	0	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	0	0
2034	0	0
2035	0	0
2036	0	0
2037	0	0
2038	0	0
2039	0	0
2040	0	0



Appendix F Budget Summary by Lifecycle Activity

Actual Operations and Renewal Cost from MAGIQ and Maintenance cost is currently from road maintenance budget and approximately \$ 50,000 based on previous asset management plan.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2021	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2022	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2023	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2024	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2025	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2026	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2027	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2028	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2029	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2030	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2031	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2032	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2033	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2034	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2035	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2036	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2037	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2038	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2039	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199
2040	0	\$ 101,199	\$ 50,000	0	0	\$ 151,199

