

Moyne Shire Council Drainage 2022 Asset Plan



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Acknowledgement of country

Moyne Shire Council acknowledges the traditional owners and custodians of the lands, waterways and country we live in.

We recognise and respect their diversity, resilience, and the ongoing place that Aboriginal and Torres Strait Islander people hold in our communities.

We pay our respects to the Elders past, present and emerging, and commit to working together in the spirit of mutual understanding, respect and reconciliation.

1. Introduction

1.1. Purpose

This Drainage Asset Management Plan (DAMP) details information about relevant infrastructure assets, with actions required to provide an agreed level of service in the most cost-effective manner whilst managing associated risks.

Covering a 10-year planning period, the DAMP defines the services to be provided, how services are provided, how assets will be managed and the resources required. The DAMP will link to Council's Long-Term Financial Plan (LTFP). This also covers a 10-year planning period.

The DAMP should be read in conjunction with other Moyne Shire asset and strategic planning documents, namely Asset Plan 2022 and Asset Management Policy 2022. Other key documents that should also be referenced include:

- My Moyne, My Future 2040 and the 2021-2025 Council Plan
- Long Term Financial Plan
- 2018 Victorian Rural Drainage Strategy (Department of Environment, Land, Water and Planning)
- Relevant Master Plans, Structure Plans and Precinct Plans
- Asset condition audits and reports
- Asset upgrade or renewal plans

1.2. Corporate framework

1.2.1. Vision and goals

The DAMP is prepared under the direction of Moyne Shire Council's vision, goals and objectives.

The people of Moyne embrace the region's extraordinary cultural and ecological country. Our fertile volcanic plains and pristine coast are the pride of Victoria's southwest.

From coast to country, our connected and vibrant communities are active stewards, working meaningfully towards the protection and advancement of environment, history, social and economic vitality for present and future generations.

My Moyne, My Future 2040 presents the community aspirations to support this Vision Statement under four pillars: Place, Environment, People and Economy. These aspirations and pillars (Figure 1) are reflected in the 2021-2025 Council Plan. Along with Asset Plan 2022, the DAMP supports the implementation of these two important strategic documents.

Place

Well-planned communities

We live in well-planned and connected neighbourhoods that protect our way of life, and cultural heritage.

Access to affordable housing

We all have access to housing that suits our budget, the size of our family and lifestyle needs.

People

Maintaining connectivity and sense of community

We stay connected to one another, young or young at heart; from all walks of life we find opportunities to come together.

Community transport

We can move around Moyne easily. We have access to affordable transportation services regardless of our age or where we live.

Environment

Renewable energy use and uptake

We are supported to live off the grid and have access to renewable energy benefits through local partnerships and an increased uptake of sustainable practices locally.

Regenerative agriculture practices We set the standard for sustainable farming practices. We actively reduce our carbon emissions and support the regeneration of land.

Economy

Innovation in agriculture

We are innovators and use technology to increase the quality and quantity of farming while protecting the environment.

Support local Industry

We support the growth of our local industries through digital innovations and encouraging local expertise.

Figure 1 - My Moyne My Future 2040 pillar priorities

1.2.2. Council Plan strategies

Key 2021-2025 Council Plan strategies and that the DAMP responds to include:

- Provision of infrastructure and services to support new development.
- Commence a review of the Moyne Planning Scheme and policy statements to encourage sustainable design in housing and urban planning and compliance.
- Encourage urban design principles and policy that support sustainable sub-division and housing developments and engage with developers and investors to establish collaborative, informed and innovative investment partnerships.
- Protection of the coastline and coastal communities from the impacts of climate change and extreme weather events.
- Work with Catchment Management Authorities, Wannon Water and other agencies on sustainable water strategies and urban sensitive water design.
- Explore opportunities and actions to reduce the risk and impacts of flooding to coastal and low lying areas of the shire through an Integrated Flood and Drainage Assessment and Management Strategy that aligns to the Victorian Rural Drainage Strategy.
- Identifying land and assets that could support light industrial investment for small business, industrial parks, innovation and business hubs.

2. Goals and objectives for asset ownership

Council's goal for managing infrastructure assets is to meet the defined level of service in the most cost effective manner for present and future residents, visitors and users. 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.
- Linking to the LTFP which identifies required, affordable forecast costs and allocations.

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 will be met.
- Lifecycle management how to manage 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 DAMP will be monitored to ensure objectives are met.
- Asset management improvement plan how we improve asset management processes.

3. Moyne drainage assets

3.1. Summary profile

The DAMP covers the infrastructure assets that manage storm water and water run off to protect other critical infrastructure assets such as buildings, private property and roads from water damage, flooding and inundation, erosion, impacts on flora and fauna and other environmental risks. Drainage assets form an integral part of the urban infrastructure network which is provided and maintained by Council on behalf of the community, business and visitors moving through the shire.

The drainage network includes:

- Built underground drainage/storm water pits, pipes, conduits and gross pollutant traps
- Natural earth drainage systems, water catchment and retention zones
- Above ground assets including culverts, retention basins and discharge points.

3.2. Hierarchy

Council does not currently implement a hierarchy for drainage assets. As part of the improvement plan, a drainage hierarchy will be developed based on:

- Risk assessments including available flood mapping
- Future land use changes and development
- Emergency impacts and responses
- Critical drainage assets, drainage network and inter-reliance
- Corporate, community and agency knowledge.

3.3. Drainage asset valuation

The best available valuation estimates for Moyne drainage assets are shown below.

Replacement cost (current / gross)	\$17,979,339
Depreciable amount	\$17,653,844
Depreciated replacement cost	\$11,064,104
Annual depreciation	\$1,377,357

New or gifted drainage assets will add to operations and maintenance needs in the longer term. These assets will require additional funds for maintenance and future renewal, as well as add to depreciation forecasts.

3.4. Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the DAMP, namely:

- 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).

3.5. Key stakeholders

There are a number of stakeholders and communities involved in the planning, management and investment in Moyne's drainage assets. These include:

- Councillors, Council officers and contractors
- Catchment management authorities and water authorities
- Emergency services and agencies
- Land holders and property owners
- Land use and development planners
- Community committees of management
- Other State Government departments and agencies
- Infrastructure developers including residential, commercial and industrial
- Residents and visitors
- Utility providers.

3.6. Considerations and influences

People's concerns and expectations for adequate drainage and storm water functionality are increasing as climate change impacts on the capacity of the current drainage network with associated risk of property flooding and inundation.

Changing weather patterns are placing a greater demand on the drainage network and infrastructure as extreme and unpredictable rain events are increasing, and at times, older drainage systems are unable to cope with water volumes. Understanding weather event trends is important for better infrastructure design and construction to accommodate storm water diversion, particularly from residential areas, and reduce the likelihood of short or longer-term household and business activity displacement

New residential developments place an increased pressure on the existing drainage infrastructure, as new sub-divisions connect new flows into the existing network through systems built at differing times and differing standards. Planning rules and policy have a critical influence on storm water management to reduce the risk of flooding and placing additional loads on a system not designed for these volumes.

Key issues for current and future drainage management and planning are summarised below:

- New developments are adding pressure to the current drainage systems, many of which were built decades ago and their condition and functionality is generally unknown across parts of the network. Drainage functionality – or lack thereof – sometimes only becomes apparent during a flood event. Partnerships with the SES and other emergency services and utilisation of flood mapping would add great value to drainage planning and investment modelling.
- Consideration of planning approvals in low lying land areas that are already experiencing flooding and inundation, and where future sea rises and flooding are forecast to impact, will be critical to mapping future drainage infrastructure.
- Storm water management and maintenance programs need to be funded to appropriate levels given the criticality of this infrastructure and the impacts from its failure.
- A key gap in corporate knowledge and capacity to plan for and invest in effective drainage is impeded by a lack of condition assessments of the current network and the cost to undertake such assessments for this infrastructure class. Therefore, condition data is limited and a full condition assessment and camera visualisation of the drainage network should be developed and mapped on the GIS system.
- Condition auditing will allow for improved proactive maintenance and monitoring of drainage systems, along with the mapping of known problem areas. This will assist with emergency event preparation and management.

- Community service level expectations, particularly for drainage and other asset service levels, can vary between rural and urban residents and longer term and new residents. New residents may have relocated from urban to rural localities where road, drainage and other services are not comparable to metro or more developed urban towns. Council has limited resources and funding capacity to provide a uniform drainage service level across the shire.
- Developing adaptation responses for assets and infrastructure to address forecast impacts from climate change will be necessary to build asset resilience. The resilience of our critical infrastructure is vital to the ongoing provision of services to customers.
- Council and the community need to understand the capacity to "withstand a given level of stress or demand", and to respond to possible disruptions to ensure continuity of service. We do not currently measure our resilience in service delivery. This will be included in future iterations of the DAMP.
- Internal and external development planners will need to consider water management options, climatic changes and sea level rise for new developments, and provide Council with digital as constructed drawings once works are completed. This should also include consultation with key referral authorities.

4. Drainage provisions and service levels

An important part of asset management is to connect service levels, demand and risk and focus investment where improvement to asset condition will address these elements.

4.1. Condition

Drainage condition is currently monitored through as needed targeted inspections, responses to customer service requests and review of drainage performance during and following a flood event. Condition is not currently monitored and condition assessments are generally only undertaken on drainage assets that are evidently not working effectively. Condition is measured using a 1 - 5 grading system as detailed in Table 1.

Condition grading	Description	Data confidence	Description		
1	Very good. Only planned	А	Highly reliable. Sound data,		
	maintenance required		records and / or audits		
	Good. Minor		Reliable. Sound data, records		
2	maintenance required plus	В	and / or audits with some		
	planned maintenance		shortcomings or gaps.		
	Fair. Significant		Uncertain. Data incomplete or		
2	maintenance required with	С	limited in scale		
3	some areas of renewal				
	and upgrades				
	Poor. Significant		Very uncertain. Unconfirmed		
4	maintenance and renewal	D	data based on verbal reporting		
	and / or upgrades required		or estimates or out of date data.		
	Very poor. Physically				
	unsound or no longer fit				
5	for purpose. Beyond				
	reasonable or achievable				
	rehabilitation.				
The current co	ndition grade averaged over	all drainage asset	s across the shire has been		
assessed as "Poor" as shown in Table 2.					

Table 1 - Asset condition and data grading

Table 2 - Drainage condition profile

Asset class	Condition grade	Data confiden	ce Comments
Drainage	4 - Poor	D – Very uncertain	Reactive inspections occur based on impacts from weather events. Limited data available on condition of underground drainage assets.

5. Levels of service for drainage

Service levels are defined in three ways: **customer values, customer levels of service and technical levels of service**. Council has completed an assessment of the levels of service against these three themes to inform future planning, management and funding for drainage infrastructure assets across the shire.

The DAMP will facilitate future consultation on service levels. Future revisions of DAMP will incorporate customer consultation on service levels and costs of providing the service. This will assist Council and stakeholders to assess the level of service required, service demand, risks and consequences. Decisions for investment will consider Council's and community's capacity and willingness to pay for diverse services across this complex asset portfolio.

5.1. Customer values

Customer values, shown in Table 7 in Appendix A – Service levels, indicate:

- The aspects of the service which are important to the community
- Whether there is value in what is currently provided
- The likely trend over time based on the current budget provision.

5.1.1. Customer values summary

- Drainage infrastructure is functional during rain events
- New or renewed drainage infrastructure to be constructed to cope with climate change
- Develop greater understanding of the current drainage networks and plan for future development and investment in the network.

5.2. Customer levels of service

Setting levels of service considers the following three asset features:

- 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?

5.2.1. Customer levels of service summary

- Appropriate response support is provided during significant rain events.
- Proactive cleaning program of underground system is factored into ongoing maintenance programs and scheduling.
- Condition data and GIS to be expanded to reflect drainage system in its current form.
- Relining critical pipes is undertaken when sufficient funds are allocated.

• New or renewed infrastructure designed and built to Infrastructure Design Manual (IDM) standards produced by the Local Government Infrastructure Design Association.

5.3. Technical levels of service

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. increased pipe capacity, extra drainage pits) or a new service that did not exist previously (e.g. new drainage systems for a residential development, gross pollutant trap installation, new retention basins).
- **Operation** the regular activities to provide services (e.g. cleaning pits, obstruction removal, and vegetation removal, 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 its service for its planned life (e.g. drainage network cleaning, repairs to damaged pit lids or end walls, repairs to pipes from tree roots).
- **Renewal** the activities that return the service capability of an asset up to that which it had originally provided (e.g. damaged pipe replacement, replacement of earth or clay pipes with cement pipes to the same capacity standard).

Service and asset managers plan, implement and control technical service levels to influence the service outcomes. 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 trends and external influences such as climate, weather events and customer priorities will impact service levels over time.

5.3.1. Technical service levels summary

- Built culverts and drainage infrastructure are added to road renewal works based on survey and customer requests.
- New drainage works consider and respond to climate change.
- Planning integrated drainage to manage storm water in new subdivisions.
- Whole-of-life cost analysis to be conducted prior to any Council acquisition of an asset, or provided by an asset grantor to Council to review prior to works or asset purchase occurs.
- Matrix and criteria to be developed for improved condition and risk reporting.
- Improved enforcement of water management for storm water systems.

- Fully integrated maintenance program based on inspection and condition data inclusive of officer observations and customer requests.
- Ensure kerb and channel sweeping program is sufficient for meeting the needs of the drainage system.
- Replacement and renewal to be in line with the IDM.

More details on the customer and technical levels of service are presented in Appendix A – Service levels.

5.4. Service levels budget commentary

Table 3 shows the activities expected to be provided under the current 10-year Planned Budget allocation, and the forecast activity requirements being recommended in the DAMP.

Current budget allocations	Recommended budget considerations
Acquisition	
No acquisition funding has been allocated in the current annual budget or the LTFP.	Future acquisition funding should be based on strategic priorities through a project and investment pipeline recommended in Asset Plan 2022.
	Implement a program of drainage condition audits to better inform the LTFP.
	Condition data and GIS to be improved to assist in predicting a capital works budget.
Officer-based costs are included in annual	As per current allocations
business unit staffing budget.	
Operation	
Allocation for minor works included in annual budget.	Whole-of-life costs and maintenance to be included in asset planning and ongoing operational budgets.
Minor allocation for Council contribution for sport and recreation drainage maintenance included in	Inclusion of strategic planning proposals for inclusion in annual budget and LTFP.
current annual budget.	Funds to increase in accordance with condition data and 10-year financial plan.
Community Assistance Fund budget available to community groups for minor renewal and upgrades.	Review of Community Assistance Fund allocation for minor works based on value of works proposed. Link these works to future condition data as an evidence base for funding.

Table 3 - Service levels budget summary

Current budget allocations

Recommended budget considerations

Maintenance	
Sufficient allocation for the current level of service	Maintenance allocations should be reviewed based
but based on limited condition data.	and improved data information.
Renewal	
Budget allocations are in line with current level of services.	Condition assessments to inform and develop a 10- year capital program to determine works and inform future budgets.
Rationalisation	
Budget in line with overall construction program with no forecasts for drainage rationalisation.	10-year drainage program to inform annual and LTFP budgets.

6. Lifecycle management plan

6.1. Financial management

6.1.1. Forecast financial summary

The DAMP 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.

Table 4 - Summary c	of financial asset	forecasts over the	e 10-year	planning	period
	i illianolai asset		, io year	piuning	period

Cost item	Current budget	Estimated forecast	Financial gap
Total asset spend	\$6.95m	\$12.95m	\$6.00m
Operations, maintenance and renewal	\$6.95m	\$12.95m	\$6.00m
Acquisition	\$0m	\$0m	\$0m

DAMP assets have an estimated replacement value of approximately \$18 million.

The forecast operations, maintenance and renewal costs over the 10-year planning period is \$1,295,000 on average per year. *Note, these calculations exclude acquisition costs for which there is no current data.* The current actual budget for operations, maintenance and renewal is \$695,000 on average per year, giving a 10-year funding shortfall of \$600,000 per year. This indicates that 54% of the forecast costs needed to provide the services documented in the DAMP have been allowed for in the current LTFP.

The anticipated planned budget for all drainage investment leaves a shortfall of \$600,000 on average per year of the forecast lifecycle costs required to provide services in the DAMP compared with the planned budget currently included in the LTFP. This figure does not account for newly constructed or gifted drainage assets.

The current infrastructure reality is that only what is funded in the long-term financial plan can be provided. Informed decision making depends on the DAMP providing an understanding of the consequences of planned budgets versus forecast requirements on the service levels desired and strategies to address the renewal and investment gap.

6.1.2. Funding ratios

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 53.67% of the funds required for the optimal renewal of assets.

Year	Operation	Maintenance	Renewal
2022	\$0.050	\$0.135	\$1.010
2023	\$0.050	\$0.135	\$1.010
2024	\$0.050	\$0.135	\$1.010
2025	\$0.050	\$0.135	\$1.010
2026	\$0.050	\$0.135	\$1.010
2027	\$0.050	\$0.135	\$1.010
2028	\$0.050	\$0.135	\$1.010
2029	\$0.050	\$0.135	\$1.010
2030	\$0.050	\$0.135	\$1.010
2031	\$0.050	\$0.135	\$1.010
TOTAL	\$1.500	\$1.350	\$10.100

Table 5 - Forecast costs (outlays) for the LTFP (\$Ms)



Figure 2 - Forecast lifecycle costs and planned budgets

The key investments that contribute to the lifecycle costs shown on the previous page include:

- Very high replacement costs for the shire's drainage assets which in some cases may have reached end of life or do not have the capacity to adequately manage storm water volumes.
- Increasing demand for drainage assets from population growth, including residential development.
- Increased demand for drainage to service development of playgrounds, skate parks, tracks, trails and footpaths and improvements to the road network across the shire.
- Increased environmental and water management compliance, insurance and risk management.
- Consideration of climate adaptation and weather event resilience in the design and installation for drainage assets.
- Supply chain and labour shortage leading to price rises and general costs for engineering and construction contracts.
- Routine maintenance activities including pit lid replacement, clearing discharge points, unblocking pipes and repair of displaced pipes.
- Cleaning of critical pits and litter traps on a programmed basis and re-lining of existing drainage pipes.

Potential investments that have been identified for key drainage assets include but are not limited to:

- Campbell Street drainage Port Fairy connecting with Southcombe Park
- Bourne Avenue and Gardens Reserve drainage Port Fairy
- Albert Street drainage Port Fairy
- General underground drainage network audits, renewal and upgrades for Port Fairy
- Development precincts and at risk zones for drainage renewal and upgrades
- Under road network culvert renewal and upgrades shire-wide.

Given these trends and demands, we currently do not allocate enough budget to sustain current services at the proposed standard or to provide potential new services, facilities and assets.

6.2. Demand management

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

- Council and community priorities as detailed in My Moyne, My Future 2040 and the 2021-2025 Council Plan.
- Demand planning and management based on population and demographic growth and change both across the shire and within individual communities and localities; this also includes seasonal population patterns.
- Population growth will mostly occur through green-field development, resulting in a greater number of gifted assets to Council. Greenfield development will also lead to both increased storm water volumes and reductions in natural areas that currently accommodate run off and reduce volume flows.
- Flood mapping outcomes and known impact areas recorded from customer requests that need to be considered during planning and future extension of the drainage network.
- Demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet changing weather patterns and rising sea levels. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.
- Council, community and stakeholders will need to plan and manage assets that support the needs and services of residents in areas of greatest need and growth. Asset investment will need to be based on criticality, usage, safety and future demand.

Drainage assets will need to be developed that are adaptable to climate change, increased population, and expansion of housing developments and industrial zones.

Planners will need to consider climate impacts when approving new development and ensure water retention is considered and applied to appropriate standards.

Consideration will need to be given to:

- Council's overall asset portfolio, including critical infrastructure needs of communities and the region,
- Replacement of obsolete pipe material such as clay and asbestos with more cost effective and appropriate materials such as poly and concrete pipes.
- Funding and budget policies.
- Flood mapping and SES collaboration on flood mitigation and response strategies.
- Development of new assets to meet future demand and climate change events.

- Drainage asset innovations to assist in water diversion or better environmental outcomes.
- Storm water management in new developments and design requirements to consider climate change events.

The historical context of some drainage assets will need to be considered under Council asset policy setting.

Asset design, renewal and development will need to incorporate features, equipment and materials that reduce the impact of climate and weather.

6.3. Risk management

To manage risks in the medium term, budget levels will need to increase. The main risk consequences are:

- Drainage assets not funded to standard / not meeting user requirements.
- Access to specialised skills to maintain large or complex drainage assets.
- Ageing infrastructure and assets leading to high impacts, risks and higher maintenance, renewal or upgrade costs.

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

- Inspecting drainage assets for suitability and ensuring required standards are met and preventative maintenance is identified for assets at risk of failure and where capacity and failure risk have significant impacts on community and asset safety.
- Monitoring utilisation and future trends so that investment requirements are anticipated.
- Replacing infrastructure at an optimised time to give lowest lifecycle cost.

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.

An assessment of risks 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 includes 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 unacceptable.

6.4. Critical assets

Critical assets are defined as those which have a high consequence of failure causing significant loss, service interruption, and inconvenience to users.

Critical assets have been identified and, along with their typical failure mode and impact on service delivery, are detailed in Table 15 in Appendix B – Drainage risk assessment. Failure modes may include physical failure, collapse or essential service interruption.

6.4.1. Summary of critical asset risks

- Maintenance costs increasing due to inadequate renewal program
- Drainage assets not to standard / not meeting user requirements
- Climate change and significant weather events leading to storm and flood damage
- Drainage facilities not funded to meet user requirements
- Regulatory non-compliance.

Future identification of critical assets and failure modes will enable Moyne Shire Council to ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.5. Maintenance and operations

Operations include regular activities to provide services. Examples of typical operational activities include provision of equipment and plant, contractor services and work programming.

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 drainage repairs, equipment replacement and repairs and vegetation removal.

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, forecast operation and maintenance costs would be expected to decrease.

Figure 3 shows the forecast operations and maintenance costs relative to proposed operations and maintenance planned budget. The current forecast is a flat-line allocation across the LTFP and does not reflect inflation, future growth, demands and trends for Moyne drainage renewal, upgrades and acquisition.



Figure 3 – Drainage operations and maintenance summary

6.6. Renewal management

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. Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (structural repairs to key drainage assets such as gross pollutant traps and drainage pits); or
- Ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a drainage pipe, end wall or kerb and channel flow).

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 the broader community would be significant
- Have higher than expected operational or maintenance costs
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.

The estimated renewal forecasts for drainage that includes renewal, upgrades and / or acquisition of high cost assets are shown in Figure 4 and Table 6, and as summarised in section 6.1.1.



Figure 4 – Future drainage estimated renewal forecasts

Year	Renewal Forecast	Renewal Budget
2022	\$1.010	\$0.560
2023	\$1.010	\$0.560
2024	\$1.010	\$0.560
2025	\$1.010	\$0.560
2026	\$1.010	\$0.560
2027	\$1.010	\$0.560
2028	\$1.010	\$0.560
2029	\$1.010	\$0.560
2030	\$1.010	\$0.560
2031	\$1.010	\$0.560
Total	\$10.100	\$5.600

Table 6 - Renewal forecast summary (\$M)

The forecast estimates show a renewal funding gap of \$4.5m over the 10-year period.

Renewal works may be identified from:

- Programmed Condition Surveys or Defect Inspections
- Events or customer requests which highlight a capacity issue
- Council becoming aware of a need through a decrease in the performance of an asset

Renewal ranking takes into account where:

- Failure has occurred and renewal is the most efficient life cycle cost alternative.
- Asset failure of key system component is imminent namely:
 - Impact of any flooding
 - When the failure is most likely to occur.
- Timing of any road reconstruction or development works.

Renewal criteria will be reviewed as part of establishing a drainage hierarchy and will consider criticality, impact, risk and demand.

6.7. Expansion, upgrade, acquisition and new asset management

These actions represent a new asset 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. Assets may also be donated to Council through gifts, development contributions and relinquishing of an asset by another asset owner to Council.

Council currently does not have any allocation for drainage asset acquisition over the LTFP. This includes assets acquired through construction, growth or gifted through construction projects. There is, therefore, a clear need to better forecast drainage investment through integration of drainage planning for new construction, renewal and upgrade projects and from the outcomes of drainage condition audits.

6.7.1. Selection criteria

Council does not currently have expansion, upgrade or acquisition criteria for drainage assets. These will be developed as part of establishing a drainage hierarchy and associated assessment of renewal and upgrade criteria based on criticality, risk and demand.

6.8. Rationalisation management

Rationalisation includes any activity associated with the consolidation, decommissioning and / or disposal including demolition or relocation.

Assets identified for possible decommissioning and disposal will be identified when further condition data is obtained and a thorough assessment can be undertaken of the drainage network considering current and future requirements for this critical asset class.

7. Financial strategy

The critical basis for the DAMP funding strategy is to manage and reduce the overall renewal, investment and resourcing gaps identified in section 6. There are a number of mechanisms that Council can apply to support sustainable financial planning and asset funding.

The following strategies will be implemented to support the DAMP.

- Allocate funds to support community resilience programs for flooding events in conjunction with the SES, other emergency services, land owners and managers and local community.
- Identify and understand renewal demand by investing in proactive maintenance and invest in a rolling program of asset condition audits to better understand existing issues.
- Identify key projects, design and complete investigations for shovel ready projects to enable sourcing of funding streams from state or federal bodies.
- Given the scale and costs of some DAMP renewal projects, opportunities to use Council financial reserves or to borrow funds to leverage funding opportunities or invest in strategically important community assets will be considered. Projects will need to identify cost:benefits to the organisation and the community.
- Developers to extend drainage projects beyond their boundaries to upgrade downstream assets to cope with expansion of drainage assets and increased demand.

8. Improvement plan

It is important for Council to identify areas of the DAMP and planning process that require future improvements to ensure effective asset management, informed decision making and continuous improvement for asset management.

The next steps summarise DAMP asset management practices improvements in addition to those contained in Asset Plan 2022.

8.1. Strategic governance

- Advocate to State and Federal governments for climate change adaptation funding support to address the high risk of storm and flood impacts to property, assets and residents.
- Develop a drainage hierarchy framework and associated link renewal requirements with condition audits to create a more accurate LTFP forecast for drainage assets.
- Encourage and promote the use of rainwater tanks and the reduction of non-permeable surface areas to reduce storm water volumes discharged into the network.

8.2. Asset management

- Implement a program of condition assessment and data capture including mapping, capacity and areas for critical renewal or upgrades.
- Implement a program of CCTV inspections of high-risk areas of the network.
- Complete accurate GIS-based mapping of existing assets to develop an understanding of the drainage network and future design planning for network additions, changes and demand impact modelling.
- Maintain a register of passive irrigation assets to enable Council to monitor their performance, as well as planning for maintenance and renewal.

8.3. Risk

- Partner with the SES, other emergency agencies and land and property owners in order to design and build asset and safety resilience, and mitigate climate change and weather event impacts.
- Undertake a program of proactive maintenance inspections in known high storm and flood impact zones.

8.4. Business process and systems

• Investigate new innovations in storm water management, environmental trends, impact modelling and data and information capture on drainage assets and demand.

8.5. Capacity building

- Work with developers and land use planners across the life of development planning to ensure that drainage systems and management are fully costed, include innovation features, map impacts beyond property boundaries and provide whole-of-life costs.
- Identify priority areas for environmental restoration of waterways or storm water management projects that deliver environmental outcomes and benefits, including habitats and biodiversity.
- Establish data agreements with water authorities to enable more timely exchange of data.

9. Monitoring and review

The DAMP 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. Monitoring and review process will include:

- Establishing an internal Working Group comprising of key asset managers and staff to undertake integrated monitoring and reporting on Asset Plan 2022 and the DAMP.
- Provision of an annual State of the Assets Report for Councillors, the organisation and community including reference to the DAMP.
- Reviewing achievement of DAMP service level targets or barriers to achieving targets.

Reviews will 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 LTFP, or will be incorporated into the LTFP once completed.

Whilst the DAMP has a 10-year horizon, it has a maximum life of 4 years and is due for complete revision and updating by October following each Council election.

9.1. Performance measures

The effectiveness of the DAMP can be measured in the following ways:

- The degree to which the required forecast costs identified in the DAMP 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 presented in the DAMP.
- 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.

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11. Appendix A – Service levels

Table 7 - Customer levels of service - Customer values

Customer values	Satisfaction measure	Current feedback	Planned budget trend
Places to unwind and have social interaction with family and community.	Condition of local streets and footpaths Community and cultural activities Number of visits to aquatic facilities per head of population.	Community Satisfaction Survey benchmark for drainage facilities and community cultural services 2.8 ha of drainage / 1000 head of population.	Linear expenditure based on Council adopted budget. Increased investment required in core facilities particularly in areas of population growth, or where there are priority provision gaps.
Are close to home, safe and appeal to all ages.	Town planning policy decisions Appearance of public places.	Community Satisfaction Survey benchmark for drainage facilities and community cultural services.	Linear expenditure based on Council adopted budget. New installations and focus on drainage will require consideration and provision of maintenance resourcing as part of development plans and delivery.
Places to exercise and are dog walking friendly.	Drainage facilities	Community Satisfaction Survey benchmark for drainage facilities and community cultural services.	Increased community expectation for installation of outdoor fitness equipment as part of drainage and drainage precincts not reflected in annual budget or LTFP.
Interact with the natural environment, views to the ocean and rivers, and clean and quiet beaches.	Environmental sustainability Appearance of public places	Community Satisfaction Survey benchmark for drainage facilities and community cultural services.	Investment and management of key coastal, marine and water- based assets will form part of Asset Management Plans which will inform LTFP.

Level of service	Performance measure	Current performance	Trend based on planned budget
Drainage areas, facilities and amenities are designed and effectively maintained. High level of community importance put on the provision of quality drainage.	Service requests Community satisfaction survey benchmarks Reporting on strategic plan priorities and deliverables Condition audits, seasonal pool and drainage reserve inspections.	Service request reporting unknown. Drainage facilities - 69 – like shire benchmark 73 Some reporting on some strategic plans occurs Inspections occur but data not ranked or included in asset management systems.	More investment will be needed in precinct, drainage and facility development and investment planning to be funding and grant competitive. Greater requirements for investment in drainage, facilities and amenities that align to DDA, gender and age legislation and design principles.
There are a number of disused and ageing drainage, sport and drainage assets that may be subject to rationalisation under the directions and principles of the Drainage Strategy.	Aligning to Drainage Strategy standards Alignment to Drainage Strategy supply and demand, and acquisition and rationalisation criteria.	Limited reporting and analytics currently undertaken.	Drainage, sport and drainage renewal and upgrades are fundamentally associated with securing external grant allocations to specific projects. Additional resourcing and investment will be required and likelihood of greater community and external contributions. Rationalisation may lead to further investment being made in some district level

precincts and drainage.

Table 8 - Customer levels of service - Condition

Level of service	Performance measure	Current performance	Trend based on planned budget
Facilities will be fit for purpose.	Service requests Community satisfaction survey benchmarks Condition audits, seasonal pool and drainage reserve inspections.	Service request reporting unknown. Drainage facilities - 69 – like shire benchmark 73 Inspections occur but data not ranked or included in asset management systems.	Greater requirements for investment in drainage, facilities and amenities that align to DDA, gender and age legislation and design principles.
Provide well- linked and accessible drainage precincts.	Community satisfaction survey benchmarks	Condition of local streets and footpaths – 76 – like shire benchmark – 79.	Increased community expectation for investment in linkages and connections. Need for investment in shire- wide renewal of connecting infrastructure. Limited developer contributions.
Facilities offer diversity of choice to reflect community demographics and need.	Assessment of projects against DDA, gender, inclusion and accessibility regulations and design guidelines Community satisfaction survey benchmarks.	Not consistently integrated into project planning, design briefs and reporting. Drainage facilities - 69 – like shire benchmark 73.	Greater requirements for investment in drainage, facilities and amenities that align to DDA, gender and age legislation and design principles. Lack of understanding of future rationalisation priorities and investment needed in co-share, multi-use / user facilities.

Table 9 - Customer levels of service - Function

Level of service	Performance measure	Current performance	Trend based on planned budget
Whilst the shire has an oversupply of drainage per capita, Council will apply drainage standards to investment, development and embellishments for drainage.	Service requests Community satisfaction survey benchmarks.	Service request reporting unknown Drainage facilities - 69 – like shire benchmark - 73 Condition of local streets and footpaths – 76 – like shire benchmark – 79	Greater requirements for investment in drainage, facilities and amenities that align to DDA, gender and age legislation and design principles.
Allocation of resources for the provision of drainage and drainage will be strategic, effective and equitable, aligning with Council and community capacity to deliver.	Service requests Community satisfaction survey benchmarks Reporting on strategic plan priorities and deliverables.	Service request reporting unknown. Drainage facilities - 69 – like shire benchmark 73 Some reporting on some strategic plans occurs.	Greater requirements for investment in higher usage drainage, facilities and amenities that align to DDA, gender and age legislation and design principles. Lack of understanding of future rationalisation priorities and investment needed in co-share, multi-use / user facilities.
There are variances in usage patterns for drainage and drainage assets across the shire.	Usage analysis for example: % of usage within the total hours of potential use, i.e. playground is available for use 7 days a week 8 hours a day (56hrs). Renewal and maintenance requests Demand analysis and forecasting.	Evidence to indicate some facilities are under-utilised.	Increased focus on multi-use facilities to meet needs of changing customer base. Development of drainage and drainage assets that require lower capital investment and ongoing maintenance.

Table 10 - Customer levels of service - Capacity

Purpose of activity	Activity measure	Current performance	Recommended performance
Acquisition may be considered where there is evidenced community need. Acquisition decisions will be based on Drainage Strategy acquisition and decision-making criteria, and standards.	Demand analysis for any proposed land or asset acquisition or development for drainage, sport and drainage purposes.	No current budget capacity for acquisitions. Strategic plan priorities and key directions have some influence on future acquisition activities.	No current or likely acquisitions are forecast. Increased focus on evidence based decision making. Whole-of-life cost analysis to be conducted prior to any acquisition of an asset, including gifted assets.
That facilities and amenities are fit for purpose.	Service requests Community satisfaction survey benchmarks Condition audits, seasonal pool and drainage reserve inspections.	Service request reporting unknown Drainage facilities - 69 – like shire benchmark 73 Documented inspections occur but data not ranked or included in asset management systems.	Establishment of condition rankings. Inclusion of data into asset management and reporting systems. Provision of annual State of the Asset Report as part of Council's annual budget setting.
Appropriate governance, management and maintenance process are in place.	Up to date licence agreements or equivalent are in place for asset Committees of Management. Council representation at Committee of Management	A program of licence renewal is underway. Most licences are out-of- date / expired.	All licence agreements for Committees of Management are up- to-date.

Table 11 - Technical levels of service - Acquisition

meetings.

Purpose of activity	Activity measure	Current performance	Recommended performance
Provision of safe, accessible and presentable drainage or multi- uses and users.	Service requests Community satisfaction survey benchmarks Condition audits, seasonal pool and drainage reserve inspections.	Service request reporting unknown Drainage facilities - 69 – like shire benchmark 73 Documented inspections occur but data not ranked or included in asset management systems.	Matrix and criteria to be developed for improved condition and risk reporting. Risk and maintenance reporting over whole of life. Service requests response / completion rates are reported.
Sport and drainage facilities and assets are maintained to the standard needed for their purpose and function.	Service requests Community satisfaction survey benchmarks Condition audits, seasonal pool and drainage reserve inspections.	Service request reporting unknown Drainage facilities - 69 – like shire benchmark 73 Documented inspections occur but data not ranked or included in asset management systems.	Matrix and criteria to be developed for improved condition and risk reporting. Risk and maintenance reporting over whole of life. Service requests response / completion rates are reported. Forecast / LTFP of budget allocations to support funding and grant applications.
Drainage and drainage assets are available for use for maximum times per year.	Service requests Community satisfaction survey benchmarks.	Service request reporting unknown Drainage facilities - 69 – like shire benchmark 73	Strategic development, renewal and upgrade plans for key precincts and drainage, sport and drainage assets to be provided for consideration in annual budget and LTFP.

Table 12 - Technical levels of service – Operation

Purpose of activity	Activity measure	Current performance	Recommended performance
Renewal may be considered where there is evidenced community need. Renewal decisions will be based on Drainage Strategy acquisition and decision-making criteria, and standards.	Demand analysis for any proposed land or asset renewal or development for drainage, sport and drainage purposes.	Very limited current budget capacity for renewal projects. Strategic plan priorities and key directions have some influence on future renewal activities. Renewal generally subject to successful grant or funding outcomes.	Increased focus on evidence based decision making for renewal projects. Whole-of-life cost analysis to be conducted prior to any renewal of an asset, including gifted assets. Strategic development, renewal and upgrade plans for key precincts and drainage, sport and drainage assets to be provided for consideration in annual budget and LTFP.
Renewal will occur where risk assessments indicate high level usage and / or where high user risks and impacts are identified.	Risk event and audit reporting. Compliance for public drainage, sport and drainage amenity development and equipment purchasing and installation. Condition audits, seasonal pool and drainage reserve inspections.	Risk event and audit reporting. Use of approved suppliers and contractors through the MAV supplier list. Supplier provided and installed equipment is inspected on completion for compliance and safety. Larger installations and facility / building renewals include building permits, building surveyor inspections and Certificate of Occupancy approval	Continue with current performance processes and measures. Matrix and criteria to be developed for improved condition and risk reporting. Risk and maintenance reporting over whole of asset life.

Table 13 - Technical levels of service – Renewal

Purpose of activity	Activity measure	Current performance		Recommended performance
Rationalisation of drainage, sport or drainage land or assets can occur when it is surplus to requirements, no longer meets standards of service or when sale funds can be put towards development of a catchment facility, or evidenced need for a replacement use/user, or new facility at the disposal location.	Utilisation and activity type Condition, risk and usage audits Cost:Benefit analysis Demand:Need analysis	No current formal approach or reportin potential or forecast asset rationalisation Minor rationalisation projects identified occasionally in annu budget. Not driven by utilisa data. Political influences of affect decision making	ng on i. ual tion can ing.	Audit of underutilised or unused drainage/ sport and drainage assets to inform a rationalisation program. Hand back of underutilised or unused Crown land and drainage assets to the Crown.
Part funds from asset rationalisation could be diverted to drainage areas and assets that provide high benefit to communities.	Demand analysis for any proposed land or asset rationalisation Cost:Benefit analysis Demand:Need analysis	Ad-hoc approach Not driven by utilisation data Political influences can affect decision making.	Strategic development, renewal and upgrades plans for key precincts and drainage, sport and drainage assets to be provided for consideration in annual budget and LTFP. Greater requirements for investment in higher usage drainage, facilities and amenities that align to DDA, gender and age legislation and design principles.	
Disposal decisions will be based on Drainage Strategy rationalisation and decision-making criteria, and standards.	Drainage Strategy decision-making framework Drainage Strategy standards of service analysis Drainage Strategy supply and demand framework.	No current formal approach, analysis or reporting on potential or forecast asset rationalisation.	Audit of underutilised or unused drainage/ sport and drainage assets to inform a rationalisation program.	

Table 14 - Technical levels of service – Rationalisation

12. Appendix B – Drainage risk assessment

Risk	Timing	Possible cause	Controls	Risk treatment
Maintenance costs increasing due to inadequate renewal program	Anytime in the future	Underfunding Inadequate information	Reactive maintenance works undertaken when identified	Continue to improve data. Maintenance is managed appropriately at an operational level. Future planning improvements can be made by documented service level risks and utilisation of these in establishing future maintenance priorities.
Drainage assets not to standard/not meeting user requirements	Anytime in the future	Substandard/obsolete assets. Insufficient maintenance	Responses to flooding events. Maintenance works	Monitor trends so that requirements and impacts can be more readily anticipated.
Storm and flood damage	Anytime now	Extreme weather events	Natural disaster funding	Inspect drainage assets for suitability against required standards.
Public health/environmental issues	Anytime now	Significant impact on environmental compliance	Inspections	Inspect drainage assets for suitability against required standards.
Regulatory non- compliance	Anytime now	Failure to adhere to legislation	Access to professional expertise	Ensure staff and contractors are up-to- date on regulatory requirements .
EPA non- compliance	Anytime now	Failure to meet EPA requirements	Staff training, legal advice, policies and procedures	Ensure staff are aware of legislative requirements and adhere to them through staff training.
Lack of resources	Anytime now	Staff loss	Workforce plan	Identify gaps and risks in workforce plan

Table 15 - Risk assessment summary



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