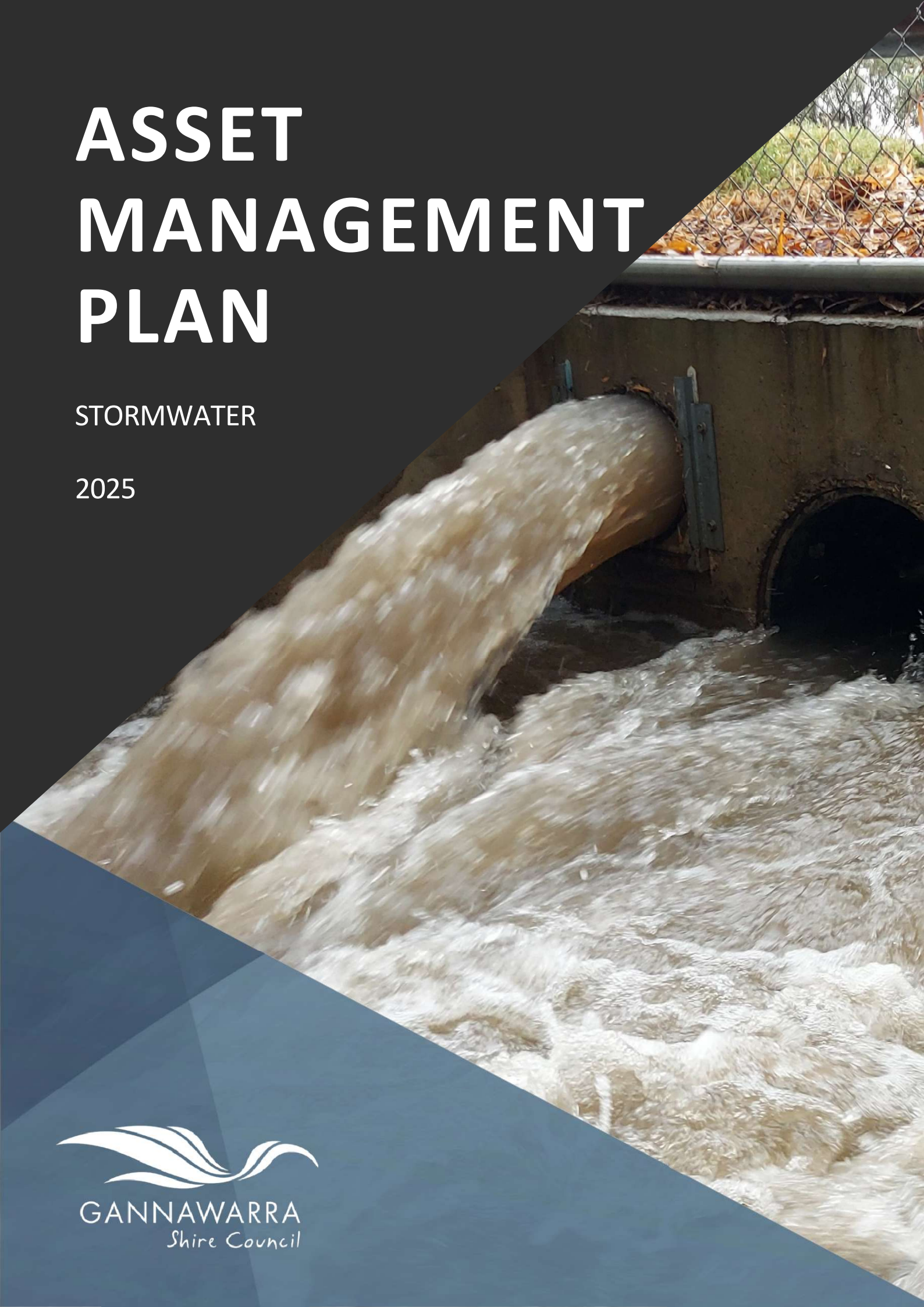
ASSET MANAGEMENT PLAN

STORMWATER

2025



GANNAWARRA
Shire Council

Document Control	Asset Management Plan – Asset Register Method				
Document ID :					
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**	**Approver**
V1.11	May 2021	Update	IPWEA		
V1.12	August 2023	Update to asset valuation terminology	IPWEA		
V1.13	June 2024	Update Appendix D.4 – Renewal Plan	IPWEA		
V1.14	September 2024	Update and align to ISO 550XX:2024	IPWEA		
V1.15	January 2025	Minor restructure and messaging improvement	IPWEA		
V1.16	February 2025	Revised messaging to align with LTFP	IPWEA		
V2.00	July 2025	GSC Draft Plan for Public consultation	DB		

NAMS+ offers several Asset Management templates.

The asset owner can choose the template that best suits their circumstances.

The structure and content of this template is aligned to the International Infrastructure Management Manual and the ISO 550xx and 31000 series of standards. In some instances, the asset owner may choose to reformat/restructure content or only use the Executive Summary. IPWEA takes no responsibility for the end product.

This Asset Management Plan should be prepared in line with the Strategic Asset Management Plan (also referred to as an AM Strategy) and AM Policy and used to inform the Long-Term Financial Plan.

Contents

1.0 EXECUTIVE SUMMARY

Our community relies on a diverse portfolio of infrastructure assets including transport, stormwater, buildings and open space valued at approximately $426M.

The Asset Management Plan (AM Plan) provides a strategic framework for managing our community's infrastructure assets, ensuring they remain safe, reliable, and capable of meeting current and future demands.

1.1 Purpose of the Plan

The AM Plan aims to:

- Provide a systematic approach to asset management.
- Address critical risks associated with aging infrastructure and limited funding.
- Ensure infrastructure supports the community's social, economic, and environmental goals.

This AM Plan details information about Stormwater assets with key actions required to maintain service levels, optimise lifecycle costs and support long-term financial sustainability.

The plan defines the services, how they are provided and what funds are required to provide the services over the 20 year planning period. The AM Plan expenditure forecasts inform the Long-Term Financial Plan which typically considers a 10-year planning period.

1.2 Asset Description

The " Stormwater" assets include:

- Stormwater Pipes
- Stormwater Pits / Manholes
- Culverts
- Pumps / Pumpstations

The above infrastructure assets have replacement value estimated at $32,179,791.

1.3 Levels of Service

This plan covers the infrastructure assets that provide stormwater drainage services.

Current service levels are largely informal but well established, guided by historic maintenance practices, legislative obligations, and available funding. These services include routine inspection and clearance of stormwater pits and pipes, maintenance of pump stations, and reactive responses to blockages or localised flooding events. Service levels vary depending on asset function, location and risk exposure.

The allocation in the planned budget is sufficient to continue providing these services at current levels for the planning period.

The main service consequences of the planned budget are:

- Limited capacity to expand the network or increase service levels without additional funding.
- Ongoing reliance on reactive maintenance, particularly in areas with older infrastructure or incomplete asset data.
- Targeted asset renewal and upgrade activities will proceed, but these will be prioritised based on condition, risk, and available grant opportunities.

1.4 Future Demand

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

- Increasingly higher rainfall intensities due to global warming
- Increased rainfall runoff due to an increase in development
- Population increases

- Technological changes
- Demographic shifts, including an ageing population and greater cultural diversity, resulting in changing community expectations
- Community aspirations

Strategies to manage these demands are discussed in Section 4.0.

1.5 Lifecycle Management Plan

How we plan to manage and operate the assets at the agreed levels of service throughout their lifecycle is contingent on 10-year Long-Term Financial Plan (LTFP).

Furthermore, when Gannawarra Shire Council commits to the upgrade of existing and acquisition of new assets, future operations, maintenance and renewal costs including depreciation will increase.

1.5.1 What does it Cost?

The lifecycle costs necessary to provide the services covered by this AM Plan include operations, maintenance, renewal and upgrade of existing assets, and the acquisition of new assets to meet demand. Disposal of assets is also considered.

When lifecycle costs are prepared for a minimum 10-year planning period, they can be used to inform the 10-year LTFP. The first 10-year lifecycle forecast is estimated to cost $12179551 or $1217955 on average per year.

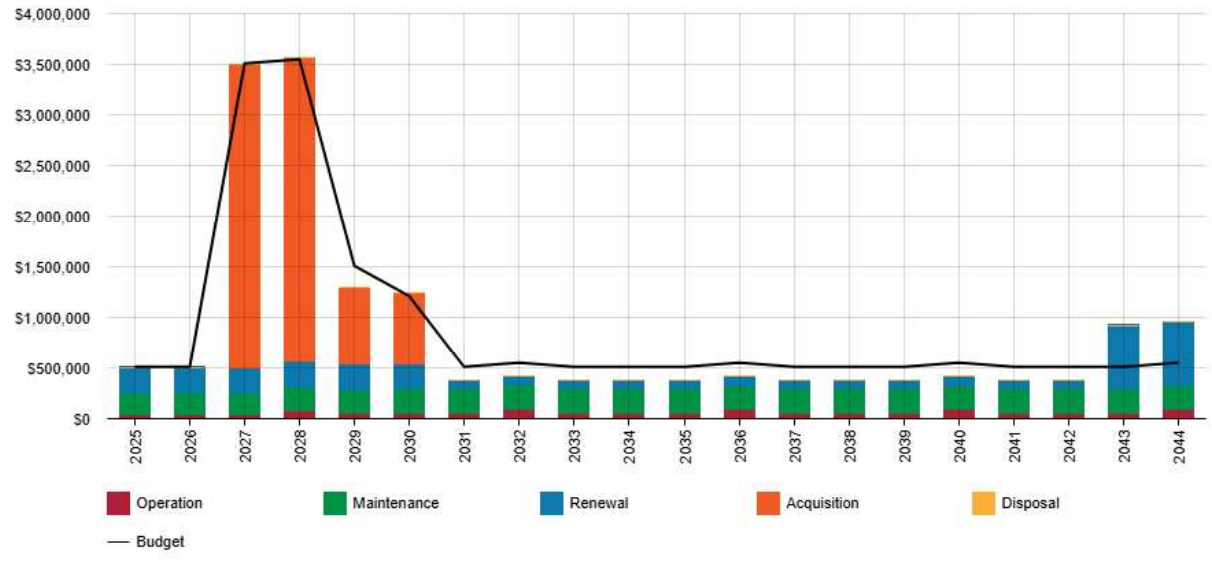
Depreciation is excluded from these cost estimates.

1.5.2 What we will do

The funding made available in the first 10-years' of the LTFP is $12880000 or $1288000 on average per year which is approximately 105.75% of the cost to undertake the lifecycle activities.

The reality is, only what is funded in the LTFP can be provided. Informed decision making depends on the AM Plan emphasising the consequences of planned budgets on the service levels provided and communicating the residual risks. It is important to ensure the organisation is delivering the services in a financially sustainable manner.

The LTFP, on average, for the first 10-years is sufficient to provide services. This is shown in the figure below.



Forecast Lifecycle Costs and Planned Budgets

Amounts are shown in real values (i.e., current values, net of inflation).

We plan to provide Stormwater drainage services for the following:

- Operation, maintenance, renewal and acquisition of stormwater assets to meet service levels set by Gannawarra Shire Council in annual budgets.

- Implement the budgeted activities within the 10-year planning period.

1.5.3 What we cannot do

We currently do allocate enough budget to sustain services at the proposed standard including the provision of new assets. Works and services that cannot be provided under present funding levels are:

- Replacing the aging Stormwater pipes.
- Entering into large-scale, multi-year maintenance or service contracts beyond essential operational needs.
- The current budget allocation is mostly limited to Operation, Maintenance and Renewals.
- Delivery of new assets or major enhancements is generally dependent on the availability of external grant funding.

1.6 Risk Management

The planned budget is sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Blockages of stormwater pipes
- Failure of stormwater systems by means of structural damage
- Insurance claims against Council due to property flood damage
- Reduced service levels or amenity, resulting from delayed maintenance or asset failures.

Strategies and actions to manage these risks are discussed in Section 6.0.

1.7 Financial Summary

Providing financially sustainable and affordable services from infrastructure requires the careful management of service levels, costs and risks.

The 10-year LTFP is $1288000 on average per year providing affordable and sustainable services for the foreseeable future. This indicates that 105.75% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the LTFP.

Asset values are forecast to increase as additional assets are added into service.

1.8 Monitoring and Improvement Program

Key assumptions made in this AM Plan are:

- Forecast is in “today’s” (2025 / 26) dollars.
- Staffing needs are resourced adequately – for Asset data work and Operational & Maintenance tasks,
- No significant changes to Legislation / Standards will occur over the planning period.

The Asset Register Method was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on medium level-of-confidence information.

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

- Stormwater assets condition assessment program implemented to inform renewal planning and prioritisation.
- Annual reviews of the Renewal and Replacement Program as part of the review / preparation of the 10-year Capital Works Program, and individual projects are assessed for inclusion and prioritisation in the Annual Capital Works Program.
- Approach to risk management reviewed and additional attribute data collection is considered / implemented to enhance decision-making.
- Asset Management Plan to be reviewed on a four-yearly basis, aligned with the condition assessment program and the statutory requirements.

2.0 INTRODUCTION

2.1 Background

This AM Plan communicates the actions and necessary funds required to sustainably deliver services through the careful management of assets for the foreseeable future.

The AM Plan is to be read with the Gannawarra Shire Council planning documents. This should include the Asset Management Policy and Strategy, where developed, along with the following planning documents:

- Other related Asset Management Plans
- Delivery Program and Operational Plan
- 2025-2029 Gannawarra Shire Council Plan
- Long Term Financial Plan

The infrastructure assets covered by this AM Plan include stormwater pipes and pits, culverts, pumps and pumpstations around Gannawarra municipality. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

These assets are used to provide stormwater drainage services.

The infrastructure assets included in this plan have a total replacement value of $32179791.

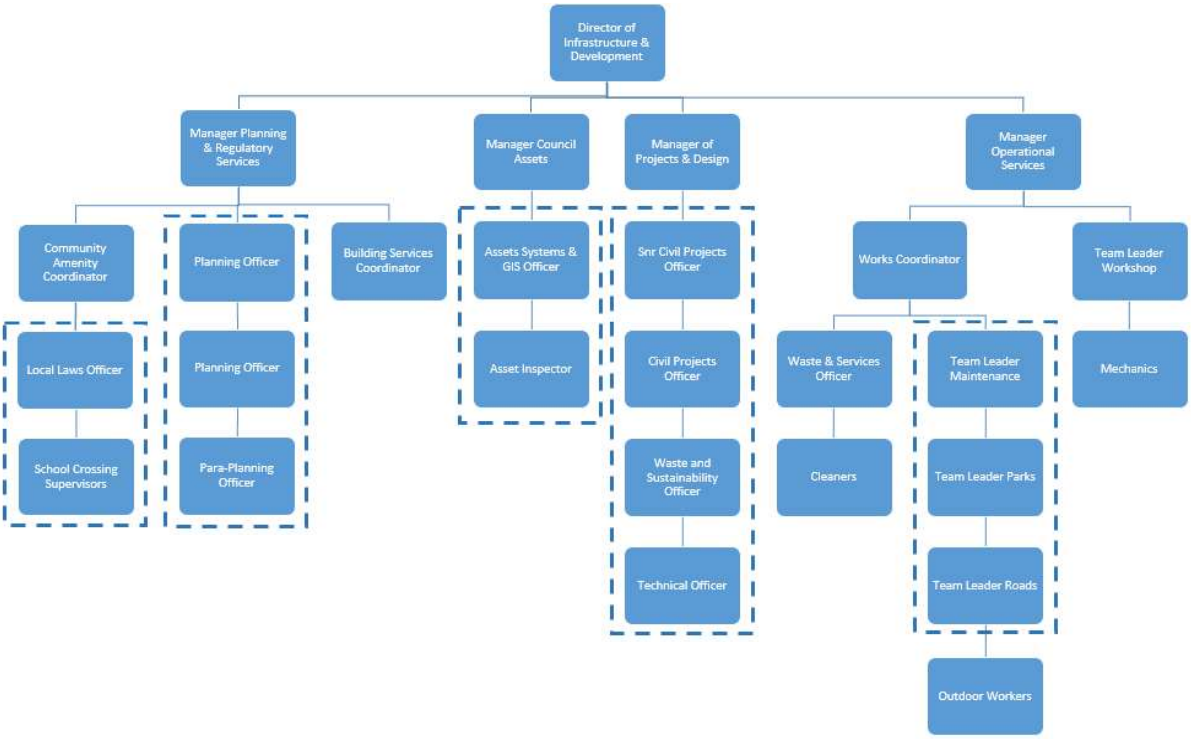
Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Gannawarra Shire Council (Councillors)	■ Represent needs of community/shareholders. ■ Allocate resources to meet planning objectives in providing services while managing risks. ■ Ensure service sustainable.
Gannawarra Shire Council - CEO	■ Key accountability for all aspects of service operation / delivery. ■ Allocate resources to meet the organisation's objectives in providing services while managing risks.
Gannawarra Shire Council - Director Infrastructure and Development	■ Oversight of Stormwater assets. ■ Provide strategic direction in the management of assets. ■ Ensure agreed checks and reporting frameworks are adhered to and enforced.
Gannawarra Shire Council - Asset Officers	■ Custodian of Asset data, responsible for keeping data up to date. ■ Preparation and implementation of AMP.
Gannawarra Shire Council – Works Depot & Field Workgroups	■ Operation & Maintenance delivery to meet agreed levels of service. ■ Refer critical issues to senior management for attention.
State & Federal government (Authorities / Agencies)	■ Guidelines provision and approvals. ■ Service delivery support (funding grants / guidance). ■ Reinstatement support following natural disaster impairment.
Local Community, Businesses and General Public	■ Key service Customer. ■ Provision / source of data for further planning. ■ Service performance and defects reporting.

Key Stakeholder	Role in Asset Management Plan
Visitors to the Shire	■ Service performance and defects reporting. ■ "Fresh eyes" feedback provision.
Council's Insurer	■ Asset related incident support. ■ Funding coverage for service reinstatement.
Emergency Agencies (Police, Fire, Ambulance, VICSES)	■ Emergency incidents investigation / resolution.

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



2.2 Principles, Goals and Objectives of Asset Management

The principles of asset management as per the International Standards for asset management are:

- **Value**: asset management focuses on the value assets provide to the organization over time.
- **Alignment**: asset management aligns financial, technical and operational decisions with the organizational objectives, promoting vertical and horizontal coordination.
- **Leadership**: leadership and sustained commitment at all levels are crucial for successful asset management.[1]

Our goal for managing infrastructure assets is to deliver the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers.

The key objectives of infrastructure asset management as defined by the International Infrastructure Management Manual are:

- Defining levels 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 accommodates the required expenditure and how it will be funded.[2]

[1] ISO 55000:2024 Asset Management – Vocabulary, overview, and principles

[2] IPWEA International Infrastructure Management Manual (IIMM), Sec 1.2.1

3.0 LEVELS OF SERVICE

Levels of service define the standards and performance targets that infrastructure assets are expected to meet to ensure they provide reliable, safe, and efficient services to the community.

3.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the Gannawarra Shire Council. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Gannawarra Shire Council and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

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 Gannawarra Shire Council vision, goals and objectives.

Our vision is:

- Our community is proud, connected and inclusive, and we actively seek opportunities that enhance lifestyle and liveability.
- Gannawarra is growing and is economically diverse, with unique tourism destinations, cultural and natural assets.
- We recognise and appreciate the value of the natural environment and how it connects our communities. We are resilient to a changing environment through innovation and collaboration.

Strategic goals have been set by the Gannawarra Shire Council. The relevant goals and objectives and how these are addressed in this AM 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: LIVEABILITY	Prioritise maintenance, renewal and improvement of assets including local roads, footpaths, and community infrastructure that support accessibility and safety.	Detailing of financial performance ratios including asset renewal funding ratio and lifecycle finding ratio.
GOAL 2: GROWTH	Support local businesses, employment pathways, digital connectivity and attract strategic investment.	Supporting future growth by balancing future drainage planning with service level objectives and financial sustainability targets.
GOAL 3: SUSTAINABILITY	Manage Council's budget responsibly by delivering cost-effective services, pursuing new revenue opportunities, and ensuring long-term financial sustainability.	Providing options to achieve goals including balancing budgets, reducing levels of service and the risk consequences of both.
GOAL 3: SUSTAINABILITY	Protect our environment and prepare our community for a changing climate.	Planning of investment into new / upgraded Stormwater assets with attention to resilience, function and capacity.

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 service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	*Requirement*
Local Government Act 2020 (Vic)	Establishes the role, powers, and responsibilities of local Councils, including the requirement to develop and maintain a long-term financial plan and asset management plans to support the sustainable delivery of services, including stormwater management.
Local Government (Best Value Principles) Act 1999 (Vic)	Requires Councils to deliver services efficiently, effectively, and in a manner that meets community needs. Applies to stormwater asset management through continuous improvement in service quality and environmental responsibility.
Road Management Act 2004 (Vic) and associated Regulations	Governs the management of public roads, including associated infrastructure such as roadside drainage assets. It defines responsibilities for road authorities in relation to the inspection, maintenance, and repair of road-related stormwater infrastructure.
Water Act 1989 (Vic)	Regulates the management, use, and conservation of Victoria's water resources, including controls over the discharge of stormwater into waterways to protect water quality and environmental values.
Environment Protection Act 2017 (Vic)	Establishes duties to minimise environmental harm, including stormwater pollution. Councils must comply with the General Environmental Duty (GED) to prevent environmental risks from stormwater discharge.
Environment Protection and Biodiversity Conservation Act 1999	Applies to stormwater discharge where it may impact matters of national environmental significance (e.g. Ramsar wetlands). This Act may trigger environmental assessments if drainage infrastructure affects sensitive ecosystems.
Subdivision Act 1988 (Vic) and Subdivision (Procedures) Regulations 2011	Requires drainage infrastructure to be designed and constructed in accordance with approved engineering standards to manage stormwater runoff from new subdivisions and connect to external drainage systems.
Building Act 1993 (Vic), Building Regulations 2018, and Plumbing Regulations 2018	Regulates stormwater drainage from private properties, ensuring plumbing and drainage works meet compliance standards and do not adversely affect Council-managed stormwater infrastructure.
Planning and Environment Act 1987 (Vic)	Governs the use, development, and protection of land in Victoria. Local planning schemes include stormwater management requirements through overlays.
Occupational Health and Safety Act 2004 (Vic)	Applies to all works conducted within the road reserve or stormwater infrastructure areas, ensuring worker and public safety during maintenance and construction of stormwater assets.
Emergency Management Act 2013 (Vic)	Requires Councils to prepare and maintain a Municipal Emergency Management Plan (MEMP). This includes consideration of stormwater infrastructure and flood hazards as part of broader municipal emergency risk planning.
ResCode (Residential Development Standards)	Integrated into the Victoria Planning Provisions (VPP) and Planning Schemes, ResCode guides the design of new residential developments to ensure sustainable stormwater management and appropriate on-site stormwater retention and discharge.
Climate Change Act 2017 (Vic)	Establishes a framework for climate change mitigation and adaptation. Councils are required to consider climate change impacts in planning and infrastructure delivery, including stormwater infrastructure resilience to increased rainfall intensity and flood risk.

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: To provide effective, reliable and environmentally responsible stormwater infrastructure that protects property and supports sustainable development.

Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Safe travel without impedance.	Accessibility maintained for vehicles / pedestrians across public transportation infrastructure during and after any weather event.	Majority of serviced areas are adherent. Non-adherent areas are documented and plans being developed to address.	Unforeseen structural and service deterioration instanced will likely be occurring due to not having 100% of assets condition-inspected.
Stormwater assets are adequately maintained.	Number of notable defects reported.	Instances of poor performance are reported and addressed on a case-by-case basis.	The current trend is expected to remain stable, with potential increases in reporting anticipated during and following significant rainfall events.
Responsiveness to stormwater issues.	Response times to service requests and incidents.	Most high-risk and high-priority requests are responded to within target timeframes.	Service response performance expected to remain steady, though resourcing challenges may impact complex or lower-priority requests.
Flooding is prevented or minimised.	Number of flooding complaints or claims relating to stormwater infrastructure.	Localised flooding occurrences during major events.	Complaints likely to remain at similar level. Risk of increased localised flooding under higher rainfall intensity due to constrained upgrade / acquisition funding.
Environmental protection through quality controls of stormwater discharge.	Number of pollution incidents or reports of contaminated discharge.	Gross pollutant traps are in place in key areas.	Pollutant capture systems may experience reduced performance over time without targeted interventions / renewals.
Community is informed of stormwater issues and works.	Frequency and clarity of communications regarding drainage works and responsibilities.	Communications delivered through Council website, media releases and community engagement.	Level of communication expected to continue at current levels, subject to ongoing resource and staffing constraints.

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?

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

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.

Table 3.5: Customer Level of Service Measures

Type of Measure	*Level of Service*	*Performance Measure*	*Current Performance*	*Expected Trend Based on Planned Budget*
Condition	Stormwater assets are maintained in a serviceable state.	Percentage of network inspected in past 5 years. Condition profile of assets.	Approximately 10% of the network has been inspected within the last 5 years.	Network condition likely to remain stable. Inspection coverage may decrease without increased investment.
	Structural integrity of assets is monitored and managed.	Number of recorded critical defects or structural failures per annum.	Critical areas identified and resolution plans in place. Known problem areas are monitored.	With the 5% inspection sample size, there is potential for undetected deterioration.
	Confidence levels		Low	Medium
Function	Drainage assets function effectively to convey stormwater.	Number of reported blockages or hydraulic failures.	Reactive maintenance addresses reported and high-risk blockages.	Frequency of functional failures expected to remain steady.
	Stormwater infrastructure aligns with design capacity.	Performance during "design" rain events.	Some older systems underperform in major rainfall.	Functional gaps to remain where upgrades are not yet prioritised.
	Confidence levels		Low	Medium
Capacity	System capacity meets urban growth and rainfall needs.	Reports of flooding during weather events.	Localised capacity issues in ageing or undersized systems.	Some improvement through future capital works anticipated. Improvements a constrained by (grant) funding limitations.
	Assets support future growth and climate change.	Number of network sections assessed for capacity under growth and climate projections.	Limited assessments undertaken to date.	Without dedicated funding, proactive planning may be limited to priority growth areas only.
	Confidence levels		Medium	Medium

3.6 Technical Levels of Service

Technical Levels of Service – To deliver on the customer values, and impact they have on Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the lifecycle activities (see Section 5) and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.[3] Table 3.6 shows the lifecycle activities related to the current 10 year planned budget, and the forecast costs recommended in this AM Plan.

[3] IPWEA, 2015, IIMM, p 2|28.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Support growth and ensure adequate drainage infrastructure is in place in newly developed areas.	Length (m) of new stormwater pipes constructed and number of new drainage pits installed.	New assets installed in response to approved developments and subdivision works.	Proactive acquisitions aligned with future growth areas and climate adaptation requirements.
	Improve stormwater drainage service and reduce surface flooding in existing underserviced areas.	Number of priority projects funded per year.	1-2 upgrades or minor acquisitions occurring annually. Backlog remains.	Address minimum of 2–3 priority sites per year to reduce service gaps.
		Budget	$745,000	$1,000,000
Operations	Maintain system functionality through inspection, cleaning, and blockage response.	% of network receiving scheduled inspections and cleaning.	Routine cleaning in known trouble areas. Limited proactive inspections.	Investigate for an opportunity to expand CCTV and condition inspection program to cover 10% of network annually.
	Maintain operational responsiveness to community-reported drainage issues.	Average response time to service requests.	Requests responded to within agreed timeframes.	Maintain current performance levels.
		Budget	$50,000	$57,744
Maintenance	Preserve asset performance and prevent deterioration through maintenance program.	% of identified defects actioned within timeframes.	High-risk issues addressed, some delays on low-risk items.	Improve reactive maintenance response and begin minor proactive works.
	Undertake preventative maintenance to extend asset life.	Number of pits and pipes maintained or repaired annually.	Works carried out in a reactive manner. Limited preventive maintenance in place.	Establish a rolling preventive maintenance program.
		Budget	$168,000	$229,232
Renewal	Replace aging or failing assets to maintain level of service and system integrity.	Length (m) of stormwater pipes renewed and pits rehabilitated.	Renewal rate at sustainable level.	Maintain renewals works and funding to align with lifecycle modelling recommendations.
		Budget	$325000	$185980
Disposal	Provide fit for purpose stormwater infrastructure	Obsolete “legacy” assets are decommissioned in a safe manner.	No disposals are planned.	Disposals driven by need / demand analysis.
		Budget	$0	$0

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 that circumstances such as technology and customer priorities will change over time.

4.0 FUTURE DEMAND

Future demand refers to the anticipated need for infrastructure services driven by factors such as population movement, economic development, technological advancements, and changing environmental or community expectations.

4.1 Demand Drivers

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

Demand drivers help predict future infrastructure needs and guide planning and investment decisions.

4.2 Demand Forecasts

The current position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented in Table 4.3.

4.3 Impacts 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.

The impact on service delivery will be managed through a combination of managing and upgrading existing assets and the provision of new assets to meet demand. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to manage demand are shown in Table 4.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population / demographic change	Population levels are currently stable.	Future growth likely due to new jobs and supported by new housing development plans.	Increase runoff from urbanisation. Reduced natural area runoff. Expectation of higher maintenance service levels. Higher demand on existing stormwater network capacity. Increase of pollutants entering stormwater system.	Utilise existing infrastructure and undertake Community surveys to determine future needs
Community expectation change	Issues get raised over condition and suitability from time to time.	The trend is likely to develop, and the numbers of raised concerns is likely to increase.	Additional inspections and maintenance will likely be required. Additional consultations prior to asset renewals.	Continuous data driven improvement of inspections and maintenance program.
Council financial sustainability	Condition driven repairs and renewals are often delayed.	Repairs / renewals workload likely to increase due to the number of aging assets.	Inability to fund renewals at 100% renewal ratio.	Consistently communicate the importance of the stormwater network to community wellbeing, personal health and prosperity. Advocate for repairs to be approved and delivered in a timely manner.

Climate change	Annual rainfall 350mm to 400mm.	5% increase in rainfall intensity per C of global warming (Engineers Australia,2014 Discussion Paper: An interim guideline for consideration climate change in rainfall and runoff.	More intense and less frequent rainfall events resulting in increased runoff, Increased erosion and sedimentation within stormwater networks increasing build up and potential blockage, increased sized pipes required to maintain same service.	Utilise existing Infrastructure and upsize infrastructure when appropriate to do so. Risk management approach to upgrading infrastructure, promote onsite stormwater retention systems including rainwater tanks.

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 Gannawarra Shire Council to ongoing operations, maintenance and renewal costs, and depreciation expenses for the period that the service provided from the assets is required. These future costs and expenses are identified and considered in developing the long-term financial plan.

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 that needs to be managed.

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]

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

Risk and opportunities identified to date are shown in Table 4.5.1

Table 4.5.1 Managing the Impact of Climate Change on Assets and Services

Climate change risk	Projection	Impact on services	Climate Change Management Plan
Increased intensity of rainfall events	Increased intensity of rainfall	Stormwater drains and gutters will likely surcharge more often and may cause undesirable ponding	Prioritise renewals and upsize drainage infrastructure to suit current standards
Increased intensity of rainfall events	Flooding	The existing infrastructure may not be adequate to cater this increased intensity of rainfall	Prioritise renewals using a risk management approach
Temperature variations	Damages to the infrastructure assets	Temperature may exceed design limitations causing structural damage / impairment	Explore the alternate method for design / construction. Conventional designs and installations may not cope in times of extreme heat.
Loss of soil moisture due to extreme heat	Drought	Displaced stormwater pipes. Damages to the infrastructure.	Explore the alternate method for design / construction. Our conventional designs and construction may not cope in times of extreme heat.
Energy grid strain and outages	More blackouts during heavy rain / storm events	Service interruptions for pumpstations causing short-term service impairments	Install backup power supplies (solar + batteries or generators).

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

Additionally, the way in which we construct new and upgrade existing 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.

Table 4.5.2 summarises opportunities to build climate change resilience into new and existing assets.

Table 4.5.2 Building Climate Change Resilience into New and Existing Assets

Asset Description	Climate change risk	Resilience Plan for New Assets	Resilience Plan for Existing Assets
New stormwater drainage systems	Storm Intensity	Design to accommodate projected increases in rainfall intensity and frequency.	Review upgrade potential during renewals to meet contemporary design standards for storm intensity.
New stormwater drainage systems	Water usage	Many of our facilities have a high stormwater run-off / township water use	Require stormwater efficient design in any new works (rainwater tanks, etc.).
Stormwater infrastructure	Floods	Site selection and system capacity should consider increased flood risk zones and groundwater levels.	Identify vulnerable areas and prioritise flood mitigation works through proactive planning.
Open channels, swales, wetlands	Drought and reduced frequency of flows	Use vegetation tolerant to climate variability. Incorporate dry-period flow management solutions.	Enhance existing assets through native vegetation.

The impact of climate change on new and existing assets is evolving and new opportunities will be developed in future revisions of this AM Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Gannawarra Shire Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) throughout their entire lifecycle, from acquisition or creation to disposal. The goal is to maximise the value of the assets while minimising costs and risks, ensuring they continue to meet performance requirements over time.

From a financial perspective, infrastructure activities tend to be classified as being either Operating or Capital. The lifecycle activities used in the asset management and financial planning and reporting process cover:

- **Capital**
    - **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).
    - **Renewal –** the activities that replace or restore assets to the standard it had originally provided (e.g., road resurfacing and pavement reconstruction, pipeline replacement and building component replacement).
- **Operating**
    - **Operations** - the routine activities that keep services accessible and effective, balancing efficiency with user expectations (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.)
    - **Maintenance –** the preventative and corrective actions to sustain asset functionality and minimise unexpected failures. Maintenance activities enable an asset to provide service for its planned life (e.g., road patching, unsealed road grading, building and structure repairs).
    - **Disposal –** the decommissioning, removing, or repurposing of assets that are no longer cost-effective, safe, or necessary (e.g. shutting down an old water treatment plant, demolishing unsafe buildings, dismantling old bridges, etc.).

A pictorial representation of the asset lifecycle activities is shown below in Figure 5.0.

Figure 5.0: Asset Lifecycle Activities

5.1 Background Data

5.1.1 Physical parameters

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

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Stormwater Pipes	71,048 m	$19,784,905
Stormwater pits, pumps and pumpstations	2033 no.	$12,394,886
TOTAL		**$32,179,791**

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

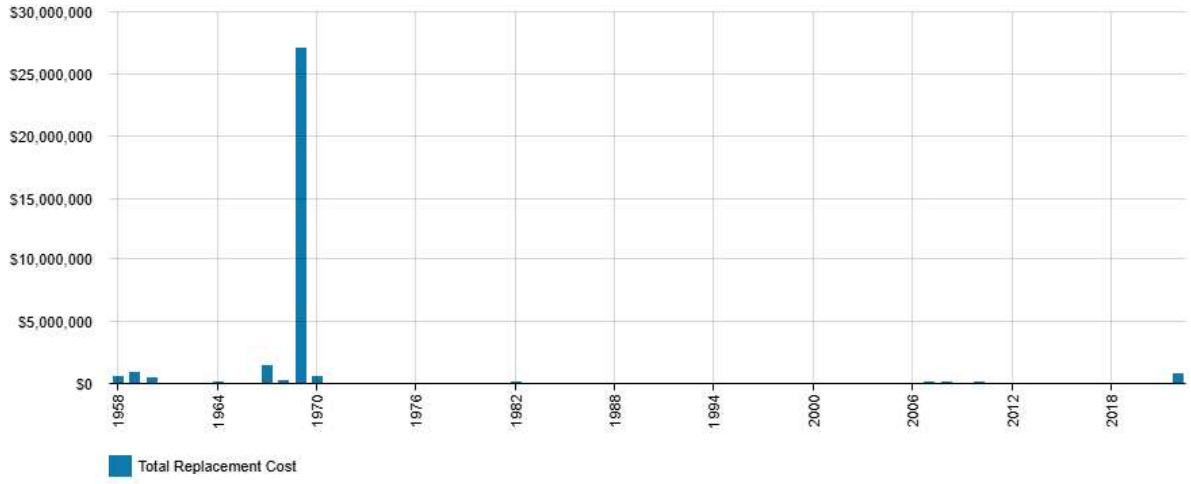


Figure 5.1.1: Asset Age Profile

Amounts are shown in real values (i.e., current values, net of inflation).

According to the figure above, it appears that the majority of stormwater assets are recorded as having been installed in 1969. However, it is likely that 1969 represents the year Council implemented its asset management system and assets with unknown installation dates were defaulted to this year during the initial data entry.

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
Drainage systems installed pre-1980	Undersized infrastructure unable to meet current rainfall intensity and urban runoff volumes.
Areas lacking formal drainage infrastructure	Surface water overland flow causing localised flooding and property access issues.
Open drains in residential or urban zones	Increased maintenance requirements, erosion, and safety concerns due to exposed channels.
Network segments with poor pit connectivity	Reduced efficiency in stormwater capture and conveyance leading to localised ponding.

The above service deficiencies were identified from drainage network reviews and applied professional judgment.

5.1.3 Asset condition

Condition is currently monitored via a process of carrying out 5% inspection of entire network every 3 – 5 years.

Condition is measured using a 1 – 5 grading system[5] 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
0	**Not Assessed**
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.

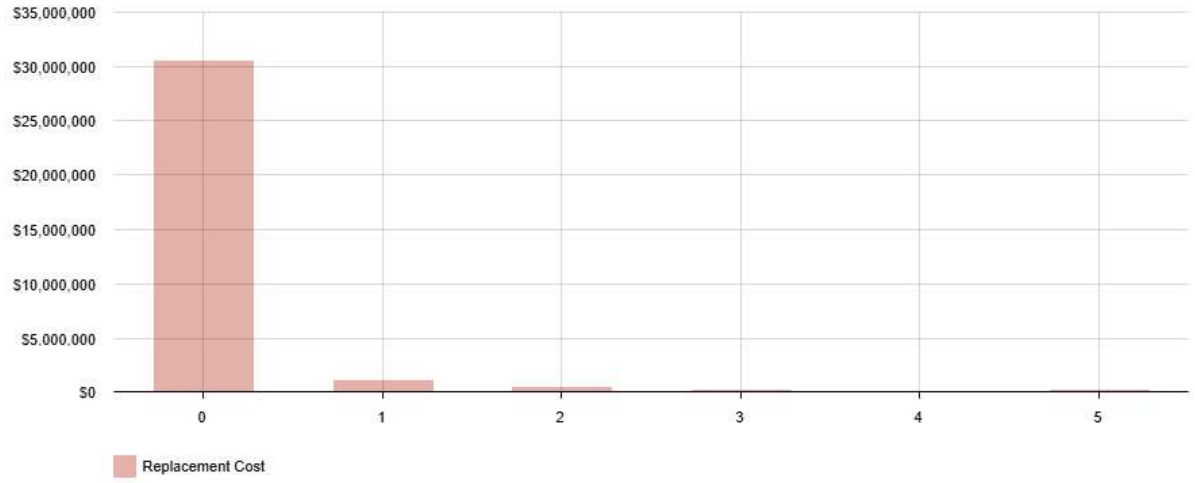


Figure 5.1.3: Asset Condition Profile

The condition distribution summarises the outcome of the recent condition assessment of the 5% of the network and indicates acceptable service provision with a small portion of assets in unsatisfactory condition.

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.

The trend in maintenance budgets are shown in Table 5.2.1.

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

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget $
2024 / 25	$168,000
2025 / 26	$168,000
2026 / 27	$168,000

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 have been identified and are highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

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

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.

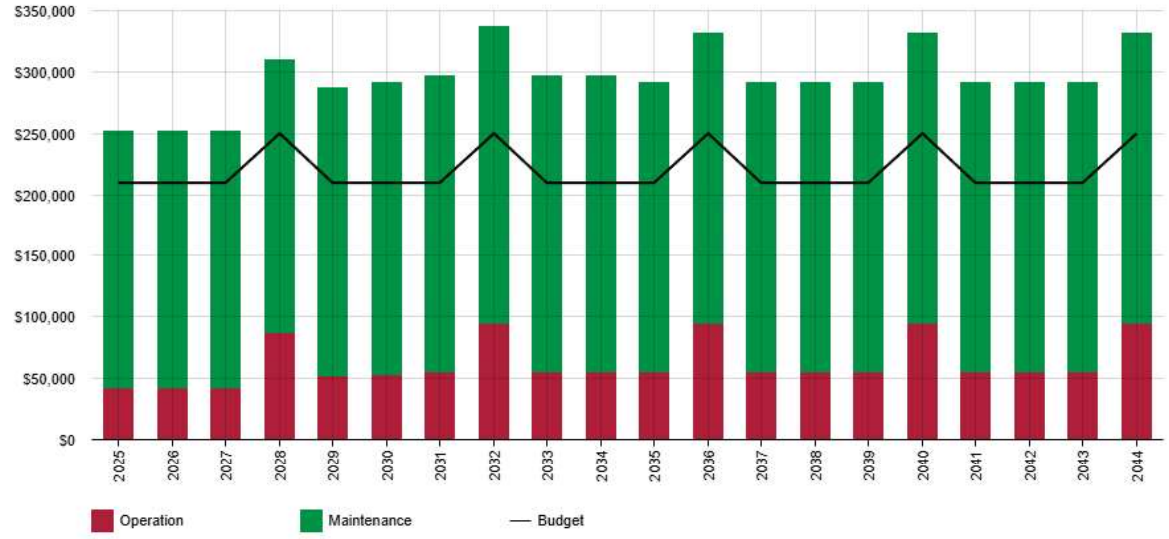


Figure 5.2: Operations and Maintenance Summary

Amounts are shown in real values (i.e., current values, net of inflation).

Council is currently maintaining a funding level for stormwater maintenance and operations that is marginally below the forecast requirement. While this shortfall is considered manageable in the short term, it will need to be addressed in the medium to long term due to the anticipated increase in the asset base from planned acquisitions, which will place additional pressure on operational and maintenance resources.

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 (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 February 2011 (Drainage Asset Management Plan Final Report – February 2011, Gannawarra Shire Council)[6]

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Stormwater Pipes	94 years
Stormwater Pits / Manholes	94 years
Culverts	94 years
Pumps	94 years
Pumpstations	94 years

The estimates for renewals in this AM Plan 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. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).[7]

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.[8]

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
Asset has reached or exceeded its useful life and condition is rated poor or very poor	25%
Asset services high-risk or flood-prone areas (risk to public safety or property)	25%
Asset supports drainage for key land use areas (e.g., town centres, industrial zones)	15%
Asset is part of an integrated system impacting multiple downstream or upstream segments	15%

[6] Enter Reference to Report documenting Review of Useful Life of Assets
[7] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[8] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Criteria	Weighting
Recurrent maintenance issues or complaints recorded for this asset or segment	10%
Opportunity to coordinate with other planned capital works or development projects	10%
Total	**100%**

5.3.2 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 5.3.2. A detailed summary of the forecast renewal costs is shown in Appendix D.

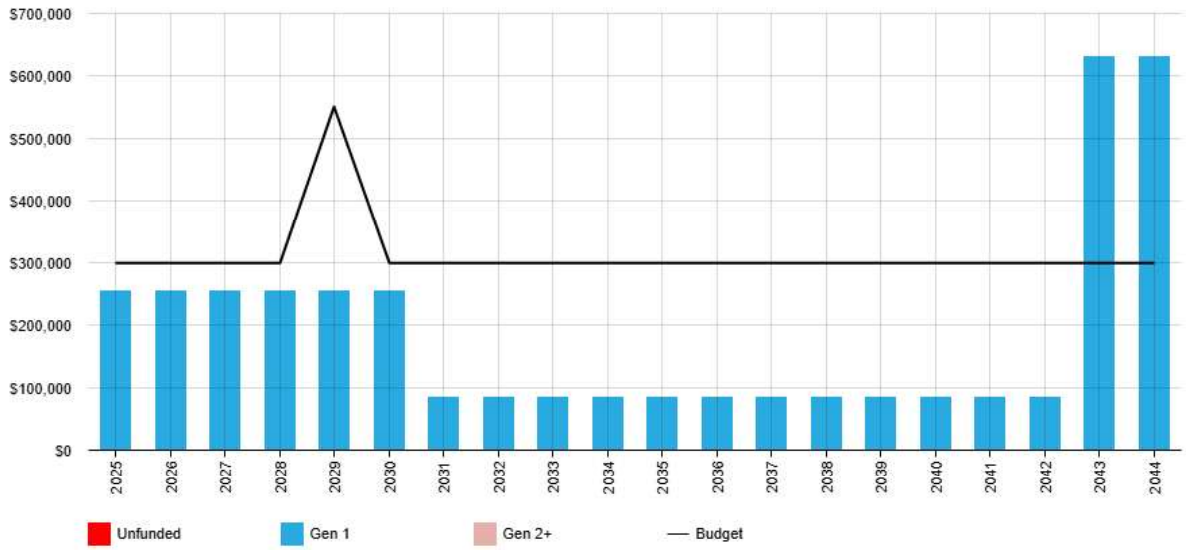


Figure 5.3.2: Forecast Renewal Costs

Amounts are shown in real values (i.e., current values, net of inflation).

Available data indicates that routine annual asset renewals will continue across the 20-year planning horizon to maintain the serviceability of stormwater infrastructure. In addition to these ongoing works, the upgrade of the Kerang Tate Drive Pumpstation has been identified as a major capital project within this period. While the upgrade primarily addresses capacity and performance improvements, a portion of the associated expenditure has been allocated towards asset renewal, reflecting the replacement of ageing components as part of the project scope. This partial renewal expenditure is currently programmed for the 2029–30 financial year.

5.4 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its original service level. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Gannawarra Shire Council.

5.4.1 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 Gannawarra Shire 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 5.4.1.

Table 5.4.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Addresses identified flooding or drainage risk to public safety or property	40%
Supports future growth areas or aligns with Council strategic plans	25%
Addresses level of service concerns in currently underserved / problematic drainage service areas	20%
Improves environmental outcomes or water quality	15%
Total	**100%**

5.4.2 Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarized in Figure 5.4.1 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

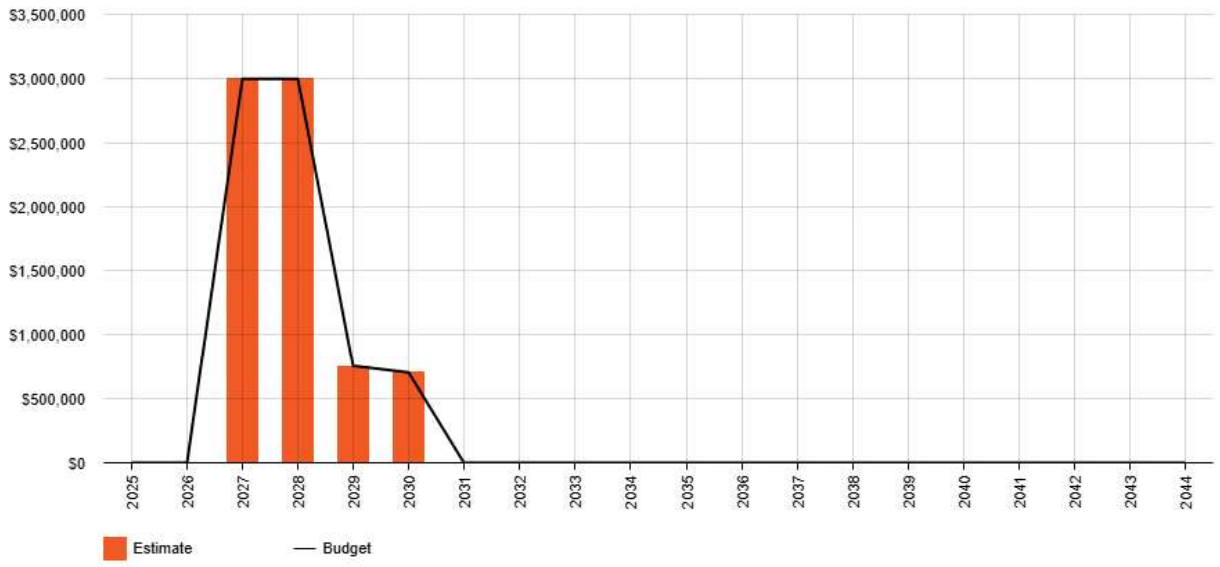


Figure 5.4.1: Acquisition (Constructed) Summary

Amounts are shown in real values (i.e., current values, net of inflation).

When the Gannawarra Shire Council 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 5.4.2.

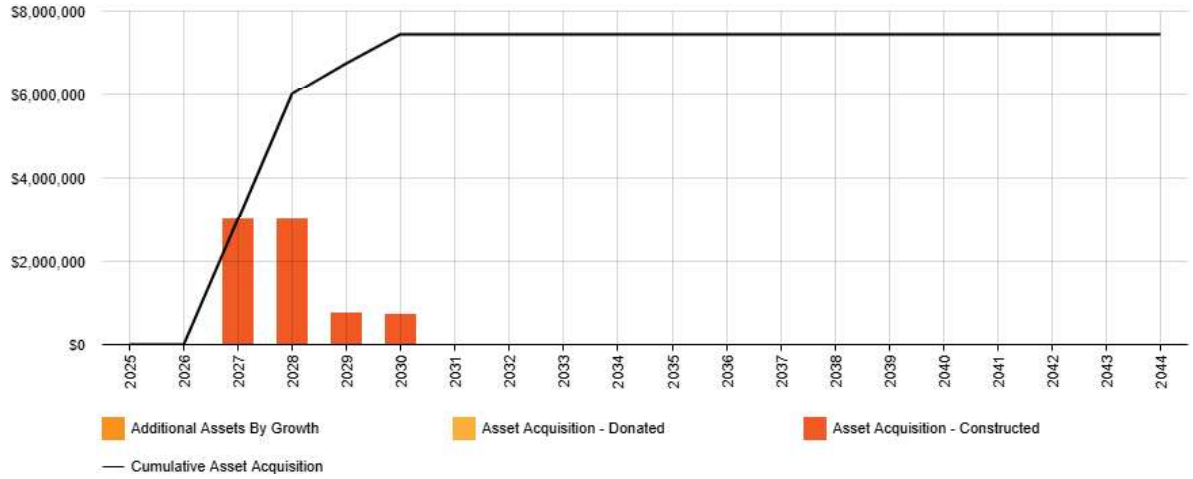


Figure 5.4.2: Acquisition Summary

Amounts are shown in real values (i.e., current values, net of inflation).

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.

The forecast acquisition costs over the planning period are closely aligned with the proposed new capital budget allocations. However, delivery of these works is highly dependent on the availability of external grant funding. Without such funding, several key projects may be deferred or reprioritised. The major acquisition priorities include: the Koondrook Development: Stage 2 – Township Drainage, the Hayman Lane Stormwater Pump Station, and the Kerang Tate – Drive Pump Upgrade (which includes a new asset acquisition component alongside planned renewal in 2029/30).

5.5 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 5.5. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.5. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Table 5.5: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
No disposals identified in this plan	Nil	Nil	$0	$0

5.6 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.6. 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.

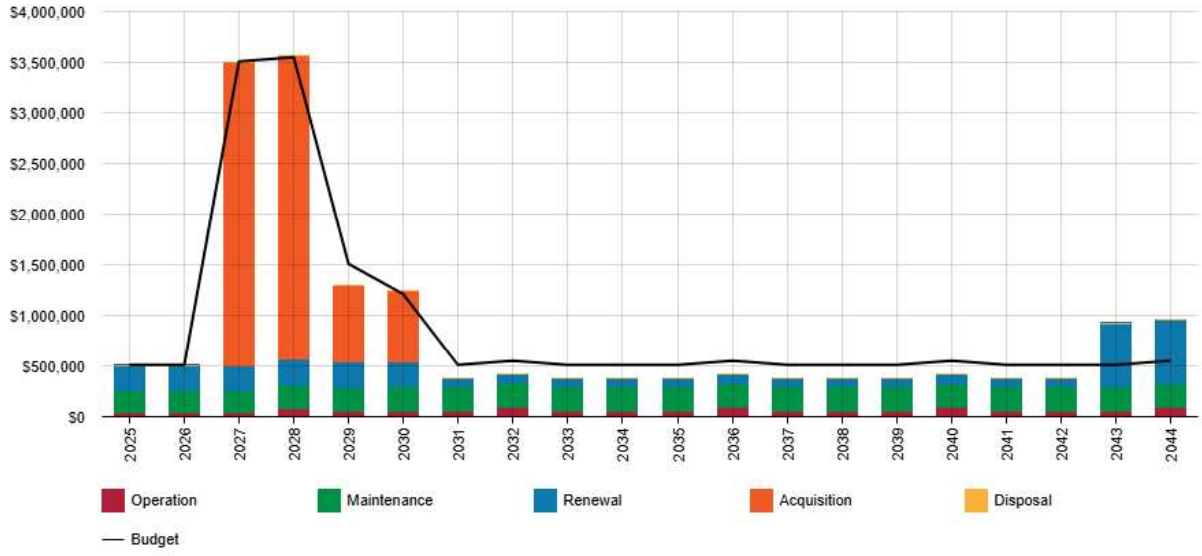


Figure 5.6: Lifecycle Summary

Amounts are shown in real values (i.e., current values, net of inflation).

The planned budget is generally sufficient to support the objectives set out in this Asset Management Plan. It enables the renewal of existing stormwater assets already identified as being in poor condition.

While major deficiencies are not currently evident, the budget does not allow for comprehensive renewal of all ageing assets as they reach end-of-life. This creates a moderate risk that service levels may gradually decline over time, particularly if unanticipated asset failures or increasing service demands arise. Ongoing monitoring and adjustment of renewal priorities will be necessary to ensure that service outcomes remain sustainable during the planning period.

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'[9].

An assessment of risks[10] 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 stormwater pipes	Structural collapse, pipe blockage, joint failure	Significant localised flooding, service disruption, property and infrastructure damage, potential insurance claims
Stormwater pump stations	Mechanical or electrical failure, power outage	Backflow or surcharge events, major overland flooding, damage to property, health and safety risks
Pits and access chambers in private property	Dislodged/damaged pit lids, structural failure	Safety hazard for residents, trip and fall injuries, property damage
Outlets near waterways	Blockage, erosion, or structural damage	Environmental damage, sediment and pollutant discharge, erosion of creek banks
Gross Pollutant Traps (GPTs)	Full capacity, blocked screens, mechanical failure	Decreased water quality, pollutant discharge to waterways, compliance breach
Culverts under roads or footpaths	Blockage, structural collapse, inadequate capacity	Road and pedestrian access compromised, traffic disruption, damage to transport infrastructure

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.

[9] ISO 31000:2009, p 2

[10] REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

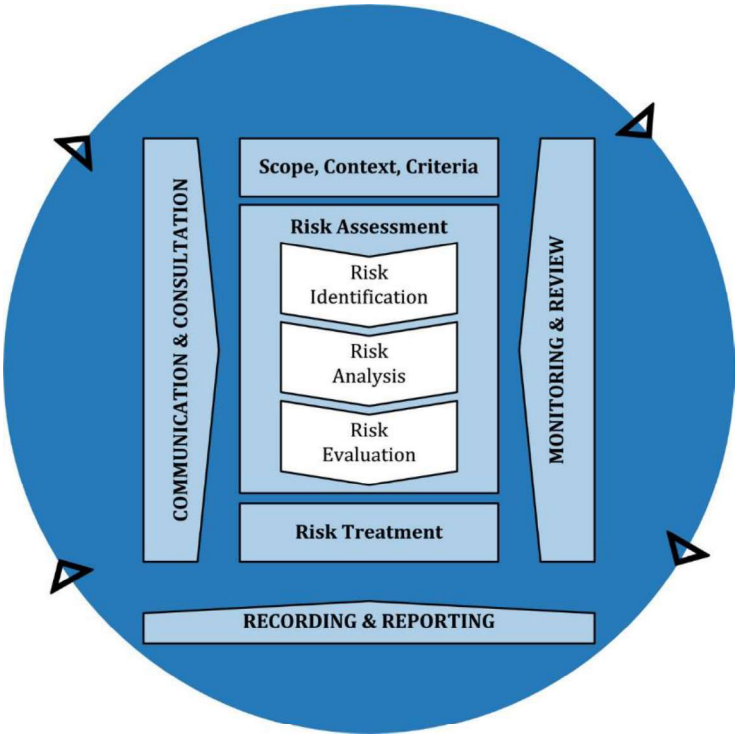


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

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[11] 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 Gannawarra Shire Council.

[11] 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
Major stormwater pipes	Structural failure or blockage leads to localised flooding and property damage	High	Ongoing condition inspections, targeted CCTV surveys, and jetting in known hotspots	Medium	Included in Operational & Maintenance forecast / costs
Pits located in private properties	Damaged, missing, or sunken pit lids result in trip hazards or flooding	High	Scheduled inspections, pit lid replacement program, and improved community reporting	Medium	Included in Operational & Maintenance forecast / costs
Stormwater pumpstations	Pump failure or power outage during storm event leads to flooding	High	Installation of backup power (generator), telemetry monitoring (where possible), routine servicing	Low	$100,000–$500,000 project CAPEX costs (grant dependent) + $10,000 annually
Undersized legacy drainage systems (pre-1980)	Overcapacity during storm events, causing overland flow	High	Prioritised upgrades during township development projects	Medium	Project scope specific: $200,000–$10,000,000 CAPEX costs / project
Recently acquired stormwater assets	Lack of budget for maintenance / renewals strains Depot resource capacity	Medium	Ensure lifecycle costs are included in LTFP	Low	Internal planning
Poor asset records in older urban areas	Asset failures due to unknown condition or location	High	Improve asset data quality through GIS capture and condition assessments	Medium	$40,000 once every 4 years

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 recovery planning, financial capacity, climate change risk assessment and crisis leadership.

Our current measure of resilience is shown in Table 6.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 6.3: Resilience Assessment

Threat / Hazard	Assessment Method	Current Resilience Approach
Increased storm intensity (climate change)	Review of BOM rainfall projections, flood modelling, and asset capacity assessments	Medium
Localised flooding from blocked pipes / drainage	Inspection reports, service request trends, condition data	Medium
Infrastructure failure due to asset age (e.g. pre-1980 pipes)	Asset condition data reviews, renewal forecasts, maintenance history	Low
Power outage affecting pump stations	Site-specific risk review, root-cause assessment and backup systems audits	Low
Inadequate funding for asset growth	Review of long-term financial plan and capital works forecasts	Medium
Data gaps in asset register	Gap analysis in GIS and asset management system	Low

6.4 Service and Risk Trade-Offs

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

6.4.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- No new assets to be acquired without external grant funding.
- Renewals will have to be prioritised – due dates for some renewals will have to be pushed out.

6.4.2 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- Increased risk of localised flooding due to delayed maintenance and reactive clearance of blocked stormwater drains and pits.
- Deterioration of stormwater infrastructure, leading to higher long-term renewal costs and greater likelihood of emergency failures.
- Reduced ability to meet future demand from population growth or new developments if planned upgrades and acquisitions are deferred.
- Lower customer satisfaction and increased service requests, particularly during or following significant rainfall events.

6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Increased risk of asset failure, particularly in ageing or undersized stormwater infrastructure, leading to unplanned and costly emergency repairs.
- Public safety risks and potential for property or infrastructure damage, resulting from failed or inadequately secured pit covers, surcharging drainage systems, or localised overland flooding.
- Environmental degradation, including erosion, pollution, and sedimentation of waterways due to unmanaged runoff or infrastructure overflow.
- Non-compliance with regulatory and legislative obligations, exposing Council to potential penalties or enforcement actions.

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

7.0 FINANCIAL SUMMARY

This section contains the financial and valuation forecasts resulting from the information presented in the previous sections of this plan. Forecasts will be improved as the discussion on sustainable levels of service, risk and cost matures in line with the financial strategy.

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 (planned renewal budget for the next 10 years / forecast renewal outlays for the next 10 years identified as warranted in the AM Plan), and
- Llifecycle Funding Ratio (planned lifecycle budget for the next 10 years / forecast lifecycle outlays for the next 10 years identified as warranted in the AM Plan).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[12] 174.75%

The Asset Renewal Funding Ratio illustrates that over the next 10 years we expect to have 174.75% of the funds required for the optimal renewal of assets.

The forecast renewal works along with the planned renewal budget, and the cumulative shortfall where one exists, is illustrated in Appendix D.

Lifecycle Funding Ratio – 10-year financial planning period

This AM Plan identifies the forecast operations, maintenance and renewal costs required to provide the levels of service to the community over a 10 year period. This provides input into 10 year long-term financial plan (LTFP) aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the planned 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 $472955 average per year.

The 10-year LTFP is $543000 on average per year providing affordable and sustainable services for the foreseeable future. This indicates that 114.81% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude depreciation and the acquisition of new and upgrade of existing assets.

Providing sustainable and affordable 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.

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

Table 7.1.2 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.

Forecast costs are shown in 2025/26 dollar values.

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

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2025	0	42000	209190	254272	0
2026	0	42000	209190	254272	0
2027	3000000	42000	209190	254272	0
2028	3000000	87100	222390	254272	0

[12] AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2029	750000	52200	235590	254272	0
2030	700000	53475	238890	254272	0
2031	0	54665	241970	83541	0
2032	0	94665	241970	83541	0
2033	0	54665	241970	83541	0
2034	0	54665	241970	83541	0
2035	0	54665	236260	83541	0
2036	0	94665	236260	83541	0
2037	0	54665	236260	83541	0
2038	0	54665	236260	83541	0
2039	0	54665	236260	83541	0
2040	0	94665	236260	83541	0
2041	0	54665	236260	83541	0
2042	0	54665	236260	83541	0
2043	0	54665	236260	629859	0
2044	0	94665	236260	629859	0

7.2 Valuation Forecasts

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at fair value at cost to replace service capacity (in accordance with the AASB 13 Fair Value Measurement standard).

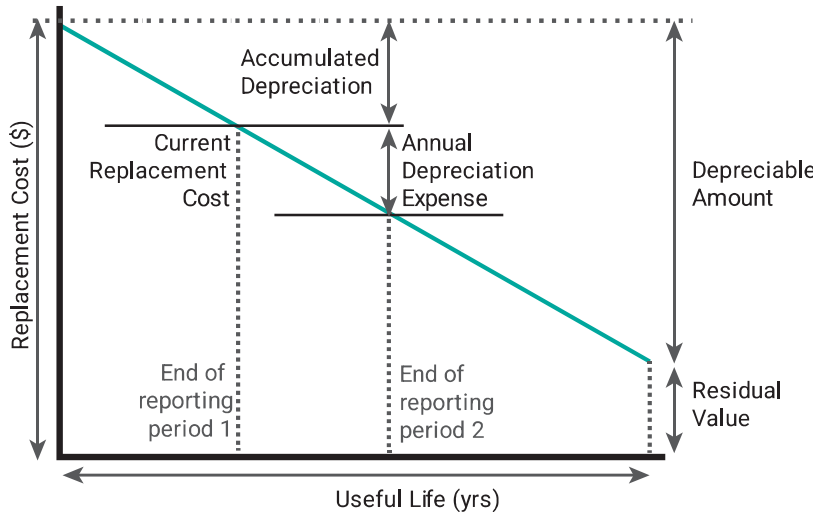


Figure 7.2.1: Valuation Terminology

Replacement Cost (Gross)	$32179791
Depreciable Amount	$32179791
Current Replacement Cost[13]	$25727296
Annual Depreciation Expense	$342338.0

Asset values are forecast to increase as additional assets are added into service.

Acquiring new assets will add to existing operations, maintenance, future renewal, and depreciation expenses.

[13] Also reported as Written Down Value, Carrying or Net Book Value.

8.0 ASSUMPTIONS AND IMPROVEMENT PLANNING

8.1 Data and Information Sources

8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is Synergy Financial System. The system has been capturing all Operational and Capital expenses since 2017.

8.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is the Gannawarra Shire Council's GIS and Confirm Asset Management systems which control the Asset Register and store all asset maintenance / operational records including customer requests.

8.2 Key Assumptions

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 forecasts.

Key assumptions made in this AM Plan are:

- Forecast is in "today's" (2025 / 26) dollars.
- Staffing needs are resourced adequately – for Asset data work and Operation & Maintenance tasks.
- No significant changes to Legislation / Standards occur over the planning period.
- 5% of the condition data sample accurately represents the assets networks profile - sample was extrapolated to the remaining 95%

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge. When doing so, the forecast remaining useful life in the asset register should be adjusted where necessary.

The Asset Register Method was used to forecast the renewal lifecycle costs for this AM Plan.

8.3 Forecast Reliability and Confidence

The forecast demands, costs, planned budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset management and financial planning and reporting, it is critical that the information is reliable and up to date. Data confidence is classified on an A to E level scale in accordance with the guidance provided in the International Infrastructure Management Manual. [14]

Table 8.3.1: 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 ± 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 ± 10%

[14] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

Confidence Grade	Description
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 ± 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 ± 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 8.3.2.

Table 8.3.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium	Climate change well documented. Population growth based on ABS Data.
Growth projections	Medium	Based on ABS data
Acquisition forecast	Low	Data is based on verbal reports / 5% inspection
Operation forecast	Low	Data is based on verbal reports / 5% inspection
Maintenance forecast	Low	Data is based on verbal reports / 5% inspection
Renewal forecast - Asset values	Low	Renewal forecast has been based on 5% inspection extrapolated across the Asset Register
- Asset useful lives	Low	Based on 5% sample (size) inspection. Large number of assets all recorded in one year
- Condition modelling	Low	Based on CCTV/Fixed Camera inspection and condition ratings done on 5% of the total network
Disposal forecast	Medium	Data is based on verbal reports

The estimated confidence level for and reliability of data used in this AM Plan is considered to be Low.

8.4 Improvement Plan

It is important that we recognise gaps in the planning process that require improvement to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 8.4.

Table 8.4: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Document customer service requests and completion status in the Asset Management system to support maintenance planning.	Asset Management Team	Internal staff time, capable AM system	FY 2026/27
2	Undertake 5-10% stormwater condition assessment using CCTV or fixed zoom camera inspections every 3-4 years to improve renewal forecasting.	Asset Management Team	Internal staff time, funding availability	Every 3-4 years

3	Implement a renewal modelling tool for Stormwater asset lifecycle analysis.	Asset Management Team	Internal staff time, funding availability	FY 2027/28
4	Establish capitalisation process to capture asset handover from capital (upgrade / subdivision) works.	Asset Management Team	Internal staff time, capable AM system	FY 2026/27
5	Develop and apply risk / criticality ranking to Stormwater assets.	Asset Management Team	Internal staff time, capable AM system	FY 2026/27
6	Implement a centralised Asset Management System (AMS) to consolidate asset data and improve accessibility.	Asset Management Team	Software procurement, training resources	FY 2026/27
7	Integrate asset management with financial planning by aligning AMPs with the Long-Term Financial Plan (LTFP).	Finance and Asset Management Teams	Internal staff time, staff collaboration	FY 2026/27
8	Integrate Asset Management System (AMS) with Financial System to improve alignment of asset and budget data.	IT, Finance and Asset Management Teams	Internal staff time, software procurement	FY 2028/29
9	Implement GIS-based Asset Mapping Enhancements for accurate spatial asset representation and analysis.	Asset Management Team	GIS software, Internal staff time for data validation	FY 2026/27
11	Improve data collection, review and update asset inventory to improve data accuracy and completeness.	Asset Management Team	Internal staff time, GIS/AM system access	FY 2028/29

8.5 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 12 months of Gannawarra Shire Council election.

8.6 Performance Measures

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

- 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 to 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 – 110%).

9.0 REFERENCES

- IPWEA, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/resourcesnew/bookshop/iimm
- IPWEA, 'NAMS+ - A Toolkit for Asset Management Planning', Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/resourcesnew/namsplus
- IPWEA, 2024 'International Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/resourcesnew/bookshop/iifmm
- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/resourcesnew/bookshop/pn12-1
- IPWEA, 2012, Practice Note 6 Long-Term Financial Planning, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn6
- IPWEA, 2014, Practice Note 8 – Levels of Service & Community Engagement, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn8
- ISO, 2024, ISO 55000:2024 Asset Management – Vocabulary, overview, and principles
- ISO, 2018, ISO 31000:2018 Risk management – Guidelines
- Gannawarra Shire Council Plan and Budget.

10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions and Source
The key assumptions are that the current financial climate will not improve, growth projections are sufficiently accurate and strategic plans / priorities will remain in-place with no substantial alterations.

A.2 – Acquisition Project Summary
The project titles included in the lifecycle forecast are included here:

- Koondrook Development: Stage 2 Township Drainage - $6,000,000
- Additional new Stormwater Pump Station at Hayman Lane - $700,000
- Kerang Tate Drive Pump Upgrade - $750,000

A.3 – Acquisition Forecast Summary

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2025	0	0	0
2026	0	0	0
2027	3000000	0	0
2028	3000000	0	0
2029	750000	0	0
2030	700000	0	0
2031	0	0	0
2032	0	0	0
2033	0	0	0
2034	0	0	0
2035	0	0	0
2036	0	0	0
2037	0	0	0
2038	0	0	0
2039	0	0	0
2040	0	0	0
2041	0	0	0
2042	0	0	0
2043	0	0	0
2044	0	0	0

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions and Source

Assumptions and relevant information relating to the Operation Forecast:

- Reactive tasks from community requests or weather events are included in forecasts.
- Assumes stable in-house staffing and contractor availability.
- Assumes current service levels are maintained throughout the forecast period.
- Includes operational costs for new assets listed in Acquisition Forecast.
- No major savings assumed, minor efficiencies expected through digital tools.
- Based on the current register data
- Forecast costs are in “today’s” (2025 / 26) dollars.

B.2 – Operation Forecast Summary

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2025	42000	0	42000
2026	42000	0	42000
2027	42000	5100	42000
2028	82000	5100	87100
2029	42000	1275	52200
2030	42000	1190	53475
2031	42000	0	54665
2032	82000	0	94665
2033	42000	0	54665
2034	42000	0	54665
2035	42000	0	54665
2036	82000	0	94665
2037	42000	0	54665
2038	42000	0	54665
2039	42000	0	54665
2040	82000	0	94665
2041	42000	0	54665
2042	42000	0	54665
2043	42000	0	54665
2044	82000	0	94665

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions and Source

Assumptions and relevant information relating to the Maintenance Forecast:

- Reactive tasks from community requests or weather events are included in forecasts.
- Assumes stable in-house staffing and contractor availability.
- Forecast supports maintaining current maintenance service standards.
- Assumes existing routine and cyclic maintenance schedules remain unchanged.
- Includes maintenance costs for new assets listed in Acquisition Forecast.
- No major savings assumed, minor efficiencies expected through digital tools.
- Based on the current register data
- Forecast costs are in “today’s” (2025 / 26) dollars.

C.2 – Maintenance Forecast Summary

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2025	168000	0	209190
2026	168000	0	209190
2027	168000	13200	209190
2028	168000	13200	222390
2029	168000	3300	235590
2030	168000	3080	238890
2031	168000	0	241970
2032	168000	0	241970
2033	168000	0	241970
2034	168000	0	241970
2035	168000	0	236260
2036	168000	0	236260
2037	168000	0	236260
2038	168000	0	236260
2039	168000	0	236260
2040	168000	0	236260
2041	168000	0	236260
2042	168000	0	236260
2043	168000	0	236260
2044	168000	0	236260

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

Assumptions and relevant information relating to the Renewal Forecast:

- Useful lives and the current degradation profile align with the average performance of the assets
- The 5 % condition assessed sample accurately reflects the condition profile and renewal needs of the network
- Renewals are scheduled primarily on condition ratings, supported by visual or CCTV inspections.
- Renewal of assets with low-risk defects will be deferred beyond planning period.

D.2 – Renewal Project Summary

The project titles included in the lifecycle forecast are included here:

- Pipe / Pit / Pump components of township drainage networks deemed to be in poor condition.
- Pumpstation's components due for renewal.

D.3 – Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2025	254272	300000
2026	254272	300000
2027	254272	300000
2028	254272	300000
2029	254272	550000
2030	254272	300000
2031	83541	300000
2032	83541	300000
2033	83541	300000
2034	83541	300000
2035	83541	300000
2036	83541	300000
2037	83541	300000
2038	83541	300000
2039	83541	300000
2040	83541	300000
2041	83541	300000
2042	83541	300000
2043	629859	300000
2044	629859	300000

Appendix E Disposal Summary

E.1 – Disposal Forecast Assumptions and Source
Assumptions and relevant information relating to the Disposal Forecast:

- No disposals are anticipated during this planning period

E.2 – Disposal Project Summary
The project titles included in the lifecycle forecast are included here.

- No disposals are anticipated during this planning period

E.3 – Disposal Forecast Summary

Table E3 – Disposal Activity Summary

Year	Disposal Forecast	Disposal Budget
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
2041	0	0
2042	0	0
2043	0	0
2044	0	0

Appendix F Budget Summary by Lifecycle Activity

The assumptions relating to the Planned Budget estimates:

- The funding is allocated based on the annual asset depreciation and high-level estimates.
- The project timing to construct Koondrook Development: Stage 2 Township Drainage, install an Additional new Stormwater Pump Station at Hayman Lane and complete the Kerang Tate Drive Pump Upgrade is realistic / attainable and (grant) funding will become available.
- Operational and maintenance forecast costs are in “today’s” (2025 / 26) dollars.
- Forecast budgets do not currently include provision for climate resilience driven major redesigns or upgrades of existing assets (unless integrated within planned upgrade projects).
- Renewal forecasts are prioritised by asset condition and risks, assuming no asset impairments or other major unforeseen failures will be occurring.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2025	0	42000	168000	300000	0	510000
2026	0	42000	168000	300000	0	510000
2027	3000000	42000	168000	300000	0	3510000
2028	3000000	82000	168000	300000	0	3550000
2029	750000	42000	168000	550000	0	1510000
2030	700000	42000	168000	300000	0	1210000
2031	0	42000	168000	300000	0	510000
2032	0	82000	168000	300000	0	550000
2033	0	42000	168000	300000	0	510000
2034	0	42000	168000	300000	0	510000
2035	0	42000	168000	300000	0	510000
2036	0	82000	168000	300000	0	550000
2037	0	42000	168000	300000	0	510000
2038	0	42000	168000	300000	0	510000
2039	0	42000	168000	300000	0	510000
2040	0	82000	168000	300000	0	550000
2041	0	42000	168000	300000	0	510000
2042	0	42000	168000	300000	0	510000
2043	0	42000	168000	300000	0	510000
2044	0	82000	168000	300000	0	550000