Water Treatment and Resources Asset Management Plan 2020 - 2030

CITY OF MARION

CONTENTS

REFERENCES

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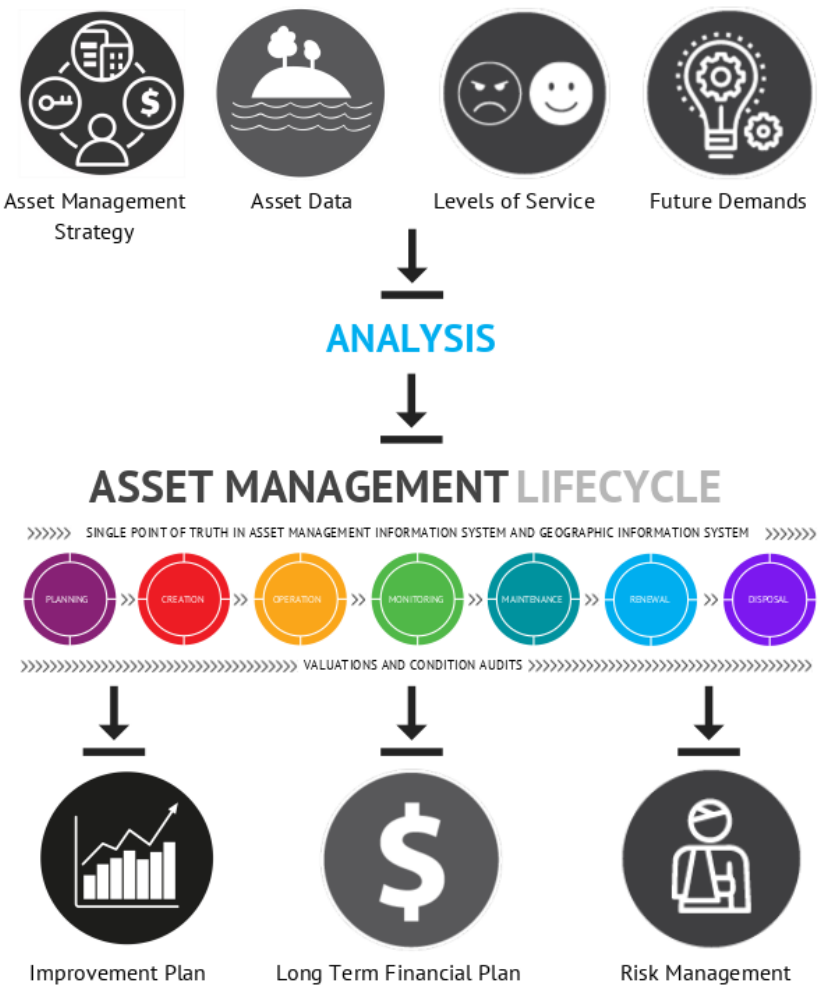


1 - INTRODUCTION

What is this plan about?

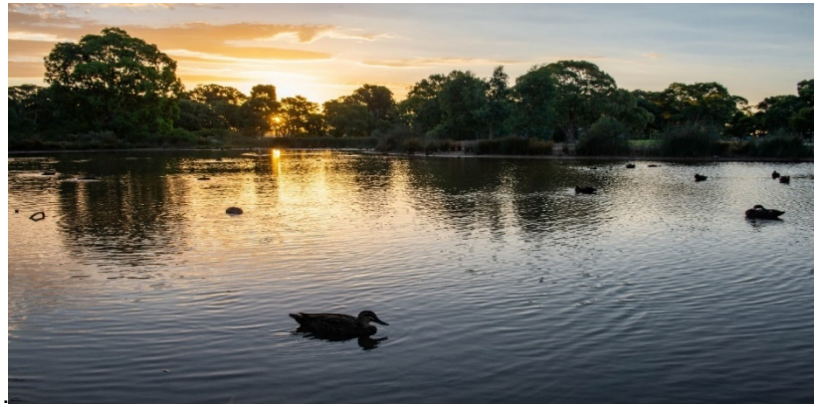
This Asset Management Plan (the Plan) defines the water resources, treatments and customer focused water services we provide, how they are provided, and the funding required to deliver water treatment and resource programs over 10 years.

This Plan is a first step towards improved asset management for our water resources. As such several improvements have been identified. In summary, the newer the asset class the better understanding of the cost to manage the asset, due to the higher confidence in the data used to drive the Plan. This is as expected and typical of Asset Management Plans. Future versions of this Plan will be informed by the improvement actions identified.

The City of Marion uses a range of water treatments and resources assets to maximise water harvesting capacity and improve water quality across the City. Council also aims to reuse alternative water, as well as minimising the use of potable water.

The Plan focuses on the following:

- **Oaklands Aquifer Storage and Recharge** (ASR) scheme, including the Recycled Stormwater Distribution Network.
- **Wetlands, Rivers and Creeks** Wetlands (including Warriparinga and Glade Crescent), Rivers and Creeks within Marion.
- **Water Sensitive Urban Designs (WSUDs),** detention/retention basins, raingarden and tank storage.
- **Groundwater Bores** (and conveyance pipes).



Oaklands Wetlands at Sunset

The wetlands are a “water farm” capable of treating up to 400ML of stormwater per year.

Treated stormwater is stored underground in the natural aquifer, providing a reservoir for summertime irrigation demands within the City of Marion

What is asset management?

Asset management is about how assets are 'looked after', both on a day-to-day basis (maintenance, monitoring and operation) and in the medium-to-long term (planning, creation/purchase, renewal and disposal).

What will we do?

A significant part of Council's annual spend is devoted to the repair, maintenance and upgrade of the assets which deliver safe and sustainable services to the community. Council will continue to invest in these assets as cost effectively as possible while considering beneficial advancements in technology. Our management of our Water Resources demonstrates the benefits of using well established and proven technologies and practices whilst investing in relatively low risk innovation to deliver best practice.

This Plan has been aligned with Council's Asset Management Policy (2018) and Asset Management Strategy (2019). Any upgrades or new asset expenditure will require Council approval and or prioritisation based on community needs.

Council recognises that climate change is likely to affect asset life and functionality. The management of our water resources assets ensures Council is an environmentally sustainable champion and that our assets are more resilient to climate change.

What can you do?

Better understanding of community needs can help Council improve user experience, attract more users and inform decision making in providing services more efficiently. Council has identified this as an area for improvement regarding Water Resource Management. An action to develop targets for community levels of service has been incorporated into the Improvement Plan.

Council would encourage feedback on the issues raised in this plan and suggestions on how we may change or reduce the mix of services to ensure that the appropriate level of service can be provided to the community, within available funding.

2- EXECUTIVE SUMMARY

WATER TREATMENT AND RESOURCES ASSET MANAGEMENT PLAN — EXECUTIVE SUMMARY

Assets covered by this plan

Oaklands Wetlands Aquifer Storage and Recharge Facility / Distribution Network - Gross replacement cost $7.65M
Wetlands, Rivers and Creeks - Gross replacement cost $6.40M
Water Sensitive Urban Designs - Gross replacement cost $5.01M
Groundwater Bores - Gross replacement cost to be identified during 2020/21

Reliable to uncertain asset data

What it will cost over the 10-year planning period

Operation	$3.97M
Maintenance	$3.12M
Renewal	$3.68M
Total	$10.77M

Levels of Service

- Comply with all relevant Acts, Legislation and Standards.
- Comply with all Permits, Licences, Authorisation and Codes of Practice.
- Perform duties within Council Delegations.
- Operate in accordance with manufactures instructions and maintenance manuals.
- Deliver on community expectations within allocated budgets.

Funding levels are sufficient to continue to provide identified Community Levels of Service.

Risk Management

Detailed Risk Assessment and Risk Register.

Funding levels are sufficient to continue to manage risks.

Future Demands managed through ongoing monitoring

- Environmental Sustainability and drought response.
- Grant Opportunities, Technology and Improvement Initiatives.
- Legislation including State-led Water Allocation Plans.
- New Customers, Scheme Expansion and New Distribution Network.

Improvement Plan

- Improve data confidence.
- Integrate asset and financial management systems.
- Create a depreciation and fixed/variable cost model.
- Develop a Long-Term Financial Planning model.
- Develop Annual Replacement/Renewal Program and increasing level of detailed budgeting.

3 - WHY WE NEED A PLAN

"Good asset management is critical for a high-performing Council. Investing in People, Data, Process and Systems enables effective and informed decision-making and optimises community outcomes" Brendon Lyons, Unit Manager Asset Solutions

The Asset Management Framework aligns Council's asset portfolio to meet the service delivery needs of our community.

Council's purpose is:

To improve our residents' quality of life; continuously, smartly and efficiently

The City of Marion Asset Management vision is:

To maintain our assets to agreed levels of service which maximise community value throughout an asset's life

Supported by four Strategic Objectives:

1. **MAXIMISE COMMUNITY VALUE**
2. **DELIVER AGREED LEVELS OF SERVICE**
3. **INFORMED DECISION MAKING**
4. **OPTIMALLY MANAGED**

This Plan is a dynamic document reflecting and responding to changes over time. It is based on the format recommended in Section 4.2.6 of the *International Infrastructure Management Manual* (IPWEA 2015).

This Plan is driven by the priorities of Council's Strategic Plan, the Asset Management Policy and Asset Management Strategy. Furthermore, it is driven by the Water Business Unit. It is treated as a single point of reference and source of truth regarding managing our Water Resources. Subsequent versions of this Plan will be informed via the Improvement Plans identified when preparing this Plan and as Council implements a new IT Platform for future asset management. This will result in improved granularity of data, comprehensive, accurate and complete asset registers and improved short and medium-term financial management.

Areas for improvement in identifying, valuing and maintaining assets within the Water Business have been identified. Historically, this resolution was unclear as assets have been managed across several Departments within Council and across general budget lines. The Plan now captures our Water Resources as a single entity, enabling the opportunity for holistic, fully funded, efficient management of our Water Resources.

The City of Marion aims to become a 'Water Sensitive City'. We seek to harness the potential of storm water to overcome water shortages and reduce urban temperatures, improving waterway health and the landscape of our City.

This Plan treats stormwater as a resource, from which 'value' can be extracted, whilst exploring every opportunity to minimise adverse impacts that stormwater can create. The management of stormwater to minimise flood risk and to comply with legal requirements is covered within Council's Stormwater Management Plans and within the Stormwater Asset Management Plan.

Implementation of the Plan is funded by the Long-Term Financial Plan and Annual Business Plan.

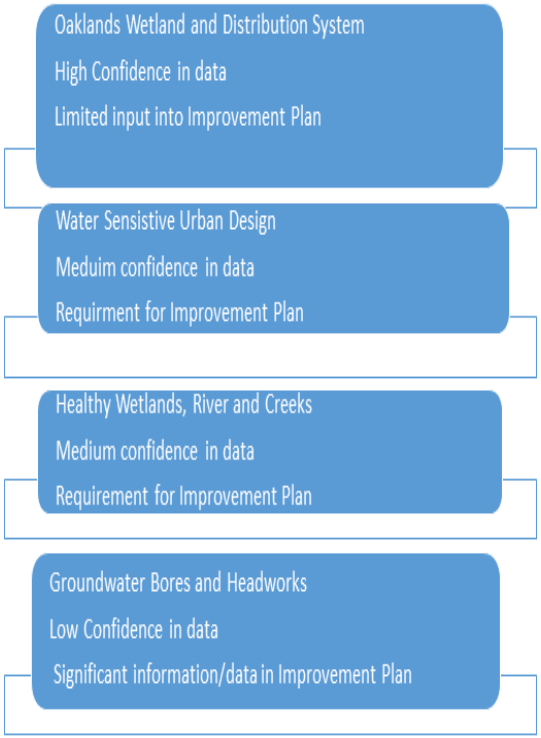
The effectiveness of the Plan is measured annually through the following key performance indicators:

KEY PERFORMANCE INDICATOR
Asset Renewal Funding Ratio Calculated by measuring capital expenditure on renewal and replacement of assets relative to the Asset Management Plan required expenditure. This indicates whether Council is renewing or replacing existing non-financial assets in accordance with its future Asset Management renewal requirements.
Asset Management Maturity Assessment Assessed against the Institute of Public Works Engineering Australasia (IPWEA) National Asset Management Strategy (NAMS) targets. The maturity scale builds from 1 - Aware to 3 - Core Maturity to 5 - Advanced Maturity.

4 - WHAT ASSETS WE HAVE

Assets exist to meet community needs and support the delivery of services to the service levels adopted by Council. Council owns all its water treatments and resources assets, except for some reaches in Creeks and Rivers.

Defined Scope of Plan



	Quantity	Replacement Value (effective May 2020)	Average Age	Useful Life
Oaklands ASR Scheme and Distribution Network	1	$7.65M	30 years	Varies according to class of asset.
Wetlands, Rivers and Creeks	23main wetlands and approximately 24 km of water courses	Future costs for natural assets are to be calculated in relation to erosion and general maintenance issues. Valuation data for known assets $6.4M (Warriparinga & Glade Wetlands) Lucretia Way Wetland due to constructed in 2020/20 at a cost of $1.2M	Varies	Depending upon level of engineering control/service level set.
Water Sensitive Urban Design (WSUD) Infrastructure	75 site locations, numerous WSUD per site.	Valuation data for known assets $5.01M. Most WSUD are identified in the asset register, although some gaps exist. Further work on costings is required in the Improvement Plan	Varies	Depending upon level of engineering control/service level set.
Groundwater Bores and Headworks/pipes	13 including the following components. • Bore Well • Bore Lining • Bore Electrical Head-works • Bore Pump • Bore Pipe	Only a few G/W wells are identified in the asset register. Further work is required to improve the data and costings. Valuation data for all assets is not understood at this time.	Varies	Depending upon level of engineering control/service level set.

Data Quality

Currency and accuracy of asset data is critical to effective asset and financial management. Data confidence is classified on a 5-level scale:

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

Following a data cleanse, data confidence is assessed as reliable (confidence grade B) for the Oaklands ASR Scheme. Data confidence is assessed as (confidence grade C) for all other assets within this Plan. A Data Quality Improvement Plan action has been identified to provide further focus on whole of life asset management for Council's WSUD assets and Groundwater Infrastructure.

Increased focus on asset management of River and Creeks is required. Historically, these assets were managed in the general portfolio of assets within several Departments within Council, without dedicated costings that were linked to valuation or asset condition.

All figures in Council's Asset Management Plans are in present value (today's dollars) as a number of factors influence the indexation rates. When incorporating the figures into Council's Long Term Financial Plan, relevant indexations linked to the type of expenditure will be applied.

5 - LEVELS OF SERVICE

Water Treatment and Resources assets enable Council to deliver services to the community and our customers. Current levels of service and target areas for improvement have been documented through clear and defined asset management business processes for each asset class assigned to this Asset Management Plan.

Community Levels of Service

The following table demonstrates how the assets assist in achieving Community Levels of Service.

Community Level of Service		Achieved By
Safety	No preventable injuries	Applying the hierarchy of hazard controls to designs to ensure hazards are eliminated, or where that is not reasonably practicable, are effectively controlled. Safety in Design approach is used during planning. Assets are risk assessed to ensure safe use within the community, and by contractors, staff and visitors. Experienced and competent workforce (internal and contracted).
Quality	Operational requirements are safely and effectively met.	Assets are managed and maintained to best practice industry standards. Typically, this is measured by: • Customer Events (CES) Reports. • Programmed inspections/maintenance and asset condition assessments. • Annual internal/external water demands planned and quantified in advance. • Regular meetings to discuss actuals vs. forecast. • Application of public procurement practices. • Excellent Contract Management. • Internal and External audits
Function	Provide sufficient assets to meet Levels of Service	Specification for assets meets service level requirements, safety standards and fit for purpose criteria assessment. Council Standards and Specifications for works. Provision of environmentally and economically effective water resources and infrastructure network.
Capacity	Assets are designed to cater for current demand	Modular design and construction of systems, infrastructure and procedures. This future-proofs machinery, plant and equipment, along with supporting systems of work to respond to changing legislative environments and commercial opportunities. Assets are only built and operated when required, reducing capex and operating expenditure until it is required. Useful life is increased by not having stranded or assets not used.
Sustainability	Operational requirements are safely and effectively met, whilst minimising impact on the environment	The natural environment is recognised and valued. Council invests in ground and surface water protection, enhancing streetscape by incorporating rain gardens and other WSUD and our significant wetlands. Groundwater injection and extraction systems are managed under strict operating conditions. Compliance with permits/licenses is considered essential.

Council uses a range of activities to engage with the community and stakeholders on these services, such as Social Media, Community Workshops and Meetings, Education Services, website and via our Elected Members. The Improvement Plan includes an action to investigate the feasibility of adding additional questions to Council's future Community Satisfaction Surveys.

Technical Levels of Service

Technical levels of service determine the allocation of resources to service activities to best achieve the desired community outcomes and demonstrate effective performance throughout an asset's lifecycle. Council manages and operates assets at the agreed Levels of Service while managing whole-of-life costs to ensure the best value for resources used.

The following table demonstrates the Technical Levels of Service for Water Treatment and Resources assets.

Technical Level of Service	Achieved By
Planning in line with Asset Management policy principles and an optimal 10 year asset replacement program	Assets planned through the development and eventual Council endorsement of "opportunity specific" business cases. Business as usual for Oaklands wetland complies with the S48 Report for Water Resources and other relevant Council Resolutions. Assets are provided to meet design standards where these are available. Annual Renewal Budget developed, and Long-Term Financial Plan updated.
Creation of the asset subject to a business case assessment which sets out capital requirements, whole of life costs and predicted utilisation	Assets created to improve or upgrade a level of service through annual review. All procurement follows the City of Marion Procedure with asset specification and business requirements defined and General Ledger Fixed Asset Control Accounts updated.
Operation of an asset in the manner it was designed to be used for	Safe Work SA's Code of Practices followed. Service schedules are based on manufacturer and technical standards. Routine planned maintenance. Reactive maintenance. Some assets are managed to failure (bore pumps). Asset modification/enhancement may be considered to deliver added value/innovation.
Monitoring utilisation and recording asset downtime	Hours run reports. SCADA logs and environmental data sets collected and reviewed within Environmental Database. Monthly and annual Reporting. Annual calibration.
Maintenance of assets in line with a long-term asset sustainability index averaging 95-100%.	Quick response time to repair and maintain via contractors. Regular repair / upgrade to maintain structural integrity and safe systems of work.
Renewal in accordance with optimum replacement timing principles based on whole of life costs	Assets renewed through Replacement Programs. Annual Replacement Program Budget developed, and Long-Term Financial Plan updated.
Disposal where the item fails to meet minimum utilisation benchmarks or is no longer required	Complies with legislative requirements including Council's Disposal of Land and Assets Policy.

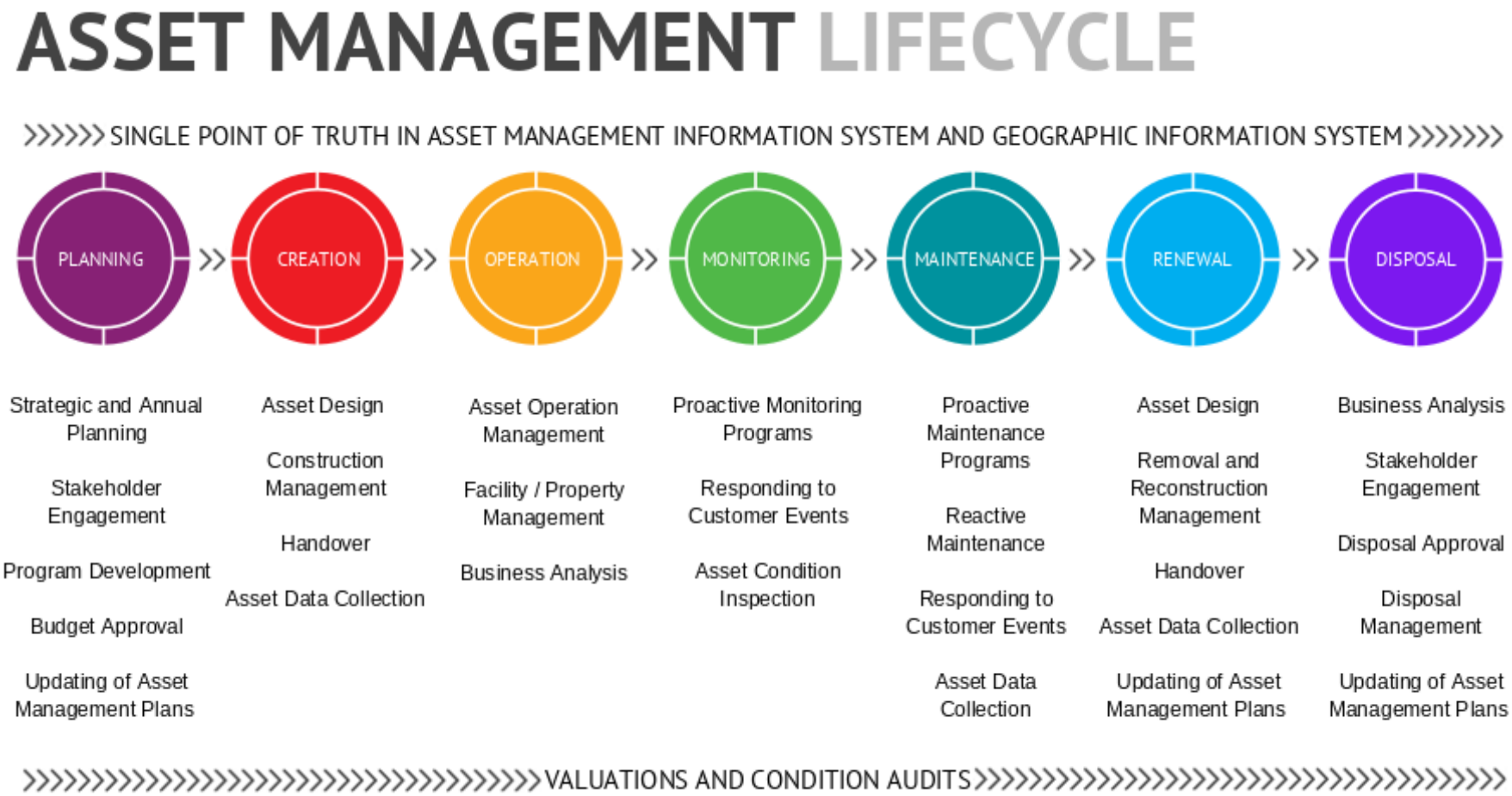
Legislative Requirements

Council considers the following legislative framework in the management of Water Treatment and Resources assets.

Australian Accounting Standards	Set out the financial reporting standards relating to the (re)valuation and depreciation of infrastructure assets
Coastal Protection Act 1972	Establishes Council's responsibility for the day-to-day maintenance of beach and coastal facilities
Development Act 1993	Sets development and building approval and requirements to control stormwater from developments
Disability Discrimination Act 1992 and other relevant disability legislation	Sets the standard for accessibility to eliminate, as far as possible, discrimination against persons on the grounds of disability
Environment Protection Act 1993 (Marine and Water Quality)	Provides guidelines for protection of the environment, related areas and legal obligations relating to stormwater pollution protection
Environment Protection (Water Quality) Policy 2015	Provides the structure for regulation and management of water quality in South Australian inland surface waters, marine waters and groundwaters
Local Government Act 1999	Sets out the role, purpose, responsibilities and powers of local governments including the preparation of a Long Term Financial Plan supported by infrastructure and asset management plans for sustainable service delivery
Local Government (Financial Management and Rating) Amendment Act 2005	Provides impetus for the development of a Strategic Management Plan, comprising an Asset Management Plan and Long Term Financial Plan
Local Government (Stormwater Management) Amendment Act 2007	Establishes the Stormwater Management Authority which facilitates and coordinates stormwater management planning in councils
Natural Resources Management Act 2004	Defines the natural resource management requirement to manage catchments including stormwater
Relevant Australian Standards	Establishes standards relating to requirements to inspect and certify cranes, elevated work platforms and lifting devices
Work Health and Safety Act 2012 (SA)	Provides guidelines for protection of the health, safety and welfare of persons at work

6 - HOW WE PROVIDE THE SERVICE

In simplest terms, asset management is about how assets are “looked after”, both on a day-to-day basis (operation, monitoring and maintenance) and in the medium-to-long term (planning, creation, renewal and disposal).



ASSET PLANNING AND CREATION

When specifying asset requirements, Council seeks to balance a range of factors including:

- Safety requirements by applying the hierarchy of hazard controls to designs to ensure hazards are eliminated, or where that is not reasonably practicable, are effectively controlled.
- Operational needs and functional requirements and where possible seek to identify innovation that may provide for greater level of efficiency or effectiveness in undertaking council's services or reduce risk of downtime.
- Factors that impact on our environment or where the environment may impact on the function or lifecycle of the asset.
- Whole of life costs when making buying decisions.
- Design standards where these are available.

The capital works program is based on an analysis of the drivers for supply, as well as the outcomes of condition appraisals and maintenance plans. Where assets are deemed to be under capacity, in the wrong place, not cost effective, lacking functionality, not maintainable or in poor condition, an injection of capital funds may be required. This Plan quantifies the amount of funding required for capital over the next 10 years as well as identifying areas for improvement that may also need additional funding, pending further analysis.

Future Trends

Political, economic, social, technological, legal, environmental and relationship drivers that may impact future service delivery and use of assets are monitored via Council's environmental scan and corporate risk register.

Council recognises that climate change is likely to affect asset need, useful life and functionality. We are exploring what we can do to build asset resilience in response to climate impacts such as less rainfall overall, more frequent and intense rainfall events, increased frequency and intensity of bushfires, increased temperatures, more frequent and intense heatwaves and increased risk of coastal erosion and flooding as a result of sea level rise. Climate change currently has a high impact on our water treatments and resources assets. We will continue to consider climate change impacts within standard asset replacement processes. The City of Marion Carbon Neutral Plan 2020 – 2030 is currently being developed as a roadmap to reduce carbon emissions from Council operations by 2030.

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

Council has considered the following future demands during development of this asset management plan:

Area	Demand	Impact on services	Demand Management Plan
Political	Political changes and council amalgamations.	Change in services or service levels.	Approved business case and annual review of the Asset Management Plan.
Social	Changing community demographics, needs and expectations.	Change in services or service levels.	Measuring and monitoring community expectation. Communicating service levels and financial capacity with the community to balance asset priorities with what the community is prepared to pay for.
Technological	Being a smart organisation that uses data to drive decision-making.	Drive efficiency through new techniques and practices.	Utilisation based asset maintenance and renewal. Carbon Neutral Plan 2020 – 2030 is currently being developed
Legal	Regulated controls on quality of water discharging into river and marine environment and increased water treatments and resources reuse.	Increase in infrastructure to control pollutants, capture and reuse water resources.	Establish compliance registers for key assets. Assess the compliance requirements and gaps.
Environmental	Reduced rainfall and increased intensity of rainfall events.	Decreasing water supply and increasing demand. Increased onsite and catchment water treatments and resources reuse. Changes to parks and gardens planting due to water restrictions.	Utilisation based asset maintenance and renewal.
Environmental	More frequent intense heatwaves and increased temperatures.	Community demand for a higher level of amenity (particularly irrigated green space) during summer months. Legal need to protect and enhance ground and surface water resource.	Utilisation based asset maintenance and renewal.
Environmental	Erosion and flooding of coastal areas due to sea level rise.	Impacts on coastal environment, reduction in water treatments and resources overfall capacity, water treatments and resources capture and reuse infrastructure.	Utilisation based asset maintenance and renewal.
Relationships	Collaboration between Cities of Marion, Holdfast Bay, Mitcham, Unley, West Torrens, Charles Sturt and Port Adelaide Enfield.	Shared responsibility for catchment management. Ability to deliver services at a higher operational level. Flood mitigation/Regional stormwater harvesting potential. Improved understanding of costs and capacity to test and maintain current community levels of service.	Adopt best practice principles across all three councils to deliver best value. Deliver Stormwater Management Plans. Continue to analyse the cost of providing service and the capacity to fund at the current level of service.

ASSET OPERATION, MONITORING AND MAINTENANCE

Council operates and maintains assets to provide the defined level of service to approved budgets in the most cost-efficient manner. Water Treatment and Resources assets provide opportunities for recreation, environmental, social and amenity outcomes. Using wetlands to treat stormwater for reuse enables multiple outcomes, such as recreational activities like walking and cycling, picnics, bird watching and species diversity and abundance.

Operation includes the costs and activities to maintain the operation of an asset e.g. electricity costs to power pumps, insurance premiums, depreciation, fuel and staff costs. Maintenance programs are normally focused on industry best practice, legislative requirements and design specifications.

Proactive or planned maintenance is work that is identified and managed through a maintenance management system. Activities include inspection, undertaking scheduled servicing, assessing the condition against failure/breakdown, prioritising of works, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

Reactive or unplanned maintenance is reactive repair work which is carried out in response to failure of an asset e.g. breakdown, accidental damage, safety repairs (non-scheduled servicing) etc. Assessment and priority of reactive maintenance is undertaken by staff assessing risk, using experience and sound judgement to minimize downtime.

Year	Operations and Maintenance Budget ($000)
2020/21	$709
2021/22	$709
2022/23	$709
2023/24	$709
2024/25	$709
2025/26	$709
2026/27	$709
2027/28	$709
2028/29	$709
2029/30	$709
Total	**$7,090**

The cost profile for the Oaklands ASR Scheme is based on the current business as usual model. This assumes current supply volumes are maintained for the duration of the planning period. In the event new demands are identified, a Business Case will be presented to Council. The intent is to ensure, as a minimum, the extra supply costs are charged out, to deliver income or a cost neutral position for Council.

Operations expenditure is impacted predominantly by depreciation costs, with power costs contributing significantly. Regarding the high-power costs for Oaklands ASR scheme, Council has approved additional solar panels at City Services to off-set future electricity costs at Oaklands, once pay back periods expire.

Proactive maintenance work is estimated at 80% of total maintenance expenditure. Current maintenance expenditure levels are not considered to be adequate to meet required service levels for some asset classes within the scope of this plan. Funding gaps were identified as part of the financial analysis of the water resources portfolio. Improvement actions have been identified.

The forecast operating and maintenance costs are a first cut analysis that collate all costs of all asset classes considered in this plan. Outcomes from the Improvement Plan process will, in future versions of this Plan, update these numbers with greater certainty. For example, costs will be identified to operate assets not currently on the valuations register.

They include the salary of the Water Resource Coordinator, who is responsible for all asset classes covered in this Plan. Future versions of the Asset Management Plan will allocate percentages of the salary and other overheads to specific asset classes within the plan for improved cost management. This higher resolution cost allocation process is identified as an action within the improvement planning process.

Council assesses the condition of its Water Treatment and Resources assets through a range of planned activities including:

- Routine visual inspections.
- Maintenance Reports.
- Safety and Operational Audits.
- Valuation inspections.

Condition is measured using a 1 – 5 grading system

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

Repairs are undertaken as and when identified. Some asset classes such as bore pumps are managed to failure. Asset Condition Assessments are required for some asset classes within the Plan. This need will be covered via the improvement plan process.

ASSET RENEWAL AND DISPOSAL

Renewal expenditure is major work which does not increase the asset's design capacity 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 upgrade/expansion or new works expenditure resulting in additional future operations and maintenance costs. Council will plan capital renewal projects to meet level of service objectives and minimise infrastructure service risks.

The capital renewal program is based on an analysis of the drivers for supply, as well as the outcomes of condition appraisals and maintenance plans. Where assets are deemed to be under capacity, in the wrong place, not cost effective, lacking functionality, not maintainable or in poor condition, an injection of capital funds may be required. No significant asset has been identified to be suitable for disposal under this plan.

Asset renewals are generally on a like-for-like basis, with normal capability and capacity being replaced. The costs will be accommodated in the Long-Term Financial Plan and are summarised below:

	***Projected Capital Renewal and Replacement Expenditure* ($000s)**										
	2020/21	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**	**Total**
Wetlands, Rivers and Creeks	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$2,000
Warriparinga Pond Edging			$40								$40
Lucretia Way Wetland (Improvement to existing, detention basin. Note, fully funded from within Stormwater Budget)	$1,200										$1,200
Hugh Johnson Reed bed / Macrophyts from Detention basin			$34								$34
Cove Road Reed bed / Macrophyts from Detention basin on			$41								$41
South Road Reed bed / Macrophyts from Detention basin				$41							$41
Oaklands Distribution pump1				$40							$40
Oaklands Distribution pump 2					$40						$40
Warriparinga New Bore and			$150								$150
Oaklands Distribution pump 3								$40			$40
Oaklands ASR 3 Groundwater Pump								$30			$30
TOTAL	**$1,4200**	**$200**	**$465**	**$281**	**$240**	**$200**	**$200**	**$270**	**$200**	**$200**	**$3,656**

7 - RISK MANAGEMENT

Risk management provides a process for the selection of treatment plans and management actions to protect the community against unacceptable risks. Risk assessment identifies credible hazards, the likelihood of the hazard event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery from Water Treatment and Resources assets, using Council's risk matrix, has identified the hazards that will result in significant loss, 'financial shock' or a reduction in service:

Hazard	Current Controls	Current Rating	Further Actions	Forecast Rating
Asset failure resulting in significant adverse environmental impact	Appropriate Procurement and Contract Management practices. Experienced, competent staff and contractors. Safety in Design. Maintenance manuals comply with best practice and manufacturers standards. Asset Inspections and testing. Risk Assessments	Medium	Tracking innovation and best available techniques. Lessons sharing via Managed Aquifer User Group. Legal horizon scanning.	Low
Operator failure resulting in significant adverse environmental impact	Experienced, competent staff and contractors Asset inspections and testing Planned Maintenance	Medium	Integrate asset management plan with environmental management plan, reviews and audits.	Low
Asset service below technical and community levels of service	Near miss report Customer Events Asset Inspection and testing Regular planned maintenance	Medium	Integrate asset management plan with environmental management plan, reviews and audits	Low
Asset not managed in an environmentally sustainable manner	Power Supply Contract Solar Offset project (located at City Services). Night time irrigation supply, Aquatic and bankside vegetation control Fish Management Water Level/pressure/quality Monitoring and reporting	Medium	Adequate relevant on-going training and education. Mar User Group lessons learnt Continuation of applied research	Low

Critical assets are those which have a high consequence of failure causing significant loss or reduction of service. Investigative activities, condition inspection programs, maintenance and capital expenditure plans can be targeted at the critical areas. Activities may include increased inspection frequency and higher maintenance intervention levels.

Critical assets and the impact on service delivery have been identified as follows:

Critical Asset(s)	Impact of Failure / Service Deficiency
The Oaklands Wetlands Aquifer Storage and Recovery Scheme is considered holistically as a critical asset. It is designed, built and operated to deliver a sustainable alternative source of water. Historically a significant number of parks and gardens/ovals and bowling greens were irrigated using potable water.	Higher Costs to irrigate Public Open Space. Pollution of Groundwater Resource. Reputation and Political risks.
Groundwater Bores and conveyance pipes.	Higher Costs to irrigate Public Open Space. Pollution of Groundwater Resource. Reputation and Political risks.
Wetlands, Rivers and Creeks	Higher Costs to irrigate Public Open Space. Pollution of surface water Resource. Reputation and Political risks.

A variety of risk management actions are undertaken to eliminate/minimise the potential impact on Council's services including:

- Adopting additional inspection, testing and maintenance activities associated with these critical assets.
- Assessment of required service level expected by community.
- Improved Valuation data.
- Increased level of understanding of whole of life costs.

8 - WHAT IT WILL COST AND HOW WE WILL PAY FOR IT

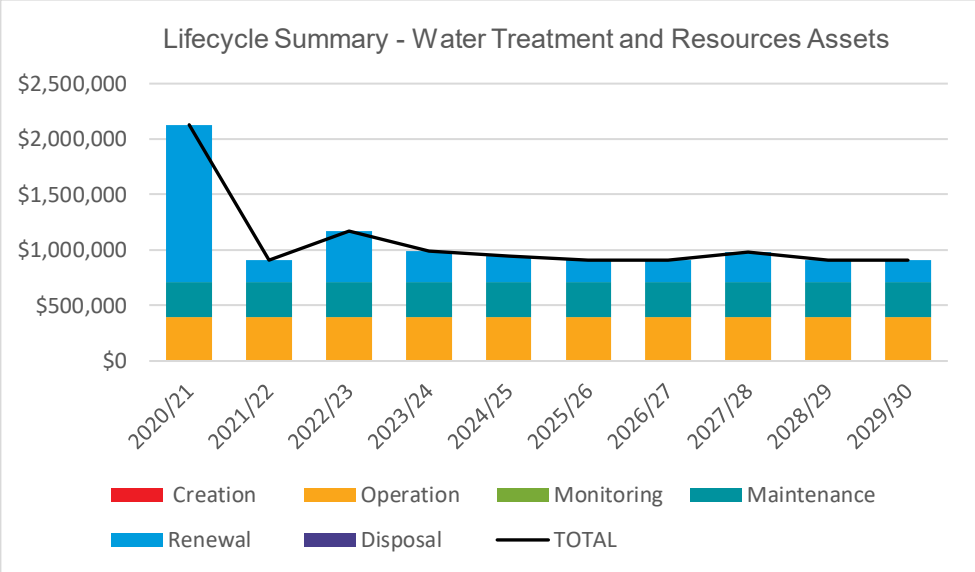
Financial Statements and Projections

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

This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

The improvement plans will increase the registered assets within the scope of this plan. The valuation data will record new assets and new balance sheet costs. The increased identified costs will be incremental and managed so ensure no shocks to the systems. Valuation data will be progressively improved over several years. Bottom up budgeting will smooth budget curves and savings will be identified through efficiencies and economies of scale.

Funding Strategy



This Asset Management Plan identifies the projected operations, maintenance and capital renewal expenditures 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.

All figures in Council's Asset Management Plans are in present value (today's dollars) as a number of factors influence the indexation rates. When incorporating the figures into Council's Long Term Financial Plan, relevant indexations linked to the type of expenditure will be applied.

These figures will be revisited with each iteration of the Long Term Financial Plan.

Lifecycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Lifecycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life-cycle cost covered in this Plan include the operating and maintenance component of **$0.763M.** per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

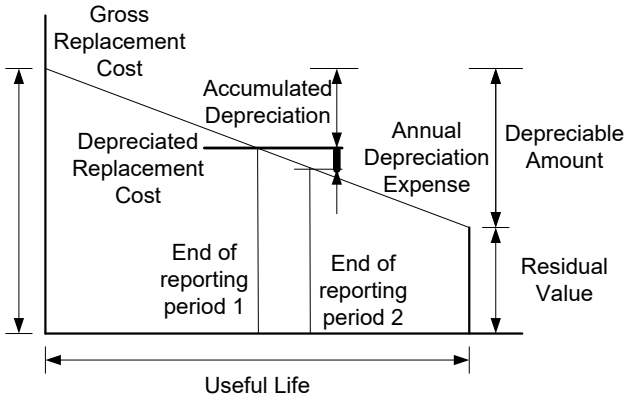
Lifecycle costs can be compared to llife-cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Lifecycle expenditure includes operations, maintenance and renewal expenditure. Lifecycle expenditure will vary depending on the timing of asset renewals. The Lifecycle expenditure over the 10-year planning period is **$10.77M** (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

The matching of lifecycle cost to lifecycle expenditure gives asset renewal of 100% to maintain the service potential of the assets at year 10 as it was at year 1.

In the future, the Asset Renewal Funding Ratio will be calculated at Asset Management Plan level to better understand service delivery sustainability

Valuation Forecasts

The value of assets recorded in the asset register at 30 June 2019 covered by this asset management plans is shown below. As assets are replaced regularly in line with Council's 10-year Water Treatment and Resources Replacement Program, the purchase price recorded on the asset register is adequate. If any significant changes are required to the registers these are made accordingly.



Gross Replacement Cost	**$19.06M**
Depreciable Amount	**$19.06M**
Depreciated Replacement Cost (Written Down Value)	**$15.07M**
Annual Average Asset Consumption	**$0.27M**

Rate of Annual Asset Consumption - Average **2%** due to long lived assets (Depreciation/Depreciable Amount)
Rate of Annual Asset Renewal is **greater than 100%**

Capital renewal expenditure vs depreciation is an interesting exercise as many assets are long lived assets and have minimal depreciation (2%). Asset renewal is a better guide of true cost of holding assets as some major items will not be replaced in one 10-Year cycle. Other significant assets do require renewal within the 10-year cycle.

In 2020 Council will renew assets at **>100%** of the rate they are being consumed and will be increasing its asset stock by **0%** in the year.

The table below details the key assumptions made in presenting the information contained in this Asset Management Plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates.

Key Assumptions	Risk of Change to Assumptions
The data is based on valuation information rather than specific condition data so renewal estimates may not be accurate	Medium
The Long Term Financial Plan will not change over the planning period	Medium
Carbon Neutral Plan may impact asset planning and renewal evaluation criteria	Medium
Climate Risk Assessments may impact asset useful lives	Low
Community level of service expectations remain consistent	Low
No significant changes in legislation	Low
Plant and equipment are replaced on a 'like for like' basis	Low
Plant and equipment are replaced based on meeting utilisation thresholds	Low
The materiality threshold for plant and equipment is $10,000.	Low
Assets should have a useful life of greater than one year in order for the expenditure to be capitalised and have a value above a Materiality Threshold. Any expenditure considered to be Capital must also pass a materiality test. Materiality levels are set so as not to misstate Financial Statements and to provide a guide whether it is practical from an Administrative perspective that expenditure is capitalised.	Low
Networked/Aggregate Assets - Expenditure can still be capitalised on items that fall below materiality thresholds individually but operate together as a cohesive whole to form a substantial/significant total value. Examples are the Computer Network, Library Books, and Reserve Furniture.	Low
The new asset management system will be able to capture operations and maintenance costs to better manage the overall expenditure	Low
Operation and Maintenance costs for new assets will be consistent with the operation and maintenance costs of existing assets	Low

9 - WHAT WE WILL DO NEXT - IMPROVEMENT PLAN

	Task	Responsibility	Timeline/Frequency
1	Review and revise chart of accounts to facilitate consistent and accurate cost allocation for all asset expenditure aligned with the Asset Management Lifecycle.	Manager Finance	Ongoing
2	Ensure asset handover process is utilised to ensure asset acquisition, upgrade, renewal and disposal is captured and communicated to maintain the Asset Management Information System.	Asset Owner – Manager, Engineering, Assets and Environment	Ongoing
3	Oaklands Wetlands ASR Scheme; provide greater resolution in Asset Register/Valuation sheet, whole of life cost model, cash flow and Business Analyst Tools.	Asset Owner – Manager, Engineering, Assets and Environment	June 2021
4	Reconcile all WSUD assets within Valuation Sheet and Operational Maintenance inventory. Assign values for maintenance and replacement, and asset useful life and residual value. Create a depreciation and fixed/variable cost model.	Asset Owner – Manager, Engineering, Assets and Environment	June 2021
5	Investigate options to conduct Climate Risk Assessments for City of Marion assets and the forecast impacts on asset useful lives.	Unit Manager Asset Solutions	June 2021
6	Reconcile all Groundwater Bores/Headworks assets within Valuation Sheet and Operational Maintenance inventory. Assign values for maintenance and replacement and asset life/residual value. Create a depreciation and fixed/variable cost model.	Asset Owner – Manager, Engineering, Assets and Environment	June 2021
7	Investigate opportunities to integrate with Carbon Neutrality Plan to map out how the City of Marion Water Resource Assets can reduce carbon emissions for Council operations by 2030.	Asset Owner – Manager, Engineering, Assets and Environment	June 2021
8	Develop targets for community levels of service	Asset Owner – Manager, Engineering, Assets and Environment	June 2021
9	Revise valuation procedures and valuer briefing to better reflect needs of Asset Management Planning cycle	Unit Manager Asset Solutions	June 2021
10	Investigate feasibility of adding additional questions of Council's future Community Satisfaction Surveys	Unit Manager Asset Solutions	June 2021
11	Explore alternative asset management systems (as part of council's Digital Transformation initiative) to monitor servicing schedules, record maintenance activities undertaken, and impacts of asset downtime.	Unit Manager Asset Solutions	June 2021 (highly dependent on other factors)
12	Undertake annual review of Asset Renewal Funding Ratio for asset class to ensure assets are being renewed as they are consumed (Ratio of 1.0)	Unit Manager Statutory Finance and Payroll	June 2021 then annually

	Task	Responsibility	Timeline/Frequency
13	Annual review of KPIs and benchmarks aligned to Asset Management Strategy	Unit Manager Asset Solutions	June 2021 then annually
14	Update this Asset Management Plan during annual budget planning processes to show any material changes in service levels and/or resources available to provide those services as a result of budget decisions.	Asset Owner – Manager, Engineering, Assets and Environment	November 2021 then annually
15	Reconcile all Wetlands, River and Creek assets within Valuation Sheet and Operational Maintenance inventory. Assign values for maintenance and replacement and asset life/residual value. Create a depreciation and fixed/variable cost model.	Asset Owner – Manager, Engineering, Assets and Environment	June 2022
16	Develop a Long Term Financial Planning model for the Water Business to consider cost of capital, operations and maintenance, cash flows, Net present values and Return on Investment decision making.	Asset Owner – Manager, Engineering, Assets and Environment	June 2022
17	Annual Replacement/Renewal Program and increasing level of detailed budgeting (bottom up) developed in successive versions of the Asset Management Plan for all asset classes.	Asset Owner – Manager, Engineering, Assets and Environment	June 2022
18	Develop detailed bottom up budgets for all asset classes that identifies Operations and Maintenance costs and pro-active and reactive costs.	Asset Owner – Manager, Engineering, Assets and Environment	June 2022
19	Explore alternative asset management systems to monitor servicing schedules and record maintenance activities undertaken.	Subject Matter Expert – Water Resources Coordinator	June 2024
20	Undertake a full review of this plan at least every four years, within two years of each Council election or any review to Council's Strategic Plan.	Asset Owner – Manager, Engineering, Assets and Environment	November 2024

APPENDIX A - Budgeted Expenditures Accommodated in LTFP

All figures are in present value (today's dollars) as a number of factors influence the indexation rates. When incorporating the figures into Council's Long Term Financial Plan, relevant indexations linked to the type of expenditure will be applied.

Year	Creation	Operation	Monitoring	Maintenance	Renewal	Disposal	TOTAL
2020/21	$0	$397,000	$0	$312,000	$1,420,000	$0	**$2,129,000**
2021/22	$0	$397,000	$0	$312,000	$200,000	$0	**$909,000**
2022/23	$0	$397,000	$0	$312,000	$465,000	$0	**$1,174,000**
2023/24	$0	$397,000	$0	$312,000	$281,000	$0	**$990,000**
2024/25	$0	$397,000	$0	$312,000	$240,000	$0	**$949,000**
2025/26	$0	$397,000	$0	$312,000	$200,000	$0	**$909,000**
2026/27	$0	$397,000	$0	$312,000	$200,000	$0	**$909,000**
2027/28	$0	$397,000	$0	$312,000	$270,000	$0	**$979,000**
2028/29	$0	$397,000	$0	$312,000	$200,000	$0	**$909,000**
2029/30	$0	$397,000	$0	$312,000	$200,000	$0	**$909,000**
TOTAL	**$0**	**$3,970,000**	**$0**	**$3,120,000**	**$3,676,000**	**$0**	**$10,766,000**

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