

GLAMORGAN SPRING BAY COUNCIL



ASSET MANAGEMENT PLAN HYDRAULIC INFRASTRUCTURE

Adopted: 28/02/2023



Document Control	Asset Management Plan – Hydrauliac Infrastructure
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Document ID :

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	January 2021	Adopted	VB	GI	GI
2	January 2023	Swanwick sewerage system included, PPRWS assets removed	DWI	GM/DCC	Council

This Asset Management Plan is a supporting document used to inform Council’s overarching Strategic Asset Management Plan.

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 The Institute of Public Works Engineering Australasia

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

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

1.2 Asset Description

This plan covers all Council owned or maintained hydraulic infrastructure assets. This update incorporates the Swanwick wastewater treatment plant and reticulation infrastructure. Additionally, the plan has removed the PPRWS system from the plan. This is done in recognition that the PPRWS is funded under a contractual agreement which does not impact the standard revenue mechanisms of council and stands alone financially for operations and asset renewal considerations.

The hydraulic infrastructure network comprises:

Asset Category	Number of Assets/Length	Replacement Value
Stormwater pipes (including culverts where recorded)	49.155 km	\$12,997,553
Stormwater pits (manholes, side entry pits, grated pits, gross pollutant traps etc.)	1876	\$4,262,316
Pump Stations	1	\$25,000
Stormwater detention and infiltration basins	2	\$30,000
Swanwick Sewerage System	1	\$656,000
TOTAL	-	\$17,917,671

The previous plan had only 65% of the now known pipe network and 41% of the now identified pits. The Swanwick Sewerage System has been recognised in this plan as a result of Council assuming management of the system.

The above hydraulic infrastructure assets have significant total renewal value estimated at **\$17,917,671**.

1.3 Levels of Service

The allocation in the planned budget is insufficient to continue providing existing services at current levels over the planning period. This is a result of increased and more dense development and the impact of this on council's systems and the changing rainfall patterns which exacerbate the existing system deficiencies.

The main service consequences of the Planned Budget are:

- The existing level of funding falls short by \$104,938 per year to address renewal of existing infrastructure.
- There is an identified list of projects across the municipality, in the order of \$5M in estimated value, of capital works projects that require design and construction to improve the stormwater drainage network, however they cannot be completed over the planning period with the current planned budget. This list comprises renewal and upgrade and new works. This means 80% of known stormwater drainage issues (generally lower priority issues) will remain unresolved within this 10 year planning period.
- The level of service is forecast to remain below customer expectation over the planning period. due to the identified works required to improve the level of service of the system which at present are unfunded. Additionally the increasing operations costs associated with an increasing number of assets (mostly related to sub-division or other development acquisitions) requires an increase in service requirements.

1.4 Future Demand

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

- Climate change (and associated increase in frequency of extreme weather events)
- Future development of previously vacant land

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

- Refer Council's *Urban Stormwater Management Plan*

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this Asset Management Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the Asset Management Plan may be prepared for a range of time periods, it typically informs a Long Term Financial Planning period of 10 years. Therefore, a summary output from the Asset Management Plan is the forecast of 10 year total outlays, which for hydraulic infrastructure is estimated as **\$5,148,041** or **\$514,804** on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is **\$4,098,666** or **\$409,866** on average per year as per the Long Term Financial Plan. This is **79.62%** of the cost to sustain the current level of service (which does not meet customer expectations) at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the Long Term Financial Plan can be provided. The informed decision making depends on the Asset Management Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for hydraulic infrastructure leaves a shortfall of **-\$104,938** on average per year of the forecast lifecycle costs required to provide services in the Asset Management Plan compared with the Planned Budget currently included in the Long Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

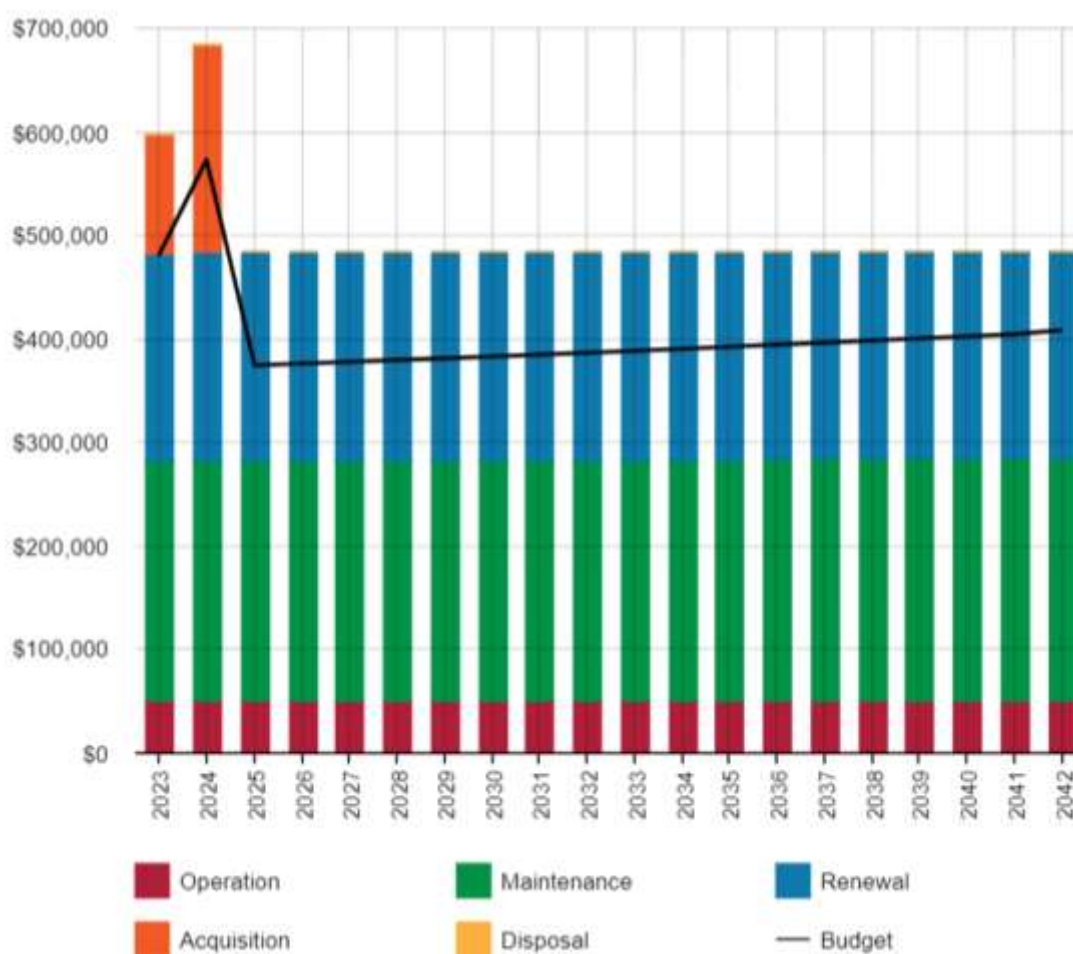


Figure values are in current dollars.

We plan to provide hydraulic infrastructure services for the following:

- Operation, maintenance, renewal and acquisition of hydraulic infrastructure assets to meet service levels set by Council in annual budgets.
- Within the next 5 years the major capital works (acquisitions or renewals >\$40,000) forecast are limited to completion of Holkham Crt Culvert upgrade and Detention Basin at Gordon St Swansea subdivision. Other major works funded within the program will be restricted to co-contribution to development works and progressed as demand requires. The majority of these works are identified within the catchment plans that have been developed to date.

1.6.2 What we cannot do

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

- Provide new infrastructure or upgrade existing infrastructure to meet planning scheme development service levels where unfunded by developers.
- Complete Urban Catchment assessments for the stormwater management plan or delivery of 80% of flood mitigation capital works, relating to stormwater drainage assets, within the next ten years.

1.6.3 Managing the Risks

Our present budget levels are insufficient to successfully manage all identified risks in the medium term.

The main risk consequences are:

- Nuisance flooding associated with high rainfall periods
- Underfunding of required stormwater drainage upgrades, sustaining a poor level of service and flooding to adjacent dwellings/properties
- Inability to respond in a timely way to property owner demands for improved levels of service

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

- Rating projects against a risk criteria for prioritisation
- Ensuring the Long Term Financial Plan is informed by the works plan derived from the *Urban Stormwater Management Plan*
- Seeking grant funding and developer contributions to assist council to fund required system upgrades

1.7 Asset Management Planning Practices

Key assumptions made in this Asset Management Plan are:

- Expenditure projections are low confidence budget type figures with a range of $\pm 40\%$
- Financial data used in the development of this plan was from the end of the 2021-22 financial year.
- It is assumed that no major acquisitions outside of those referenced in this plan are to be undertaken during the planning period without detailed lifecycle costing knowledge and allocation in planned budget to meet these costs.
- Several gross assumptions were required in the derivation of planned budget and lifecycle forecast figures. This is due to the quality of financial information currently available.
- Professional judgement has been applied in the absence of good quality data, however where applied, it has been noted for improvement in Section 8.0.
- All figures are presented in current day dollars.

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.

A combination of the asset register method and the alternate method was used to forecast the renewal lifecycle costs for this Asset Management Plan.

The estimated confidence level for and reliability of data used in this Asset Management Plan is considered to be **Medium** (refer Table 7.5.1).

1.8 Monitoring and Improvement Program

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

- Council to take on management of *MyData* asset management software
- Continue to develop detailed capital works program for upcoming years with project ranking consistent with agreed criteria. Use to inform Asset Management Plan and Long Term Financial Plan updates.

- Increase accuracy of budget breakdown to include acquisitions, maintenance, operations, renewals and disposals.
- Update Geographical Information System (GIS) to include all previously missing stormwater drainage assets (including pipes, headwalls, pits, culverts and open drains) once they have been recorded.
- Continue to develop the *Draft Urban Stormwater Management Plan*, including completion of all catchment modelling to better understand/identify deficiencies.
- Improve confidence in financial data used in Long Term Financial Plan and Asset Management Plan.
- Update forecast disposal values within Asset Management Plan for assets where upgrade works are to occur.
- Continue to develop and maintain regular inspection of asset condition, defects and develop maintenance and capital works programs for inclusion in the Asset Management Plan.
- Continually improve correlation between Long Term Financial Plan and Asset Management Plan.
- Increase confidence and maturity of Asset Management Plan.

2.0 Introduction

2.1 Background

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

The Asset Management Plan is to be read with Council's Asset Management Policy and Strategic Asset Management Plan, along with other key planning documents:

- Long Term Financial Strategy
- Long Term Financial Management Plan
- Glamorgan Spring Bay Council's 10-year Strategic Plan 2020-2029

Council is in the process of modernising its asset management practices to ensure they adhere to the *Local Government Act 1993*. Part of this process is the development of asset management plans, such as this document, and the above mentioned strategic documents.

This Asset Management Plan covers all Council owned hydraulic infrastructure assets. For a detailed summary of the assets covered, refer to Table 5.1.1 in Section 5 and the lists below.

The hydraulic infrastructure network comprises:

Stormwater assets:

- Pipes
- Culverts
- Pump Station
- Pits (manholes, side entry pits, grated pits)
- Detention and infiltration basins
- Gross pollutant traps

Sewerage assets:

- Swanwick Sewerage System

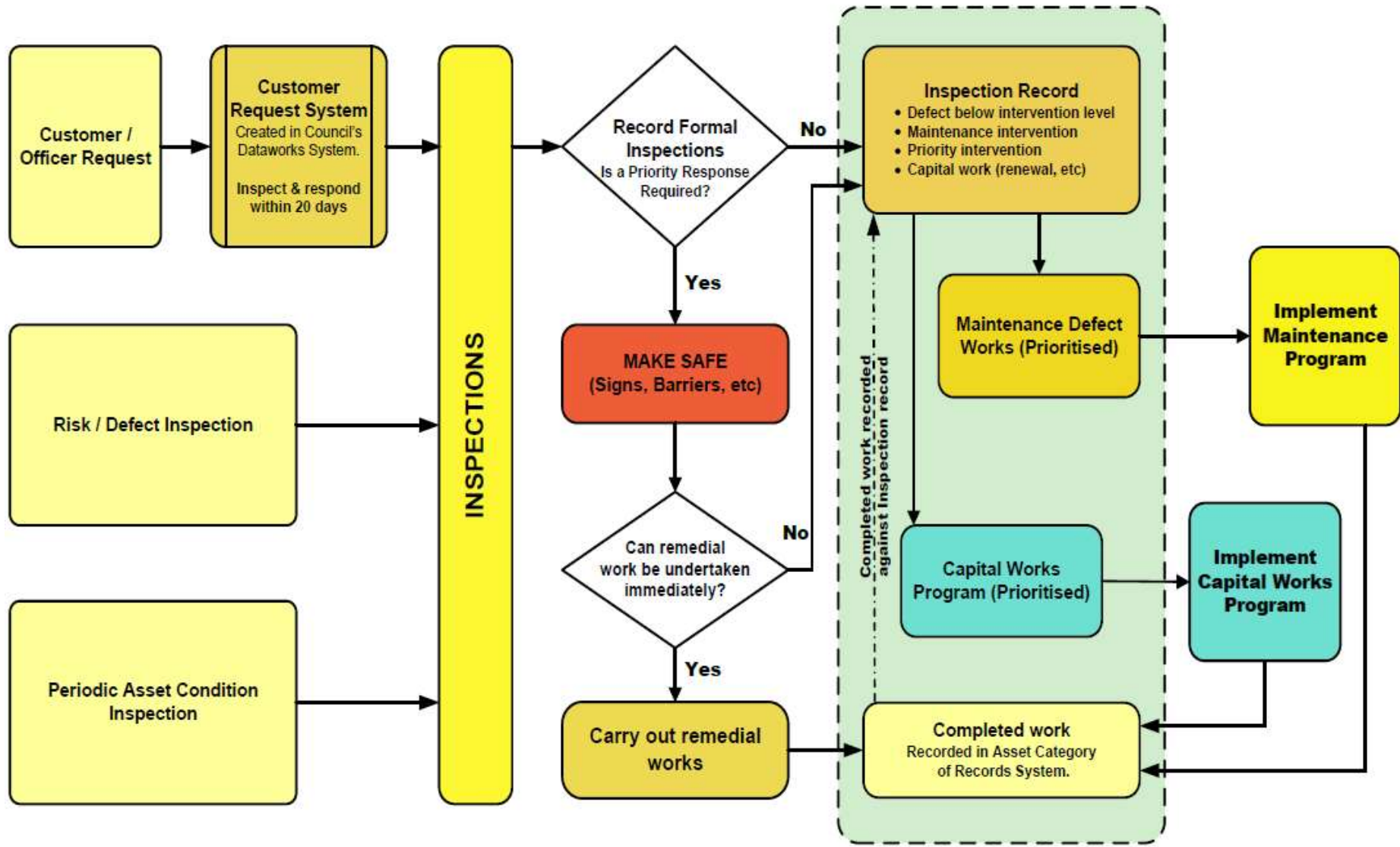
The infrastructure assets included in this plan have a total replacement value of **\$17,917,671**

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

Table 2.1: Key Stakeholders in the Asset Management Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none"> ■ Represent needs of community/shareholders, ■ Allocate resources to meet planning objectives in providing services, while managing risks, ■ Ensure service is sustainable, ■ Make informed decisions, in the best interests of the community.
General Manager	<ul style="list-style-type: none"> ■ Maintain a proactive approach to holistic asset management practices and ensure staff do the same. ■ Inform Councillors to enable educated decisions to be made.
Infrastructure Management Team	<ul style="list-style-type: none"> ■ Maintain a proactive approach to holistic asset management practices. ■ Ensure the Asset Management Plan is used and updated regularly. ■ Inform Councillors to enable educated decisions to be made.
General Public	<ul style="list-style-type: none"> ■ Report shortcomings, damage, safety concerns and other issues with current hydraulic infrastructure assets.

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



2.2 Goals and Objectives of Asset Ownership

Council's core business is to provide services to its community. Some of these services are provided by hydraulic infrastructure assets. We have acquired hydraulic infrastructure assets through purchase, contract, construction by Council staff, and by donation of assets constructed by others to meet increased levels of service.

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

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

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

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

- International Infrastructure Management Manual 2015 ¹
- ISO 55000²

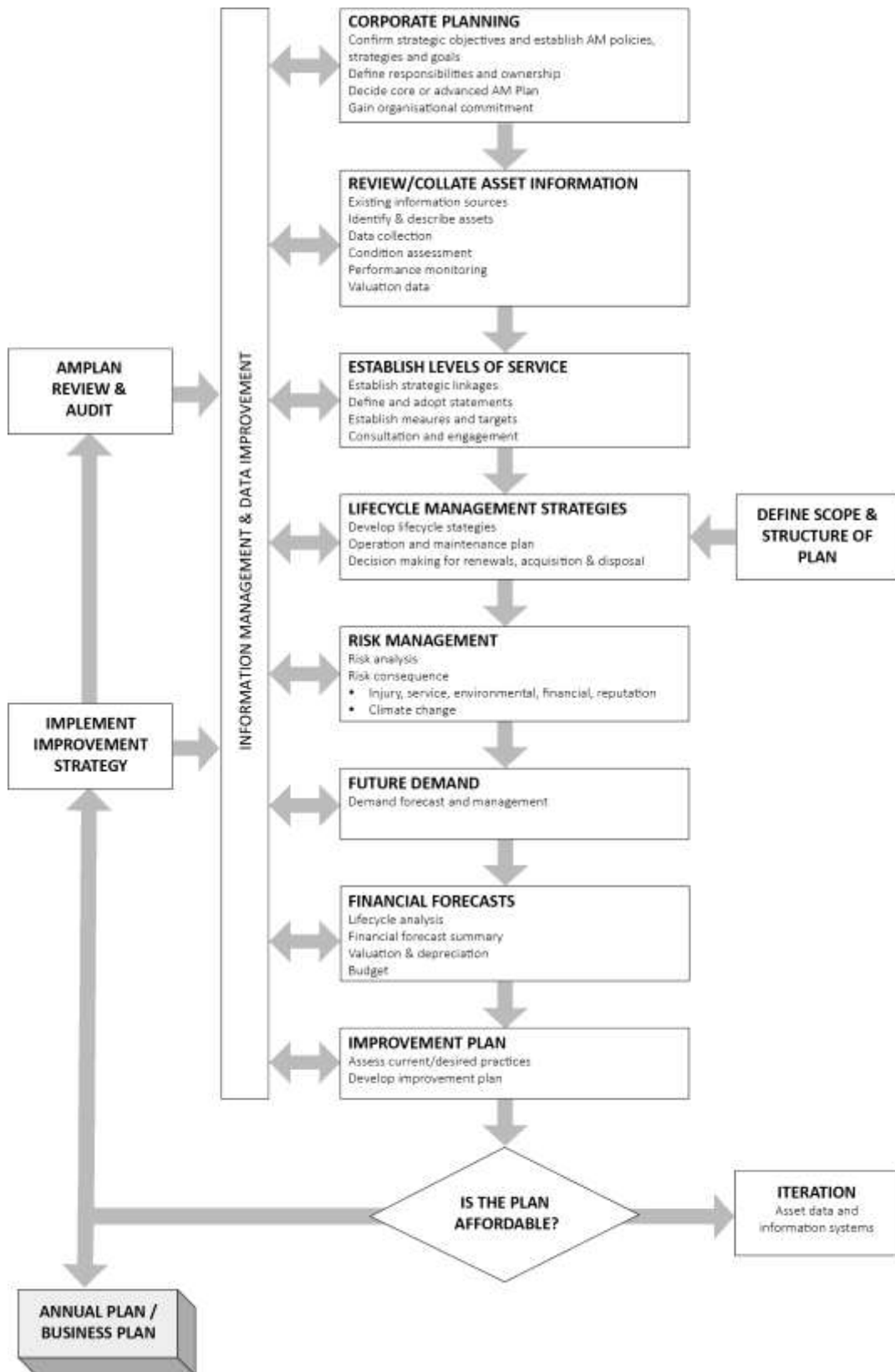
A road map for preparing an Asset Management Plan is shown below.

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

² ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

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



3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by Council. Future revisions of the Asset Management Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist 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.

Council undertakes community consultation for proposed developments. Council also receives vast community feedback on the services and facilities it provides. Budget submissions are invited from local district committees and community groups for Council consideration. Council's customer request system is used to determine trends in community expectations. This information is used in developing key planning documents and in allocation of budget resources.

3.2 Strategic and Corporate Goals

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

Our vision is:

We want Glamorgan Spring Bay to be: Prosperous, vibrant and inclusive. A place where people want to live, work and visit.

Our Primary Function and Activities:

Help and support our communities to develop and thrive.

- ***Providing direct, essential council services and accordance with LG legislation.***
- ***Making and enforcing by-laws for the benefit of the overall community.***
- ***Raising revenue to enable Council to perform its key functions.***
- ***Planning and creating recreational spaces and facilities.***
- ***Encouraging the Local Community to make the most of its strengths, resources and skills.***
- ***Advocating for the region with state and federal government and other key stakeholders in pursuing our plans and priorities and fulfilling our role.***
- ***Encouraging investment from individuals and businesses in development that fits with the values and character of our region.***
- ***Protecting the environmental values and amenity of the east coast.***

Strategic goals have been set by the Council. The relevant goals and objectives and how these are addressed in this Asset Management Plan are summarised in Table 3.2.

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

Goal	Objective	How Goal and Objectives are addressed in the Asset Management Plan
To provide safe and reliable stormwater drainage assets.	Maintain and develop stormwater infrastructure to appropriate standards.	Continue to develop and maintain regular inspection of asset condition, defects and develop maintenance and capital works programs for inclusion in the Asset Management Plan. Refer Section 8.0.
Good Governance	Provide asset management services in a sustainable manner. Deliver services effectively and efficiently.	Completion, adoption and review of asset management plans (this plan)

Appropriate service levels	Identify current service levels and target sustainable levels	An ongoing task that will be monitored and improved. Refer Section 8.
Improved risk management	Identify and address all known high level risks to hydraulic infrastructure assets	Implement a structured approach to identify and manage significant risks. Refer Section 6.
Financial sustainability	Identify financial inefficiencies	Implement a structured approach to identifying financial inefficiencies.

3.3 Legislative Requirements

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

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Work Health and Safety Act 2012	Sets out the roles and responsibilities to secure the health, safety and welfare of persons at work.
Urban Drainage Act 2013	Sets out the roles and responsibilities for ensuring the safe and sustainable provision of stormwater services to the community.
Local Government Highways Act	Sets out the responsibilities for roadside infrastructure and management of stormwater.
Building Act 2016	Details requirements of buildings in riverine and coastal inundation areas.

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:

Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Adequate condition of hydraulic infrastructure assets	Number of customer service requests	Some stormwater assets and sites require improvement.	Expected to slightly improve over planning period
Stormwater network to prevent flooding and damage to properties and other infrastructure	Number of customer service requests	Improvements required level of service expected by customers not being met	Gradual improvement over planning period
A safe stormwater infrastructure network	Number of customer service requests	Minimal	Expected to remain similar to existing or slightly improve over planning period

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	Quality of hydraulic infrastructure stormwater drainage network	Professional judgement	Many stormwater assets do not meet customer requirements for expected level of service	Condition of stormwater assets not expected to improve over planning period.
	Confidence levels		High – 8 Catchment Plans completed to inform appraisal.	High – No budget allocated to address deficiencies
Function	Appropriate and compliant (with relevant Acts and Standards) hydraulic infrastructure	Catchment Plans identify deficiencies. Customer requests confirm deficiencies	Improvements required for many stormwater assets	Required improvements to be gradually undertaken over the planning period, hence a gradual improvement and reduction in customer service requests.
	Confidence levels	High	High – 8 Catchment Plans completed to inform appraisal.	High – 8 Catchment Plans completed to inform appraisal.
Capacity	Appropriate capacity to meet with flows/demand.	Many assets below standard	Based on customer service requests, catchment plans	Subject to budget
	Confidence levels	High – 8 Catchment Plans completed to inform appraisal.	High – 8 Catchment Plans completed to inform appraisal.	High – 8 Catchment Plans completed to inform appraisal.

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

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

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc).
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

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

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

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Acquire assets that align with Council's core purpose	Number of and funds spent on acquisitions	Council acquires stormwater assets generally via developer donation (new subdivision) or through construction of new assets (pipes, drains etc.)	Only acquire assets that align with Council's core purpose and that Council can afford to maintain, operate, renew and/or dispose of (must consider full asset lifecycle costs). Prioritise and budget for completion of works in accord with budget
		Budget	\$125,00 per year (10 year average)	\$125,000 per year (10 year average)
Operation	Keep hydraulic infrastructure serviceable and safe	Number of customer service requests	User feedback and professional reports identify many issues with stormwater drainage network	Make improvements where required in order to minimise number of customer service requests
	Regular condition inspections	Percentage of assets inspected, number of customer service requests relating to blocked culverts, pits etc.	Formal inspection program is in place prior to forecasted significant rain events known problematic areas are inspected to ensure stormwater assets are operational (free of debris).	Further develop the condition inspection and cleaning program.
		Budget	\$50,000 per year (10 year average)	\$50,000 per year (10 year average)
Maintenance	Keep hydraulic infrastructure safe.	Frequency of maintenance	Reactive minor repairs and minor upgrades are undertaken	Reactive minor repairs, minor upgrades, and a planned preventative maintenance programme
	Keep hydraulic infrastructure serviceable	Frequency of maintenance	Reactive minor repairs and minor upgrades are undertaken	Reactive minor repairs, minor upgrades, and a planned preventative maintenance programme
		Budget	\$233,251 per year	\$233,251 per year

³ IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
Renewal	Ensure hydraulic infrastructure assets are in a good serviceable condition	Frequency of renewal	Renewals have not been regularly undertaken in recent times, but if so they have been completed on a priority basis (generally driven by customer service requests)	Renewal programme to be developed based on condition assessment data and professional judgement by staff, in conjunction with recommendations from the <i>Urban Stormwater Management Plan</i> .
	Ensure hydraulic infrastructure assets remain fit for purpose and in-line with current standards	Frequency of renewal (including component renewal)	Not currently monitored in any formal way. Pipe network currently judged to have approximately 1 in 5 year event capacity. Overland flow currently judged to be approximately 1 in 10 year event capacity.	Renewal programme to be developed based on condition assessment data and professional judgement by staff. Pipe network capacity to have a 1 in 10/20 year event capacity and overland flow path to have 1 in 100 year equivalent flow capacity.
		Budget	\$149,000 per year (10 year average)	\$253,000 per year (10 year average)
Disposal	Identify assets and activities that do not align with Council's core purpose	Number of assets and activities identified for disposal	Some potential disposals have been identified	Develop a list of potential asset and activity disposals for Council assessment
	Dispose of assets and activities that do not align with Council's core purpose	Number of identified asset and activity disposals undertaken	No disposals are currently planned	Develop a plan for, and dispose of, identified assets following Council approval
		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 changing circumstances such as technology and customer priorities will change over time.

4.0 FUTURE DEMAND

4.1 Demand Drivers

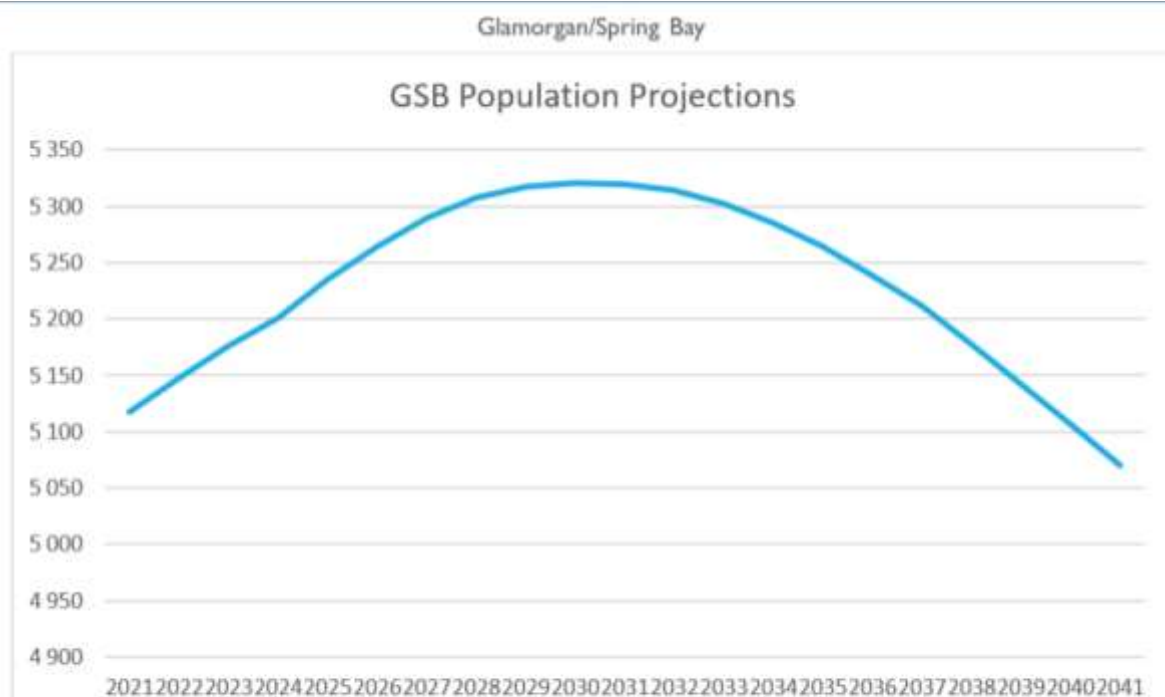
Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecasts

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

Population of the Glamorgan Spring Bay Local Government Area was last estimated in 2021 to be 5012. Figure 4.2 below shows the projected population over the planning period. Analysis of this figure shows a slight projected rise in population to approximately 5,350 around 2030 and then a gradual decline to around 5,070 at the end of the planning period (2041). Hence, it is anticipated that there will be little need for change to the adopted 'Levels of Service' relating to population growth.

Glamorgan/Spring Bay Projections – Medium Series



Department of Treasury and Finance
Figure 4.2 – Department of Treasury and Finance – Glamorgan Spring Bay population projections (medium series).

4.3 Demand Impact and Demand Management Plan

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

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

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

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population	5,012 people in 2021.	Refer Figure 4.2	The change is not foreseen to impact services	No impact to services, hence management plan is not required.
Demographic	Median age of 57 years (2021)	Increase in median age to approx. 65 years by 2041	The change is not foreseen to impact services	No impact to services, hence management plan is not required.
Existing stormwater drainage issues and climate change	Experiencing more extreme weather patterns and events	Continue to experience increased frequency and intensity of extreme weather events (30% increase in stormwater design flows)	Will require upgrade to stormwater drainage network to increase capacity.	Refer <i>Urban Stormwater Management Plan</i>
Future development	Development of previously vacant land gradually occurring	Forecast to continue	Additional demand on local stormwater networks	Refer <i>Urban Stormwater Management Plan</i>

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 Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the Long Term Financial Plan (Refer to Section 5).

4.5 Climate Change Adaptation

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

How climate change impacts on assets varies depending on the location and the type of services provided, as does the way in which we respond and manage those impacts.⁴

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

Risk and opportunities identified to date are shown in Table 4.5.1

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

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

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Increased frequency and intensity of extreme rainfall events, in conjunction with sea level rise	Upgrade to stormwater drainage infrastructure	Increased drainage renewal, acquisition and maintenance costs	Refer <i>Urban Stormwater Management Plan</i>

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

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

Table 4.5.2 summarises some asset climate change resilience opportunities.

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact on these assets?	Build Resilience in New Works
Stormwater drainage infrastructure	Greater capacity required	Only renew with, or acquire, assets that have been designed to allow for climate change flows in accordance with the <i>Urban Stormwater Management Plan</i>

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this Asset Management Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

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

Table 5.1.1: Assets covered by this Plan

Asset Category	Number of Assets/Length	Replacement Value
Stormwater pipes (including culverts where recorded)	49.155 km	\$12,997,553
Stormwater pits (manholes, side entry pits, grated pits, gross pollutant traps etc.)	1876	\$4,262,316
Pump Stations	1	\$25,000
Stormwater detention and infiltration basins	2	\$30,000
Swanwick Sewerage System	1	\$656,000
TOTAL	-	\$17,917,671

All figure values are shown in current day dollars.

The age profile of the assets included in this Asset Management Plan would normally be shown in Figure 5.1.1. below, however due to construction dates of hydraulic infrastructure assets being largely unknown, this graph is not shown. This is noted for improvement in Section 8.0. This graph would normally outline past peaks of investment that may require peaks in future renewals.

Figure 5.1.1: Asset Age Profile

The data set for stormwater assets is very poor. As a result, the age profile is unknown. For the purpose of a position which is representative of the asset portfolio condition, it is expected that the asset portfolio is composed of assets evenly spread across their useful lives with whole of life of some being reached. A position is taken that the asset renewal projection is reasonably reflected from this assumption.

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5.1.2 Asset capacity and performance

Today, stormwater and hydraulic infrastructure assets are provided to meet design standards where these are available. In a rural area like Glamorgan Spring Bay it is expected that during the early years of development, a more fundamental approach has been taken resulting in inadequate infrastructure. There is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in the Stormwater Catchment Plans.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Orford Rivulet	Rivulet formation
East Shelly Beach	Inadequate network
South Orford	Inadequate network
South Orford (North)	Inadequate network
North Orford	Inadequate network
Saltwater Creek Swansea	Inadequate network
West Shelly Beach	Inadequate network
Holkham Court Orford	Inadequate network
Other areas TBA	Inadequate network

The above service deficiencies were identified from a project carried out by Council's contract hydraulic engineer who has recently authored the *Urban Stormwater Management Plan*. There are further service deficiencies known and additional catchment plans to develop to identify the mitigation works required. Once stormwater network modelling is completed, verification and better understanding of other currently unknown service deficiencies will be achieved.

5.1.3 Asset condition

Condition is not currently monitored in any formal way and hence graded condition ratings of assets are not currently included within the asset register. Condition inspections and condition rating of assets have been noted in the improvement plan in Section 8.

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

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

Table 5.1.3: Condition Grading System

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

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

Figure 5.1.3: Asset Condition Profile

(not available)

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning out stormwater pipes/culverts/drains, asset inspection, and staff 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 patch repairs, minor timber bridge deck works, patch repairs to stormwater pipes etc.

The trend in operations and maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Operations and Maintenance Budget Trends

Year	Operations and Maintenance Budget \$
2020-21	\$142,100
2021-22	\$278,327
2022-23	\$294,475

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 Asset Management 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.

Asset hierarchy

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

The service hierarchy is shown in Table 5.2.2.

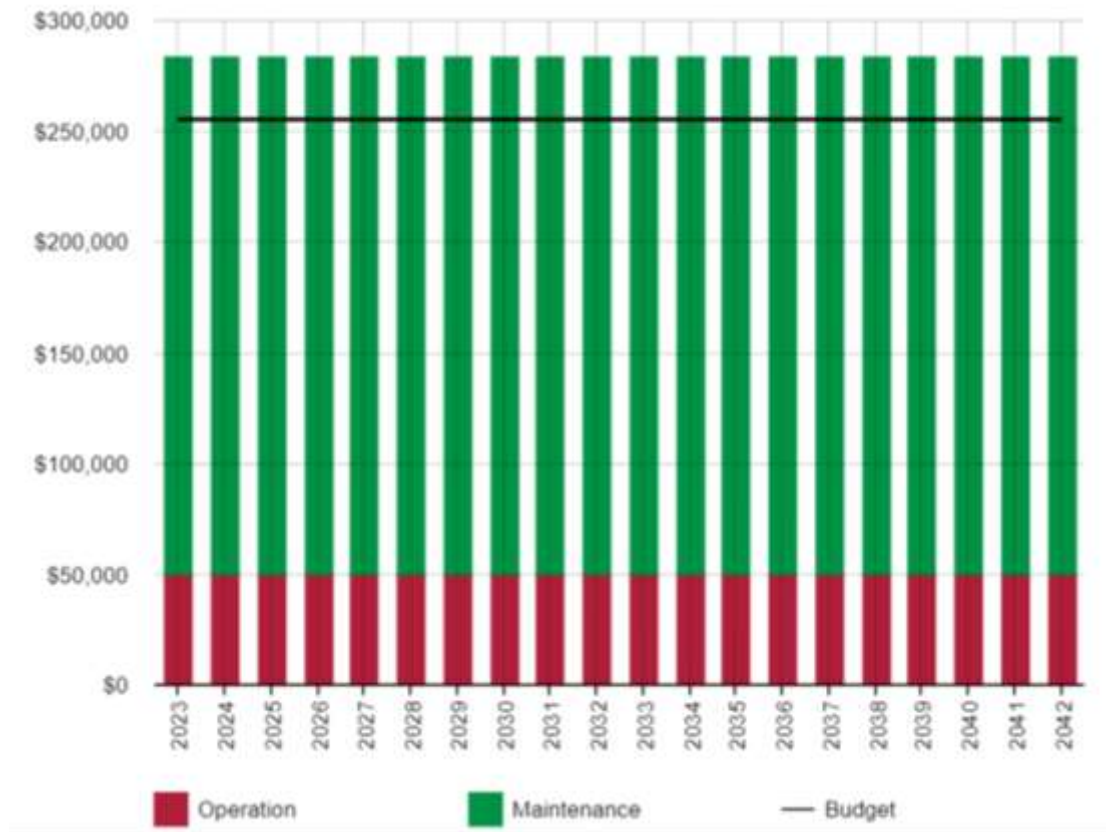
Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Level 1 (Critical, high priority) - Main stormwater drainage assets	Maintain main trunk and other high importance drainage system assets (inclusive of pits, pipes, open channels and detention basins) so that the risk of flooding to dwellings or roads is mitigated. Regular inspections undertaken to ensure serviceable.
Level 2 (High importance) - Collector type stormwater drainage assets	Maintain collector drainage systems and their elements (inclusive of pits, pipes, open channels) so that the risk of flooding of any adjacent property or road is mitigated. Only known problematic areas inspected prior to forecast significant rain events.
Level 3 (Non-critical, low priority) - Minor collector stormwater drainage assets (if these fail, consequences are low)	Not generally inspected. Normally only a reactive type service provided when issues present.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

As can be seen in Figure 5.2, operation cost forecasts are flat over the planning period. Minimal allowance has been made for additional operation costs associated with acquired assets. When acquiring assets over the planning period, it is expected for operation and maintenance costs to also increase. Figure 5.2 highlights that Council does not currently have sufficient planned budget to undertake all of the forecast operation and maintenance.

Deferred maintenance (i.e. works that are identified for maintenance activities but unable to be completed due to available resources) should be included in Section 6.0 of this plan where it poses a ‘high’ or ‘very high’ risk to Council – refer Table 6.2.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

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

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

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed in December 2020.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Stormwater pipes	100 years
Stormwater pits (manholes, side entry pits, grated pits etc.)	100 years
Stormwater detention/infiltration basins	100 years
Stormwater Gross Pollutant Traps	75 years
Stormwater culverts	75 years
Open drains/overland flow paths	100 years
Swanwick Sewerage System	8 - 100 years

The estimates for renewals in this Asset Management Plan were based on a combination of both the asset register and alternate methods.

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 pipes that have broken collars and are disjointed), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. pipe size is adequate to meet projected 1 in 20 year stormwater flow).⁶

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.⁷

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
Capacity	60 %
Risk/failure consequence	25 %
Condition	10 %
High operation & maintenance costs that could be reduced significantly by renewal	5 %

⁶ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

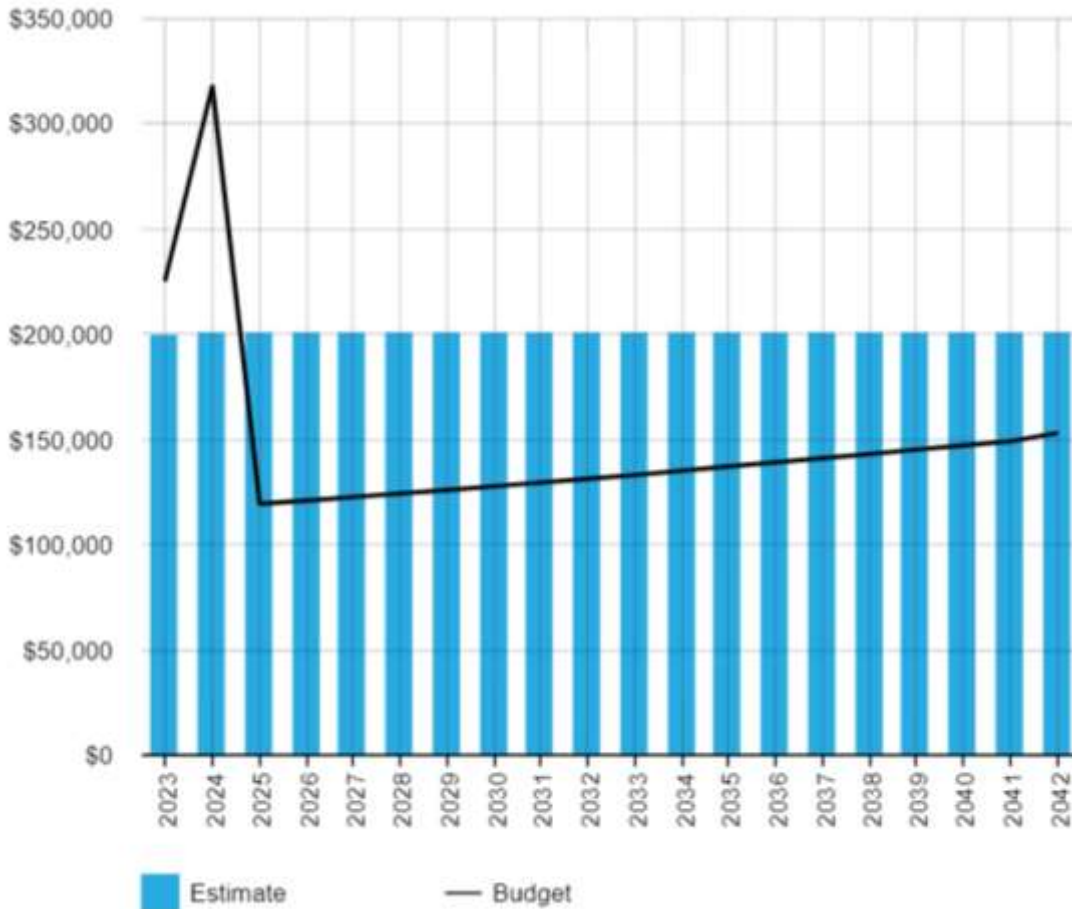
⁷ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Criteria	Weighting
Total	100%

5.4 Summary of future renewal costs

The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

Figure 5.4.1 shows that the forecast renewal costs do not match the proposed renewal budget over the planning period.

There are deferred renewals forecast as a result of the development of catchment plans and identification of under-capacity infrastructure. Deferred renewal (assets identified for renewal and not scheduled in capital works programs) should be included in Section 6.0 of this plan where they pose a ‘high’ or ‘very high’ risk to Council – refer Table 6.2.

5.5 Acquisition Plan

Acquisition are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to Council (e.g. stormwater pipes and culverts associated with a new subdivision).

5.5.1 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 Council's needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.5.1.

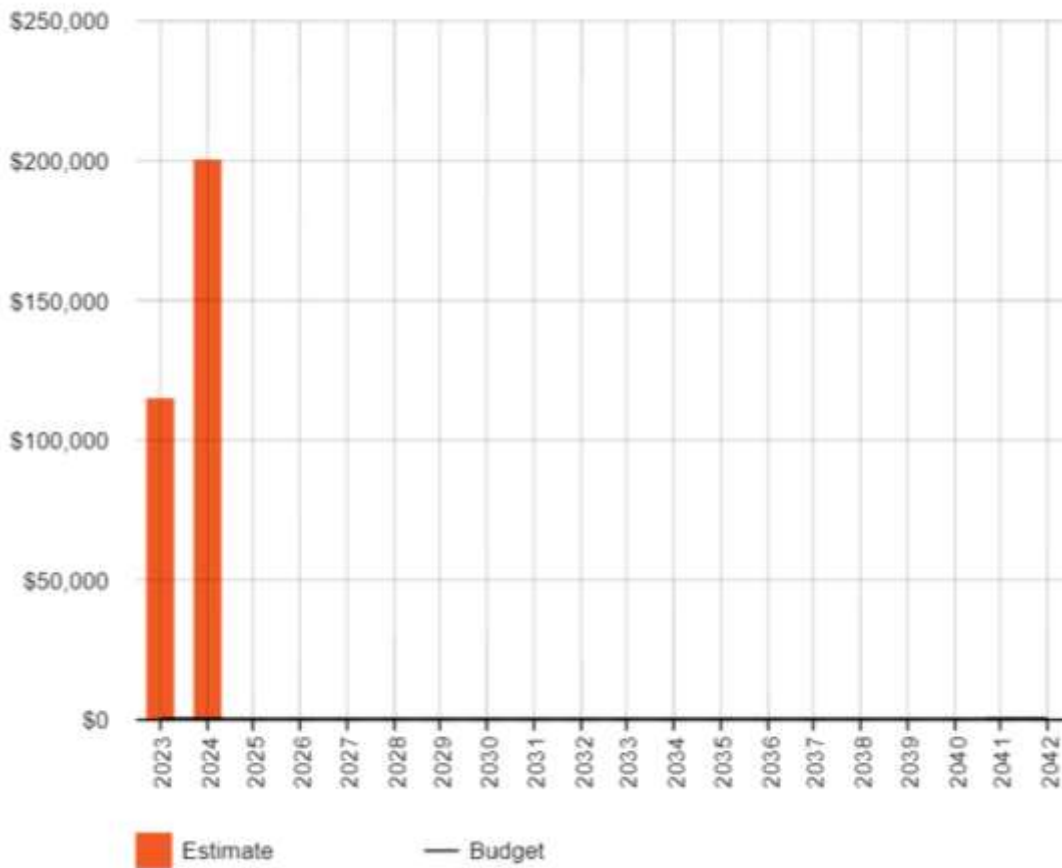
Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Is the acquisition in line with Council's core purpose?	30 %
Necessity/demand	25 %
Are lifecycle costs known and funds available in planned budget?	20 %
Risk consequence of not providing	25 %
Total	100%

Summary of future asset acquisition costs

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

Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

As can be seen in Figure 5.5.1, acquisition (constructed) cost forecasts come from the long-term financial plan. They identify that there is no capital budget to address inadequate service level provision into the future.

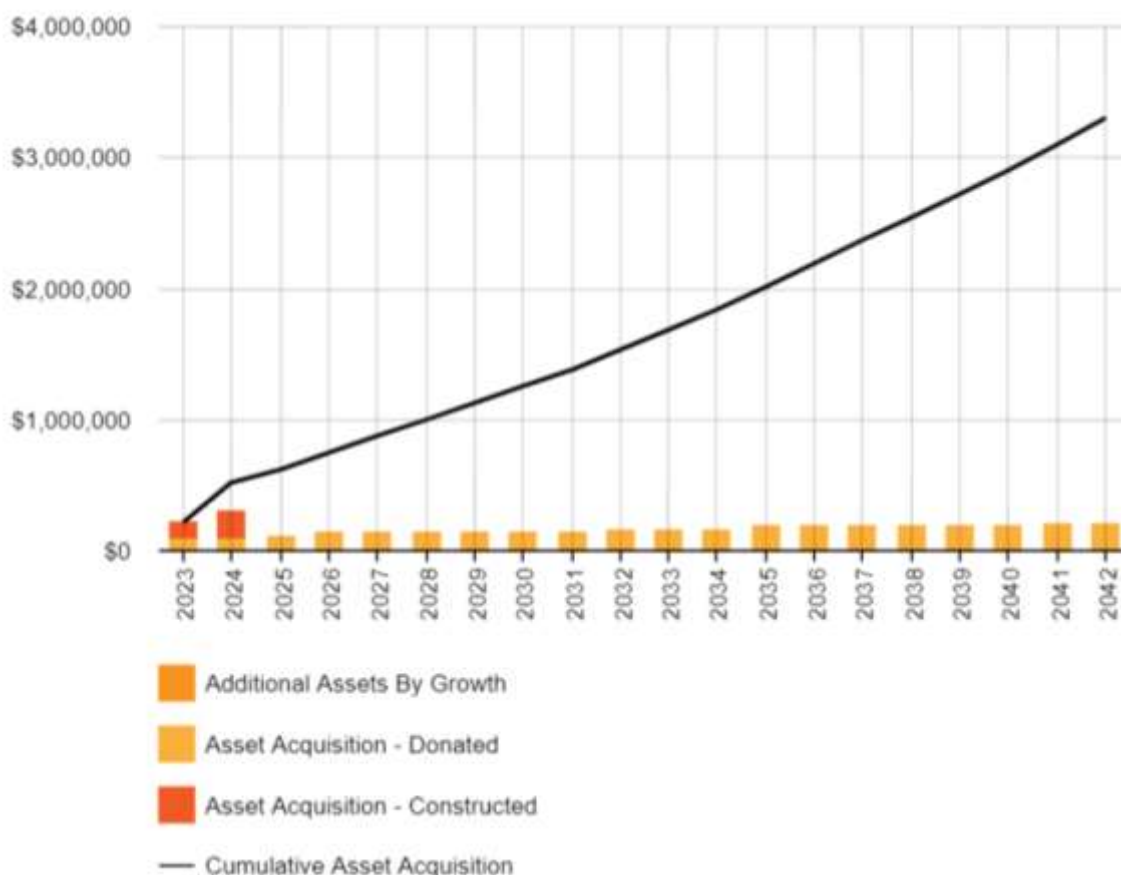
The values in 2023/24 represent part of the \$500,000 that Council budgeted in 2020 for capital works to improve the performance of the stormwater drainage network. Figure 5.5.1 highlights that Council currently has sufficient planned budget to undertake all of the forecast acquisitions over the planning period.

When 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 Council.

Council is in the midst of a development wave resulting in significant subdivision construction which brings with it measures to mitigate flooding and upgrade existing systems that council must also contribute to in many instances.

The cumulative value of all acquisition work, including assets that are constructed and contributed are shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current dollars.

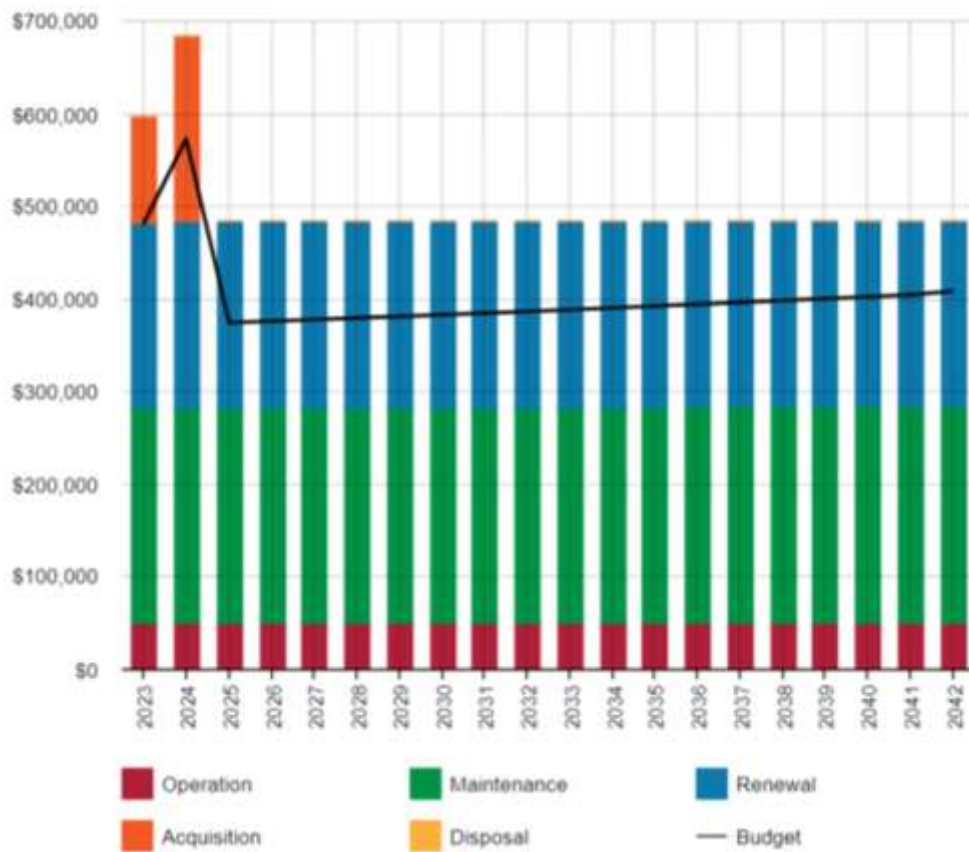
Expenditure on new assets and services in the capital works program will be accommodated in the Long Term Financial Plan, but only to the extent that there is available funding.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, 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 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

As can be seen in Figure 5.5.3, the forecasted lifecycle costs exceed the planned budget (black line) throughout the planning period. The known service failures in the system is the main reason for the shortfall between the planned budget and the forecast lifecycle costs. All other lifecycle forecast components are in balance with the planned budget, which is good.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the Long Term Financial Plan.

NOTE: The assets identified for potential disposal in Table 5.6 are preliminary only and will require further investigation, reporting, community consultation and ultimately Council approval before any disposals are actually undertaken. The further investigation required should include looking at renewal costs, operating and maintenance costs, age, condition, land ownership, leases and licenses, current use and community concerns, with this information then reported back to Council.

Table 5.6: Potential Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Stormwater drainage assets that are under capacity and will be replaced prior to the end of their useful life (as part of any works recommended from the <i>Urban Stormwater Management Plan</i> – refer works plan shown in Appendix A).	To improve stormwater drainage network	Unbudgeted – no time frame	Currently unknown	N/A

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’⁸.

An assessment of risks⁹ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. 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
- All stormwater drainage assets (notably stormwater detention basins, culverts, pipelines, open drains, overland flow paths etc.)	Flooding/blockage	Damage to buildings, roads and other infrastructure.
Swanwick sewerage system	Component failure or overflow	Environmental nuisance

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.

⁸ ISO 31000:2009, p 2

⁹ Refer GSBC Risk Management Policy and GSBC Risk Management Strategy (June 2020)

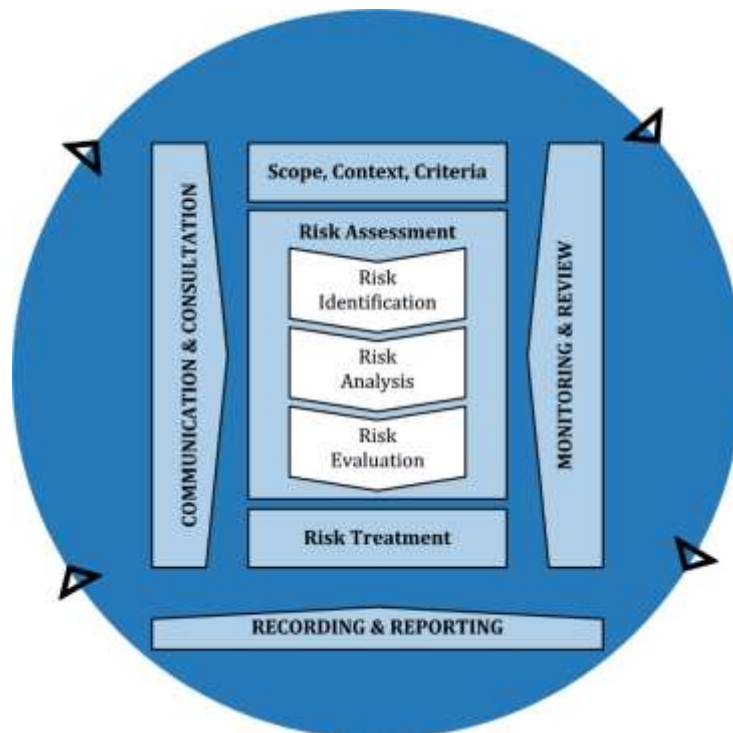


Fig 6.2 Risk Management Process – Abridged
 Source: ISO 31000:2018, Figure 1, p9

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 risks¹⁰ 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 Councilors.

¹⁰ Refer GSBC Risk Management Policy and GSBC Risk Management Strategy (June 2020)

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
Hydraulic Infrastructure	Loss of knowledge	H	Develop a succession plan and improve record keeping	L	Budgetted
Hydraulic Infrastructure	Underfunding	H	Ensure prioritised renewal and acquisition works are budgetted	L	\$104,000 annually
Swanwick Sewerage System	Upgrade required	H	User Charge covers maintenance and renewal	L	Budgetted
Hydraulic Infrastructure	Flooding to dwellings/network requires increased capacity	H	Upgrade stormwater network adjacent to affected properties	L	\$5.0M+/- over the next 5-10 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.

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

6.4 Service and Risk Trade-Offs

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

6.4.1 What we cannot do

The planned budget does not allow all capital works (acquisitions, upgrades and renewals) recommended in the *Urban Stormwater Management Plan*. Council will endeavour to fund these works on a priority basis over the next 5-10 years.

6.4.2 Service trade-off

Where 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. The service consequences will generally be related to a reduction in level of service provided.

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:

- A reduction to the level of service provided
- Reputational consequences
- Insurance claims for property damage

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

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

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

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio¹¹ **77.24 %**

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have **77.24 %** of the funds required for the optimal renewal of assets.

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

Medium term – 10 year financial planning period

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

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

The forecast operations, maintenance and renewal costs over the 10 year planning period is **\$514,804** on average per year.

The proposed (budget) operations, maintenance and renewal funding is **\$409,867** on average per year giving a 10 year funding shortfall of **-\$104,938** per year. This indicates that **79.62 %** of the forecast costs needed to provide the services documented in this Asset Management Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the Asset Management 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 7.1.3 shows the forecast costs (outlays) required for consideration in the 10 year Long Term Financial Plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the Long Term Financial Plan.

A gap between the forecast outlays and the amounts allocated in the financial plan indicates further work is required on reviewing service levels in the Asset Management Plan (including possibly revising the Long Term Financial Plan).

¹¹ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

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

Forecast costs are shown in 2022 dollar values.

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

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2022	\$115,000	\$50,000	\$233,251	\$199,757	\$0
2023	\$200,000	\$50,000	\$233,273	\$200,000	\$0
2024	\$0	\$50,000	\$233,303	\$200,000	\$0
2025	\$0	\$50,000	\$233,313	\$200,000	\$0
2026	\$0	\$50,000	\$233,326	\$200,000	\$0
2027	\$0	\$50,000	\$233,338	\$200,000	\$0
2028	\$0	\$50,000	\$233,351	\$200,000	\$0
2029	\$0	\$50,000	\$233,364	\$200,000	\$0
2030	\$0	\$50,000	\$233,376	\$200,000	\$0
2031	\$0	\$50,000	\$233,389	\$200,000	\$0
2032	\$0	\$50,000	\$233,404	\$200,000	\$0
2033	\$0	\$50,000	\$233,420	\$200,000	\$0
2034	\$0	\$50,000	\$233,435	\$200,000	\$0
2035	\$0	\$50,000	\$233,452	\$200,000	\$0
2036	\$0	\$50,000	\$233,470	\$200,000	\$0
2037	\$0	\$50,000	\$233,488	\$200,000	\$0
2038	\$0	\$50,000	\$233,506	\$200,000	\$0
2039	\$0	\$50,000	\$233,523	\$200,000	\$0
2040	\$0	\$50,000	\$233,541	\$200,000	\$0
2041	\$0	\$50,000	\$233,561	\$200,000	\$0

7.2 Funding Strategy

The proposed funding for assets is outlined in Council's budget and Long Term Financial Plan.

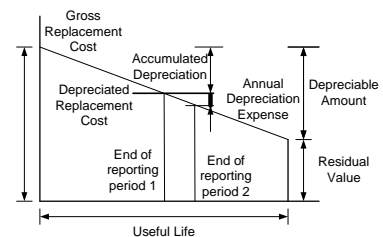
The financial strategy of Council determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of hydraulic infrastructure assets included in this Asset Management Plan is shown below:

Replacement Cost (Current/Gross)	\$17,921,671
Depreciable Amount	\$17,921,671
Depreciated Replacement Cost ¹²	\$13,796,837
Annual Depreciation	\$90,315



Note* Depreciated Replacement Cost represents the depreciated value held in the Asset Data base – not including the discovered assets.

7.3.2 Valuation forecast

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

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

Forecast acquisitions noted in Appendix A have been identified to address known deficiencies in the stormwater drainage network. Many stormwater drainage assets are currently missing from Council's Geographical Information System and asset register. A project is currently being completed by Council's surveyor/geographical information system officer to collect this missing data and update the asset register. There are a significant number of these assets which have already been identified and it is expected there will be many more. On completion of forecast acquisitions and the data collection project, there will be an increase in stormwater drainage asset values and this plan should be updated to reflect this.

7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this Asset Management Plan:

- Expenditure projections are low confidence budget type figures with a range of $\pm 40\%$
- Financial data used in the development of this plan was from the end of the 2021-22 financial year.
- It is assumed that no major acquisitions outside of those referenced in this plan are to be undertaken during the planning period without detailed lifecycle costing knowledge and allocation in planned budget to meet these costs.
- Several gross assumptions were required in the derivation of planned budget and lifecycle forecast figures. This is due to the quality of financial information currently available.
- Professional judgement has been applied in the absence of good quality data, however where applied, it has been noted for improvement in Section 8.0.
- All figures are presented in current day dollars.

¹² Also reported as Written Down Value, Carrying or Net Book Value.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this Asset Management Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on an A - E level scale¹³ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

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

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

Table 7.5.2: Data Confidence Assessment for Data used in Asset Management Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium	Confirmed after two years of monitoring
Growth projections	High	State government provided projections used
Acquisition forecast	Low	Unknown - assumptions provided
Operation forecast	Low	Several gross estimates and assumptions made. Requires review on provision and improvement of financial data
Maintenance forecast	Low	Maintenance and operations forecast based on 22-23 budget.
Renewal forecast - Asset values	Medium to High	Based on Assetic Consultant revaluation rates (2022) including actual construction costs for some classes. Medium confidence relates to the assets still unknown – we continue to locate more assets not previously recorded.
- Asset useful lives	Low	Based on professional judgement/estimate by staff – within industry standards

¹³ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

- Condition modelling	Low	Assumption made on a standard life cycle
Disposal forecast	Medium	Assumed

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

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹⁴

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The source of the data is Council's asset management system Xero and *Assetic*.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is Council's asset management software *Assetic* in conjunction with spatial information obtained from *Spectrum* Geographic Information Systems (GIS).

8.2 Improvement Plan

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

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Council to take on management of stormwater drainage assets in <i>Assetic</i> software and aim to improve information and confidence in the asset register (including condition assessment, review of useful lives, construction dates, replacement value etc.).	Director of Infrastructure	Technical officer	2023-2025
2	Develop detailed capital works program for upcoming years with project ranking consistent with agreed criteria. Use to inform Asset Management Plan and Long Term Financial Plan updates.	Director of Infrastructure, Works Manager, Works Supervisor	Accountant, Works Manager, Works Supervisor	June 2024
3	Increase accuracy of budget breakdown to include acquisitions, maintenance, operations, renewals and disposals. Aim for better transparency.	Accountant	Accountant, Director of Infrastructure	September 2025
4	Continue to update Geographical Information System (GIS) to include all previously missing stormwater drainage assets (including pipes, headwalls, pits, culverts and open drains) once they have been recorded.	Director of Infrastructure	Technical officer	2023
5	Update of the <i>Urban Stormwater Management Plan</i> , including all associated recommendations. This includes completion of catchment modelling to	Director of Infrastructure	Hydraulic Engineer	2024

¹⁴ ISO 55000 Refers to this as the Asset Management System

	better understand/identify deficiencies (currently underway).			
6	Improve confidence in financial data used in Long Term Financial Plan and Asset Management Plan – this is foreseen to involve improved recording of acquisition, operations, maintenance, renewal and disposal asset lifecycle activities within XERO (accounting software) so accurate costs can be developed.	Accountant	Accountant, Director of Infrastructure Works Manager, Works Supervisor	December 2024
7	Update forecast disposal values within Asset Management Plan for assets where upgrade works are to occur, noting this will involve writing off the remaining value of replaced assets where they have not reached the end of their useful life.	Director of Infrastructure, Accountant	Director of Infrastructure, Accountant	2023
8	Continue to develop and maintain regular inspection of asset condition, defects and develop maintenance and capital works programs for inclusion in the Asset Management Plan.	Director of Infrastructure	Internal	Ongoing
9	Continually improve correlation between Long Term Financial Plan and Asset Management Plan. (Conduct regular meetings of responsible persons – aim for ‘high’ confidence level)	General Manager, Accountant, Director of Infrastructure	General Manager, Accountant, Director of Infrastructure	Ongoing
10	Increase confidence and maturity of Asset Management Plan	Director of Infrastructure	Internal	Ongoing

8.3 Monitoring and Review Procedures

This Asset Management 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 Asset Management 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 Asset Management Plan has a maximum life of 4 years and is due for complete revision and updating within 6 months of each Council election.

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the Long Term Financial Plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the ‘global’ works program trends provided by the Asset Management Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,

- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
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- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
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- IPWEA, 2020 'International Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
- 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, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- '10-year Strategic Plan 2020-2029'
- '2020-2021 Annual Plan' (incl. budget)

10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions and Source

A key assumption in the writing of this Asset Management Plan is that no major acquisitions, outside of those noted in this plan, are forecast to be undertaken during the planning period. Given future demand (discussed in Section 4), Council's current financial position and available budget, a strategy of minimising acquisitions over the planning period is recommended.

The 'donated' acquisition forecast summary estimate is based on the completion (by others/developers) of a moderate sized subdivision each year over the planning period (including associated stormwater drainage pits and pipes to approximately \$100,000 in value).

Several gross estimates and assumptions were required to be made in the acquisition forecast figures due to the quality of financial and forecast information currently available. This has been noted for improvement in Section 8.0.

A.2 – Acquisition Project Summary

Due to a current lack of budget, no acquisition budget summary is provided.

A.3 – Acquisition Forecast Summary

Table A3 displays the forecast acquisition value each year over the planning period.

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2023	\$115,000	\$101,792	\$0
2024	\$200,000	\$101,802	\$0
2025	\$0	\$101,813	\$0
2026	\$0	\$126,823	\$0
2027	\$0	\$126,835	\$0
2028	\$0	\$126,848	\$0
2029	\$0	\$126,861	\$0
2030	\$0	\$126,873	\$0
2031	\$0	\$126,886	\$0
2032	\$0	\$151,899	\$0
2033	\$0	\$151,914	\$0
2034	\$0	\$151,929	\$0
2035	\$0	\$176,944	\$0
2036	\$0	\$176,962	\$0
2037	\$0	\$176,980	\$0
2038	\$0	\$176,997	\$0
2039	\$0	\$177,015	\$0
2040	\$0	\$177,033	\$0
2041	\$0	\$202,051	\$0
2042	\$0	\$202,071	\$0

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions and Source

Several gross estimates and assumptions were required to be made in the operation forecast figures due to the quality of financial information currently available (poor tracking of operational costs relating to hydraulic infrastructure assets). This has been noted for improvement in Section 8.0.

B.2 – Operation Forecast Summary

Table B2 displays the forecast operation costs each year over the planning period. Note the ‘Additional Operation Forecast’ is a percentage of the ‘donated’ asset acquisitions value forecast over the planning period and this represents additional funds required to ‘operate’ these acquired assets. The forecasts include both operation of the Prosser Plains Raw Water Scheme and the stormwater drainage network.

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	\$50,000	\$0	\$50,000
2023	\$50,000	\$0	\$50,000
2024	\$50,000	\$0	\$50,000
2025	\$50,000	\$0	\$50,000
2026	\$50,000	\$0	\$50,000
2027	\$50,000	\$0	\$50,000
2028	\$50,000	\$0	\$50,000
2029	\$50,000	\$0	\$50,000
2030	\$50,000	\$0	\$50,000
2031	\$50,000	\$0	\$50,000
2032	\$50,000	\$0	\$50,000
2033	\$50,000	\$0	\$50,000
2034	\$50,000	\$0	\$50,000
2035	\$50,000	\$0	\$50,000
2036	\$50,000	\$0	\$50,000
2037	\$50,000	\$0	\$50,000
2038	\$50,000	\$0	\$50,000
2039	\$50,000	\$0	\$50,000
2040	\$50,000	\$0	\$50,000
2041	\$50,000	\$0	\$50,000

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions and Source

Several gross estimates and assumptions were required to be made in the maintenance forecast figures due to the quality of financial information currently available. This has been noted for improvement in Section 8.0.

C.2 – Maintenance Forecast Summary

Table C2 displays the forecast maintenance costs each year over the planning period. Note this relates to estimated maintenance costs for the Prosser Plains Raw Water Scheme only, as ‘maintenance’ in the context of this plan, does not generally occur to stormwater drainage assets. All operation and maintenance type costs for stormwater drainage assets have been included in the ‘operations’ forecasts in Appendix B.

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2023	\$205,400	\$27,851.00	\$233,251
2024	\$205,400	\$27,873.00	\$233,273
2025	\$205,400	\$27,903.00	\$233,303
2026	\$205,400	\$27,913.00	\$233,313
2027	\$205,400	\$27,926.00	\$233,326
2028	\$205,400	\$27,938.00	\$233,338
2029	\$205,400	\$27,951.00	\$233,351
2030	\$205,400	\$27,964.00	\$233,364
2031	\$205,400	\$27,976.00	\$233,376
2032	\$205,400	\$27,989.00	\$233,389
2033	\$205,400	\$28,004.00	\$233,404
2034	\$205,400	\$28,020.00	\$233,420
2035	\$205,400	\$28,035.00	\$233,435
2036	\$205,400	\$28,052.00	\$233,452
2037	\$205,400	\$28,070.00	\$233,470
2038	\$205,400	\$28,088.00	\$233,488
2039	\$205,400	\$28,106.00	\$233,506
2040	\$205,400	\$28,123.00	\$233,523
2041	\$205,400	\$28,141.00	\$233,541
2042	\$205,400	\$28,161.00	\$233,561

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

The renewal forecast of \$200,000 per year is based on a projection of asset life given the construction of assets extends for more than the life of the longest life assets. This figure has been used in lieu of known, condition based, forecast renewal. Refer also improvement plan in Section 8.0.

D.2 – Renewal Project Summary

In the absence of condition data for stormwater drainage assets, a renewal program cannot be developed and hence there is currently no project renewal summary. This has been noted in the improvement plan in Section 8.0.

D.3 – Renewal Forecast Summary

Table D3 displays the forecast renewal costs and planned budget each year over the planning period. These figures are matched, as noted in D.1.

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2023	\$199,757	\$225,242
2024	\$200,000	\$317,785
2025	\$200,000	\$119,358
2026	\$200,000	\$120,963
2027	\$200,000	\$122,599
2028	\$200,000	\$124,269
2029	\$200,000	\$125,972
2030	\$200,000	\$127,709
2031	\$200,000	\$129,481
2032	\$200,000	\$131,288
2033	\$200,000	\$133,121
2034	\$200,000	\$135,121
2035	\$200,000	\$137,121
2036	\$200,000	\$139,121
2037	\$200,000	\$141,121
2038	\$200,000	\$143,121
2039	\$200,000	\$145,121
2040	\$200,000	\$147,121
2041	\$200,000	\$149,121
2042	\$200,000	\$153,121

D.4 –Renewal Plan

Reference is made to the acquisition works plan in Appendix B. It is to be noted that generally stormwater assets are upgraded rather than renewed, given their generally long useful service lives and an increase in modern design flows.

Appendix E Disposal Summary

E.1 – Disposal Forecast Assumptions and Source

Through discussion with key staff the potential disposals noted in Table E2 were identified.

E.2 – Disposal Project Summary

NOTE: The assets identified for potential disposal in Table E2 are preliminary only and will require further investigation, reporting, community consultation and ultimately Council approval before any disposals are actually undertaken. The further investigation required should include looking at renewal costs, operating and maintenance costs, age, condition, land ownership, leases and licenses, current use and community concerns, with this information then reported back to Council.

Table E2: Potential Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Stormwater drainage assets that are under capacity and will be replaced prior to the end of their useful life (as part of any works recommended from the <i>Urban Stormwater Management Plan</i>)	To improve stormwater drainage network	2023-2033	Currently unknown	N/A

E.3 – Disposal Forecast Summary

Table E3 displays the disposal forecast and disposal budget over the planning period. Any costs associated with potential disposals is currently unknown and will require further investigation as previously noted, hence the zero values currently shown.

Table E3 – Disposal Activity Summary

Year	Disposal Forecast	Disposal Budget
2023	\$0	\$0
2024	\$0	\$0
2025	\$0	\$0
2026	\$0	\$0
2027	\$0	\$0
2028	\$0	\$0
2029	\$0	\$0
2030	\$0	\$0
2031	\$0	\$0
2032	\$0	\$0
2033	\$0	\$0
2034	\$0	\$0
2035	\$0	\$0
2036	\$0	\$0
2037	\$0	\$0
2038	\$0	\$0
2039	\$0	\$0
2040	\$0	\$0
2041	\$0	\$0
2042	\$0	\$0

Appendix F Budget Summary by Lifecycle Activity

Several gross estimates and assumptions were required to be made in the development of the planned budget figures shown in Table F1. This is due to the quality of financial information currently available. This has been noted for improvement in Section 8.0.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2023	115,000	50,000	233,251	199,757	0	598,008
2024	200,000	50,000	233,273	200,000	0	683,273
2025	0	50,000	233,303	200,000	0	483,303
2026	0	50,000	233,313	200,000	0	483,313
2027	0	50,000	233,326	200,000	0	483,326
2028	0	50,000	233,338	200,000	0	483,338
2029	0	50,000	233,351	200,000	0	483,351
2030	0	50,000	233,364	200,000	0	483,364
2031	0	50,000	233,376	200,000	0	483,376
2032	0	50,000	233,389	200,000	0	483,389
2033	0	50,000	233,404	200,000	0	483,404
2034	0	50,000	233,420	200,000	0	483,420
2035	0	50,000	233,435	200,000	0	483,435
2036	0	50,000	233,452	200,000	0	483,452
2037	0	50,000	233,470	200,000	0	483,470
2038	0	50,000	233,488	200,000	0	483,488
2039	0	50,000	233,506	200,000	0	483,506
2040	0	50,000	233,523	200,000	0	483,523
2041	0	50,000	233,541	200,000	0	483,541
2042	0	50,000	233,561	200,000	0	483,561