# Water

# Strategic Asset Management Plan

*April-2018*

Burdekin Shire Council

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| V1.0 | June 2016 | Initial Draft | Mr Ross McPherson - Asset Facilities Management and Consulting (AFMC) - Lead Author<br>Mr Reg Norman - Burdekin Shire Council - Support Author | Mr Kevin Byers - Burdekin Shire Council | |
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| | |
|---|---|
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| **Item No:** | **10.1** |

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# 1 EXECUTIVE SUMMARY

## 1.1 Portfolio Description

Burdekin Shire Council provides potable water supply to the following townships - Alva, Ayr, Brandon, Giru, Home Hill and Mt Kelly.

Groundwater is extracted through a series of 35 boreholes, which undergoes chlorination before entering the water distribution system consisting of 299.5km of water pipelines.

Potable water is supplied to Giru by Townsville Water under a service agreement.

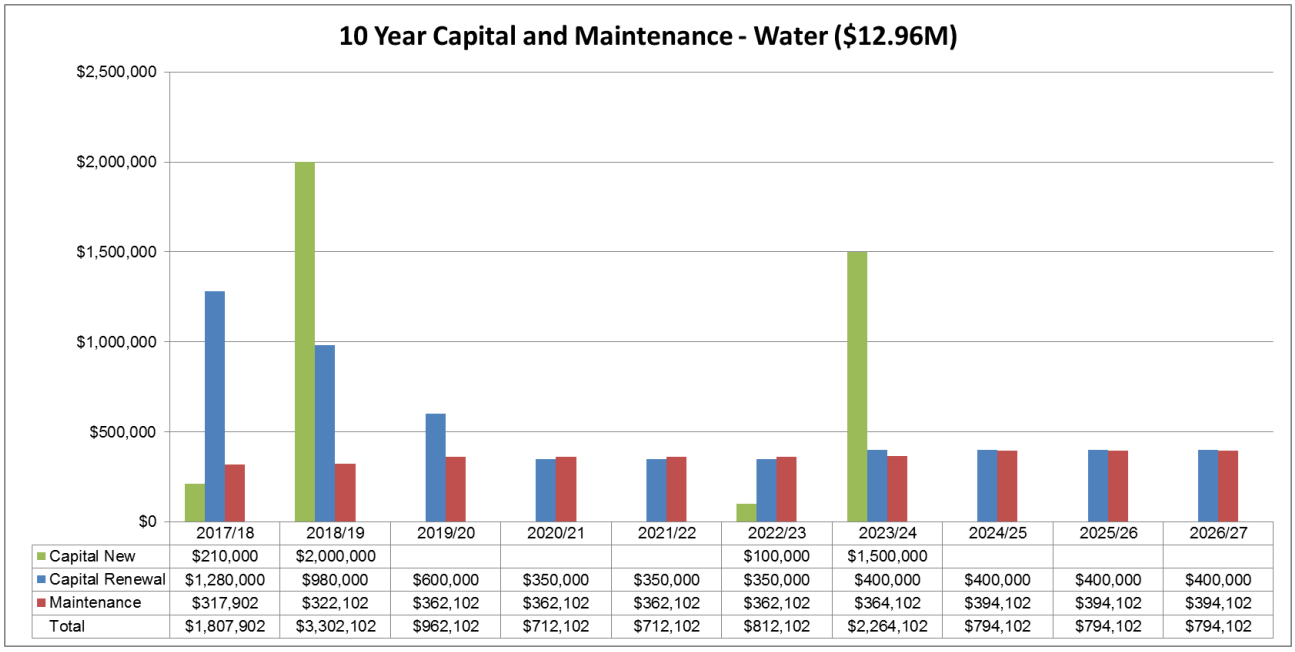
There are 9 water storages using both elevated and ground levels within this system.

The total replacement value of Council's water portfolio as provided in the financial asset register at 30 June 2017 was $41.1M.

## 1.2 Expenditure Forecast

Figure 1.1 provides a summary-level view of Council's planned capital renewal, capital new, and maintenance expenditure over the forecast period.

*Figure 1.1 Capital and Maintenance Forecast*




| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| Capital New | $210,000 | $2,000,000 | | | | $100,000 | $1,500,000 | | | |
| Capital Renewal | $1,280,000 | $980,000 | $600,000 | $350,000 | $350,000 | $350,000 | $400,000 | $400,000 | $400,000 | $400,000 |
| Maintenance | $317,902 | $322,102 | $362,102 | $362,102 | $362,102 | $362,102 | $364,102 | $394,102 | $394,102 | $394,102 |
| Total | $1,807,902 | $3,302,102 | $962,102 | $712,102 | $712,102 | $812,102 | $2,264,102 | $794,102 | $794,102 | $794,102 |

Forecast maintenance expenditure includes an allowance for new capital works undertaken during the previous financial year.

Capital new expenditure is primarily to address iron and manganese levels in raw water and sedimentation/filtration/aeration projects as per the following examples:

- 2018-19 ($2M) Sedimentation/Filtration/Aeration South Ayr - Construction
- 2023-24 ($1.5M) Sutcliffe Estate area construction

Key comparison figures reviewed against the planned capital renewals expenditure are as follows:

| | |
|---|---|
| Planned Capital renewals over the next ten years. | $5,510,000 |
| The cumulative annual depreciation over the forecast period. | $5,790,385 |
| The forecast expenditure generated from the asset register data (remaining life based). | $1,236,190 |

## 1.3 Financial Performance Measures

The following financial performance measures are based on adopting the long term financial plan (LTFP) budget.

*Table 1.2 Financial Performance Measures*

| Performance Measure | This Plan | Previous Plan (2012) |
|---|---|---|
| Asset Sustainability Ratio | 95.2% | 122.8% |
| Future Renewal Funding Ratio | 445.7%. | 73.9% |
| Asset Consumption Ratio | 53.5% | 53.4% |

Local Government Regulation 2012 Chapter 5 - Financial planning and accountability [Section 169] provides key indicators to determine how well a Local Government manages infrastructure assets.

The current target for the Asset Sustainability Ratio as per the Financial Management (Sustainability) Guideline 2013 is 90% (on average over a ten year period).

Planned capital expenditure is 95.2% of depreciation over the forecast period. As such, the planned renewals are keeping pace with depreciation. This indicates the overall lifecycle position of the portfolio is anticipated to be sustained over the forecast period and hence, is responsible asset management.

Appendix A provides a chart showing 50-year long-term renewals forecast generated by modelling software. The financial asset register shows that over the next 10 years $1.2M in renewals is anticipated, and over the next 20 years, $3.3M is anticipated. This information excludes elevated water storage towers at Ayr and Home Hill, which will both undergo a detailed structural engineering assessment to determine revised remaining useful life.

The planned capital works figures indicate Council is aiming to sustain a level of renewal investment that targets alignment with annual depreciation, to avoid more significant investment peaks in later years as ageing pipeline networks become due for renewal.

## 1.4 The Next Steps

The key actions and improvements resulting from this strategic asset management plan are:

- Continue refurbishments works of Elevated Water Towers in Ayr and Home Hill, including stair upgrades and replacement of aerators to extend overall service life of Towers.
- Schedule inspection of Ayr and Home Hill Water Towers by Structural Engineer to determine remaining useful life of Towers.

- Implement risk reduction or management strategy to address identified high-risk plant that has the potential to affect continuity of water supply or quality of water provided.
- Develop and implement a pipeline condition monitoring and replacement program.
- Implement a water leakage investigation program.
- Prepare contingency plans for critical infrastructure.
- Undertake a strategic review of the water supply strategy to ensure service delivery KPI's shall be sustained.

## 1.5 Plan Adoption Date

*This strategic asset management plan was formally adopted by Burdekin Shire Council on 22nd May 2018, Item number 10.1.*

# 2 INTRODUCTION

## 2.1 Purpose

This strategic asset management plan defines Burdekin Shire Council's strategy for the responsible management of its water supply assets in a manner that is compliant with regulatory requirements and is sustainable within available resources. This plan will also be used to communicate any need for additional funding in order to provide the required levels of service.

This plan should be read in conjunction with Council's Executive Level Strategic Asset Management Plan which contains a number of sections describing Council's approach to asset management that is common across all strategic asset management plans.

## 2.2 Overview of this Plan

This plan focuses on providing the following key information to assist long term planning for infrastructure and property assets to support and sustain service standards:

- Portfolio Description – provides an understanding of the current asset base used to deliver services to the community.
- Future Demand – provides an understanding of the current and future changes in demand over the forecast period to allow for the inclusion in financial planning for any growth-related capital works.
- Levels of service and performance – provides the strategic level asset performance targets and current performance to drive required capital or maintenance intervention works.
- Financial Forecasts and Sustainability Measures – provides forecast for both unrestricted and restricted budgets and their resulting impacts and implications regarding the long term sustainability of services standards.
- Asset Management Improvements – provides a listing of known risks, key action items and improvements proposed to enable future versions of this plan to improve accuracy or confidence in the forecasts made.

As mentioned above this plan should be read in conjunction with Council's Executive Level Strategic Asset Management Plan.

## 2.3 Portfolio Description

Burdekin Shire Council provide potable water supply to the following townships - Alva, Ayr, Brandon, Giru, Home Hill and Mt Kelly in four (4) systems

Groundwater is extracted through a series of 35 boreholes, which undergoes chlorination before entering the water distribution system consisting of 299.5km of water pipelines.

Potable water is supplied to Giru by Townsville Water under a service agreement.

There are 9 water storages located at elevated and at ground levels within these systems.

The total replacement value of Council's water portfolio as provided in the financial asset register at 30 June 2017 was $41.12M.

Table 2.1 provides a summary of Council's water assets on the following page.

### 2.3.1 Asset Summary

*Table 2.1 Asset Summary*

| Water Components | Group | Current Replacement Cost | Current Units |
|---|---|---|---|
| **Bores** | Borehole | $644,883 | 35 |
| | Motor | $421,214 | 31 |
| | Pump (above ground) | $575,222 | 32 |
| | Submersible Pump | $55,276 | 3 |
| **Bores Total** | | **$1,696,594** | **101** |
| **Buildings** | Building-Other | $13,081 | 1 |
| | External Services | $24,924 | 15 |
| | Finishes/Fit-Outs | $21,378 | 15 |
| | Fittings | $71,809 | 15 |
| | Roof Sheeting | $19,232 | 15 |
| | Roof Structure | $44,874 | 15 |
| | Services (Elec & Mech) | $80,238 | 15 |
| | Substructure | $79,806 | 15 |
| | Superstructure | $331,062 | 16 |
| **Buildings Total** | | **$686,404** | **122** |
| **Disinfection** | Chlorinator (Liquid) | $67,131 | 11 |
| | Monitoring | $9,420 | 2 |
| **Disinfection Total** | | **$76,551** | **13** |
| **Flowmeter** | Flowmeter | $108,787 | 9 |
| **Flowmeter Total** | | **$108,787** | **9** |
| **General** | Access Rd & hardstand | $20,667 | 1 |
| | Civil Works | $164,091 | 8 |
| | Emergency Generator | $15,159 | 1 |
| | Fencing | $63,019 | 3 |
| | Pipework & Valve | $870,682 | 15 |
| **General Total** | | **$1,133,618** | **28** |
| **High Lift Pumps** | Pump | $156,821 | 7 |
| **High Lift Pumps Total** | | **$156,821** | **7** |
| **Mains** | Delivery | $28,995,578 | 289,442 |
| | Distribution | $673,992 | 10,131 |
| | Filling Station | $21,324 | 2 |
| | Scour injection/extraction point | $184,982 | 6 |
| **Mains Total** | | **$29,875,875** | **299,582** |
| **Pump Sets** | Pump Set | $433,473 | 3 |
| **Pump Sets Total** | | **$433,473** | **3** |
| **Storage** | Elevated Reservoir | $3,198,129 | 3 |
| | Low Level Reservoir | $692,041 | 4 |
| | Low Level Reservoir - Liner | $55,597 | 1 |
| | Low Level Reservoir - 80 Yr Life | $602,170 | 1 |

| Water Components | Group | Current Replacement Cost | Current Units |
|---|---|---|---|
| | Low Level Reservoir - 60 Yr Life | $769,439 | 1 |
| | Low Level Reservoir - Roof | $27,761 | 1 |
| **Storage Total** | | **$5,345,137** | **11** |
| **Switchboard & Electrical** | Switchboard & Electrical | $1,221,721 | 21 |
| **Switchboard & Electrical Total** | | **$1,221,721** | **21** |
| **Telemetry** | Base Repeater | $29,800 | 1 |
| | Station | $209,067 | 13 |
| **Telemetry Total** | | **$238,867** | **14** |
| **Treatment** | Aerator | $153,338 | 7 |
| **Treatment Total** | | **$153,338** | **7** |
| **Grand Total** | | **$41,127,185** | **299,918** |

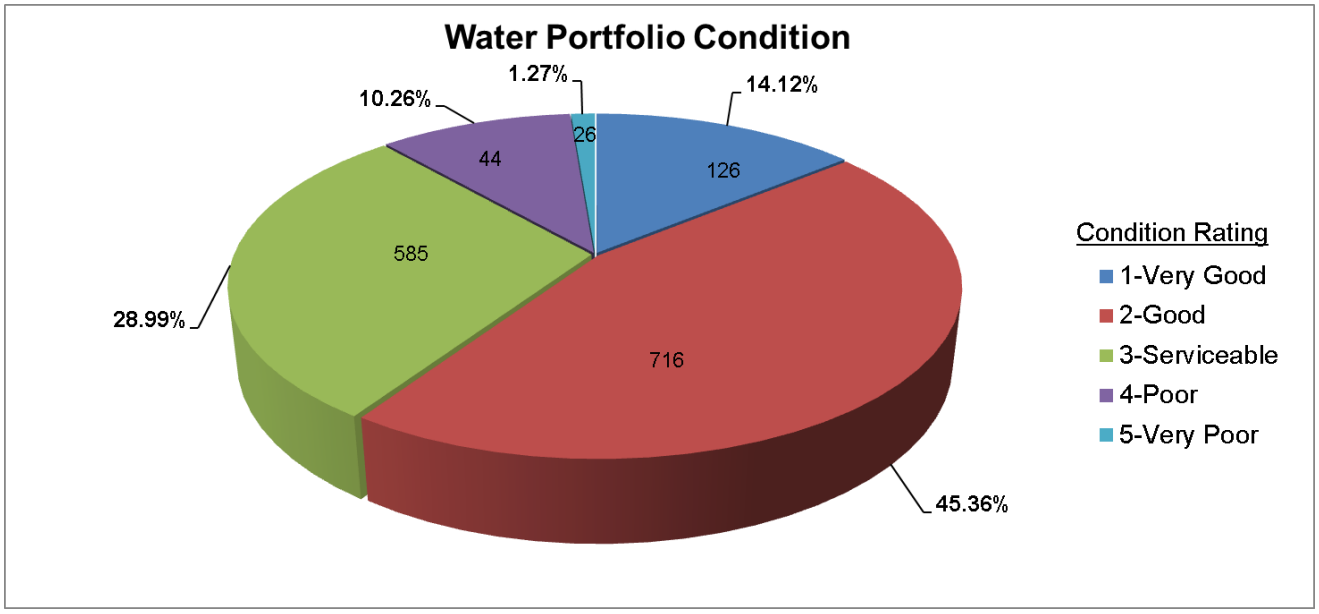
### 2.3.2 Condition Summary

The following table and chart provide an overall view of the condition profile for the water portfolio by value.

*Table 2.2 Condition Summary*

| Condition Rating | Condition Value | No of Assets | Total Replacement Cost |
|---|---|---|---|
| 1-Very Good | $5,808,061 | 126 | $5,808,061 |
| 2-Good | $18,656,132 | 716 | $18,656,132 |
| 3-Serviceable | $11,921,995 | 585 | $11,921,995 |
| 4-Poor | $4,218,534 | 44 | $4,218,534 |
| 5-Very Poor | $522,463 | 26 | $522,463 |
| **Grand Total** | **$41,127,185** | **1,497** | **$41,127,185** |

*Figure 2.3 Condition Pie Chart*




Assets in condition 5 are considered in very poor condition and likely to be scheduled for refurbishment or renewal within the next three years. Assets in condition 4 are approaching the end of their service life and may require refurbishment or renewal within the 10-year forecast period.

As can be seen from the table and chart above, Council has 1.27% of its portfolio ($0.52M) in condition 5. These are primarily boreholes, pumps and motors reaching the end of their service life.

One of Council's key service standards is to maintain the portfolio's overall condition index (OCI) in a condition state of 3.0 or better.

The current OCI of 2.42 is hence still above the target minimum of 3.0.

# 3 FUTURE DEMAND

## 3.1 Demand Forecast

The future demand for services is derived from Council's Priority Infrastructure Plan, soon to be updated to the Local Government Infrastructure Plan as per the Sustainability Planning Act 2009.

The Executive Level Strategic Asset Management Plan describes the growth forecast for Burdekin Shire Council and results indicate little to no growth anticipated over the forecast period.

## 3.2 Demand Management Plan

Council is planning to develop a Demand Management Plan by June 2020.

# 4 LEVELS OF SERVICE

Council has developed Customer Service Standards and relevant targets for both Water Supply and Sewerage services which comply with the requirements of the Water Supply (Safety and Reliability) Act 2008. These standards define the service levels Council provides to its customers and are defined in Council's "Customer Service Standard, Water and Wastewater" (April 2015).

The standards generally address the following criteria,

- Water Quality
- Reliability
- Asset performance and condition
- Customer Satisfaction
- Maintenance

## 4.1 Community Research and Expectations

Investigations to date regarding community expectations and satisfaction levels have been directed towards Council's overall performance rather than performance for this particular asset portfolio.

## 4.2 Community and Technical Levels of Service

Community levels of service relate to how the community (or users) receive the service in terms of safety, quality, quantity, reliability, accessibility and responsiveness to requests.

## 4.3 Conclusions Drawn

Overall the performance measures able to be reported against are performing above expectation.

Water main breaks per 100km is above minimum standard, due to system pressure increases in the Ayr/Brandon scheme to meet higher fire flow requirements. Water mains renewals and a leak detection program are required in order to address this performance measure.

They are planned and will commence during the 2018/19 financial year. This will also address the issue of high water losses in the Ayr/Brandon scheme. It is considered likely pressure increases have caused an increase in failures of hidden infrastructure, as well as increased losses at each point of failure. In conjunction with a mains replacement program, Council will commence a leak detection program in the coming financial years.

# 5 LIFECYCLE MANAGEMENT STRATEGY

The lifecycle management plan details how Council plans to manage and maintain its assets at the agreed levels of condition and service whilst optimising life cycle costs. Council's Asset Management Strategy provides further details on the processes and systems employed to develop this asset class plan.

## 5.1 Renewal/Replacement Plan

Council maintains an asset register of all production, distribution and treatment assets. Assets are typically broken down into component parts for valuation and renewals planning such as:

- Mains – typically individual assets are mains between intersections with other mains and valves, and where diameter and material types change. (While not recorded in the asset register, valves and hydrants are identified separately in GIS).
- Bores – typically divided into boreholes, pumps and motors.
- Switchboards – one asset per switchboard site.
- Storages – typically identified as individual storage assets.
- Treatment - typically identified as aeration or chlorinator assets.
- Other assets including buildings, site works and telemetry.

Each component asset is revalued periodically by external valuers for observable assets, including buildings. Council conducts valuations for remaining water assets, based upon first principles and condition scores that are obtained for observable assets by physical inspections.

Depending upon movement in asset cost indices and materiality thresholds, revaluations will occur for the asset class from time to time. Updated indices data is sourced from suppliers, valuers, and other Councils.

This data is updated into the asset register and then fed into modelling software to generate a draft list of renewal works for the forecast period. The forecast model projects the year each component asset will reach condition score 5 (end of life) in defining the draft renewals forecast.

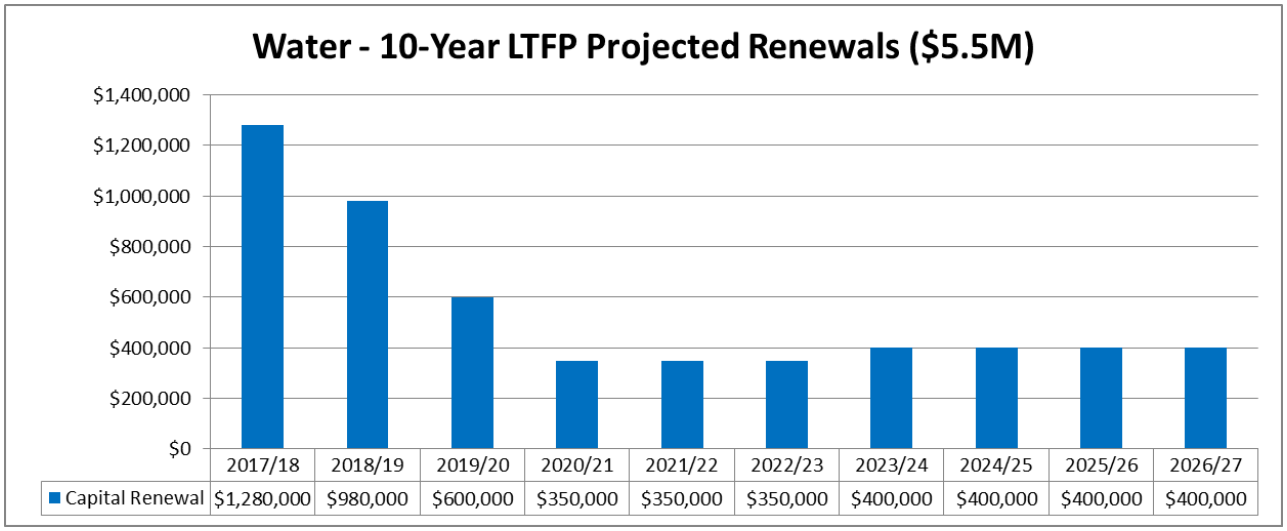
This forecast is provided to the relevant asset manager to assess and make decisions on what projects to be included in the capital bids submission.

### 5.1.1 Forward Capital Renewals Program

Figure 5.1 and Appendix B presents the Long Term Financial Plan (LTFP) capital renewal projects.

Renewal investments vary from year to year but total $5.5M over the 10 year forecast period.

*Figure 5.1 –Water Capital Renewals Chart*




## 5.1.2 Analysis

The current expenditure projection for renewal of water infrastructure is $5.51M over the next 10 years. This places Council in a sound asset management position to sustain the water portfolio in an overall condition above 3.0.

## 5.2 Creation/Acquisition/Upgrade Plan

The following projects have been identified in Council's 10-year Long Term Financial Plan.

*Table 5.4 –Capital Upgrades*

| Fin Year | Description | Project Cost Other |
|---|---|---|
| **2017-18** | Ayr Industrial Estate Expansion Project - Water | $25,000 |
| | Fire Pressure Upgrade Airdmillan Road | $85,000 |
| | Sedimentation/Filtration/Aeration South Ayr - Detailed Design | $100,000 |
| **2018-19** | Sedimentation/Filtration/Aeration South Ayr - Construction | $2,000,000 |
| **2022-23** | Water Augmentation - Sutcliffe Estate Area Design | $100,000 |
| **2023-24** | Water Augmentation - Sutcliffe Estate Area Construction | $1,500,000 |
| **Grand Total** | | **$3,810,000** |

## 5.3 Maintenance Planning

Maintenance is the regular on-going work that is necessary to keep assets operating within its normal serviceable physical condition, including instances where rectification works are required to restore the asset back to an acceptable useable standard.

### 5.3.1 Scheduled and Unscheduled Maintenance

Council's response to maintenance on water infrastructure is defined in Council's Water Supply Maintenance Levels of Service Manual. Within this manual are details of the prioritisation process used to determine the importance of each water asset and hence, associated response time to work requests for particular event types.

The majority of Council's maintenance expenditure is for unscheduled maintenance activities carried-out in response to service requests, condition audits and management/supervisory directions.

Council does not, at present, budget or report separately on scheduled and unscheduled maintenance. However, the implementation of TechnologyOne's works and asset management system will provide the ability to develop this functionality.

### 5.3.2 Future Maintenance Expenditure

The growth related-capital as described above will have an impact on maintenance budgets over the forecast period, therefore each forecast year has included an allowance for new capital works undertaken during the previous financial year.

The scheduled maintenance budget presented in the following table is estimated to be 20% of the overall maintenance budget.

*Figure 5.5 – Maintenance Expenditure Table*

| Fin Year | Scheduled Maintenance | Unscheduled Maintenance | Total |
|---|---|---|---|
| 2017/18 | $63,580 | $254,322 | **$317,902** |
| 2018/19 | $64,420 | $257,682 | **$322,102** |
| 2019/20 | $72,420 | $289,682 | **$362,102** |
| 2020/21 | $72,420 | $289,682 | **$362,102** |
| 2021/22 | $72,420 | $289,682 | **$362,102** |
| 2022/23 | $72,420 | $289,682 | **$362,102** |
| 2023/24 | $72,820 | $291,282 | **$364,102** |
| 2024/25 | $78,820 | $315,282 | **$394,102** |
| 2025/26 | $78,820 | $315,282 | **$394,102** |
| 2026/27 | $78,820 | $315,282 | **$394,102** |
| **Total** | **$726,960** | **$2,907,860** | **$3,634,820** |

## 5.4 Disposal Plan

Disposal includes any activity associated with disposal of or decommissioning an asset including sale, demolition or relocation.

Currently, no water assets are under consideration for disposal.

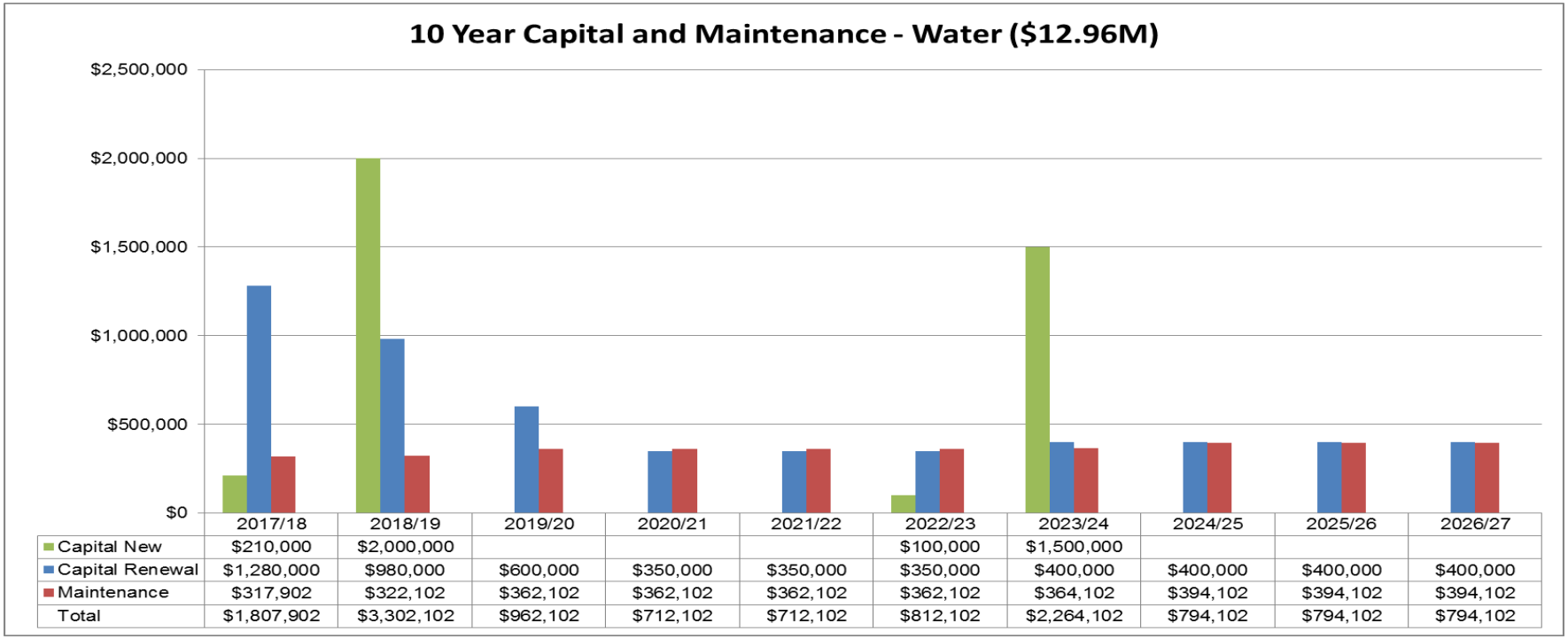
# 6 FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this strategic 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.

## 6.1 10-Year Water Long Term Financial Plan (LTFP) Expenditure Projections

The following figure identifies the estimated maintenance and capital expenditure required to provide an agreed level of service to the community over the 10 year forecast period.

*Figure 6.1 10 Year Expenditure Forecast*




| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| Capital New | $210,000 | $2,000,000 | | | | $100,000 | $1,500,000 | | | |
| Capital Renewal | $1,280,000 | $980,000 | $600,000 | $350,000 | $350,000 | $350,000 | $400,000 | $400,000 | $400,000 | $400,000 |
| Maintenance | $317,902 | $322,102 | $362,102 | $362,102 | $362,102 | $362,102 | $364,102 | $394,102 | $394,102 | $394,102 |
| Total | $1,807,902 | $3,302,102 | $962,102 | $712,102 | $712,102 | $812,102 | $2,264,102 | $794,102 | $794,102 | $794,102 |

## 6.2 Financial Performance Measures

This section reports on the financial sustainability of the proposed forward capital works program.

Refer to the Executive Level Strategic Asset Management Plan for detailed description of each performance measure.

Council's projected depreciation expense for FY 2017/18 is $548,300.

### 6.2.1 Asset Sustainability Ratio

Asset sustainability ratio – is capital renewal expenditure divided by the depreciation expense, expressed as a percentage.

Asset Sustainability Ratio = $551,000 / $579,039 (Avg over 10 years) = 95.2%

Previous Asset Management Plan performance (2012) was 122.75**%**

The current target for the Asset Sustainability Ratio as per the Financial Management (Sustainability) Guideline 2013 is 90% (on average over a ten year period).

Significant renewal investment proposed for the 2017/18 financial year will yield an asset sustainability ratio of 95.2%, which is more than the recommended minimum. Installation of variable speed drives and switchboard at South Ayr water treatment plant are significant individual projects and will alone exceed the recommended minimum.

### 6.2.2 Asset Renewal Funding Ratio

Net present value (NPV) is planned capital expenditure over the planning period is divided by the NPV of the required capital expenditure over the same period within this asset management plan.

Future Renewal Funding Ratio = $5,510,000 / $ 1,236,190 = 446%

Previous Asset Management Plan performance (2012) was 73.93**%**

The long term planned renewal investment is well above the financial register modelling expenditure forecast, which is a sound projection to sustain overall average condition and performance of the portfolio; and potentially, cater for any major refurbishment works at the two water tower sites at Ayr and Home Hill.

### 6.2.3 Asset Consumption Ratio (ACR)

Depreciated replacement cost (DRC) divided by the current replacement cost (CRC), expressed as a percentage.

Asset Consumption Ratio = $22,006,287 / $41,127,185 = 53.5%

Previous Asset Management Plan performance (2012) was 53.4**%**

Council's investment in water infrastructure since the previous asset management plan has been sufficient to sustain the overall written-down value of the portfolio with previous levels.

### 6.2.4 Impact of Inflation

Figures presented over the 10 year forecast period are expressed in current year terms and have not been indexed to consider inflation.

## 6.3 Funding Strategy

The projected expenditure identified is to be funded from Council's operating and capital budgets. The funding strategy is detailed in Council's 10-year long-term financial plan.

Capital projects beyond the next financial year are prefaced on receiving state or federal grants to combine with Council's own funding for the works to proceed.

## 6.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this strategic asset management plan and in preparing forecasts of required operating and capital expenditure. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this strategic asset management plan are:

- Renewal capital works average $551,000 per year over the forecast period. Years 1-3 have specific projects that provide $1.2M, $980k and $600k respectively.

# 7 ASSET CLASS RISKS AND IMPROVEMENT PLAN

## 7.1 Risk Management Plan

The following table lists the risks specific to this asset class and their current and proposed risk management controls. Refer to the Executive Level Strategic Asset Management Plan for risks that are applicable across all asset classes. These risks are described in alignment with Council's Enterprise Risk Management Policy and associated risk matrix as documented in Council's Asset Management Strategy.

*Figure 7.1 – Corporate Risk Management Plan*

| | | | | | RESIDUAL RISK RATING | | |
|---|---|---|---|---|---|---|---|
| ITEM NO. | RISK | CAUSES | CURRENT CONTROLS | ADDITIONAL CONTROLS (TO BE RECORDED IN 'CURRENT CONTROLS' ONCE IMPLEMENTED) | LIKELIHOOD | CONSEQUENCE | RISK RATING |
| 1 | Burst water mains. | Age related causes. Limited knowledge of asset condition. Increased pressure from recent upgrades. | Proactive condition monitoring during routine interventions and repairs. Investigations undertaken into residual life for AC mains reflected in asset forecasts. | Pipe replacement program prepared based on location-based failure data and network age profiles. | LIKELY -– 7 | MINOR - 6 | MEDIUM - 13 |
| 2 | Failure of elevated water towers at Ayr and Home Hill. | Age-related issues. | Condition and performance monitoring. | Detailed investigations into optimal renewal or refurbishment plans for the two elevated water towers and likely timing for works. | UNLIKELY - 3 | MAJOR - 16 | MEDIUM - 19 |
| 3 | Water leakage from reticulated network. | Damaged pipes and fittings. | Limited controls in place. | Water leakage testing program to be implemented. | ALMOST CERTAIN - 9 | MINOR - 6 | MEDIUM - 15 |
| 4 | Limited supply of bulk water from bores and/or Townsville Water. | Damage to supply network. Drought conditions limiting available supply. Quality issues from underground water supply. | Water conservation public awareness program. Testing for new suitable bore sites. | Prepare contingency plans for water supply disruption. | UNLIKELY - 3 | MINOR - 6 | LOW - 9 |
| 5 | Water supply plant and equipment failures. | Equipment age and condition. | Monitoring and maintenance regimes. Programed plant replacement. | Contingency plans for major failures and supply disruptions. | POSSIBLE - 5 | MODERATE - 11 | MEDIUM - 16 |
| 6 | Non-compliance with statutory performance requirements e.g. water quality, failure response times. | Ineffective business systems and operational processes. Supply-related problems. | Monitoring and reporting of relevant KPIs. Drinking Water Quality Management Plan reviewed regularly and revised accordingly. | Strategic review of water supply network. | UNLIKELY - 3 | MODERATE - 11 | MEDIUM - 14 |

## 7.2 Improvement Plan

The asset management improvement plan generated from this strategic asset management plan is shown below.

*Table 7.2 – Improvement Plan*

| Task No | Task | Responsibility | Timeline |
|---|---|---|---|
| 1 | Develop and implement a water leakage investigation program. | Manager Technical Services<br><br>Manager Water & Wastewater | July 2019 |
| 2 | Develop a proactive pipeline condition monitoring and replacement program. | Manager Technical Services | April 2020 |
| 3. | Conduct structural assessment of Ayr and Home Hill Water Towers to determine estimated remaining life. | Manager Technical Services | June 2020 |
| 4 | Develop a Demand Management Strategy. | Manager Technical Services | June 2020 |
| 5 | Implement the Demand Management Strategy. | Manager Water and Wastewater | August 2020 |
| 6. | Preparation of contingency procedures for critical infrastructure. | Manager Operations<br><br>Manager Technical Services<br><br>Manager Water & Wastewater | August 2020 |

## 7.3 Monitoring and Review Procedures

This strategic asset management plan will be reviewed and refined during annual budget preparation and amended/updated to recognise any changes in service levels and/or resources available to provide those services as a result of the budget decision process.

# 8 SUPPORT / REFERENCE DOCUMENTS

The following describes the relevant documents that support the production of this strategic asset management plan.

Please refer to the Executive Level Strategic Asset Management Plan which describes the hierarchy of asset management related documents across Council.

## 8.1 Water Supply Maintenance Levels of Service Manual

Describes the list of assets that make up this portfolio and includes the desired response times for customers, and other requests for work that vary depending on the priority rating applied to the asset.

## 8.2 Statewide Water Information Management (SWIM) Annual Statistical Reporting

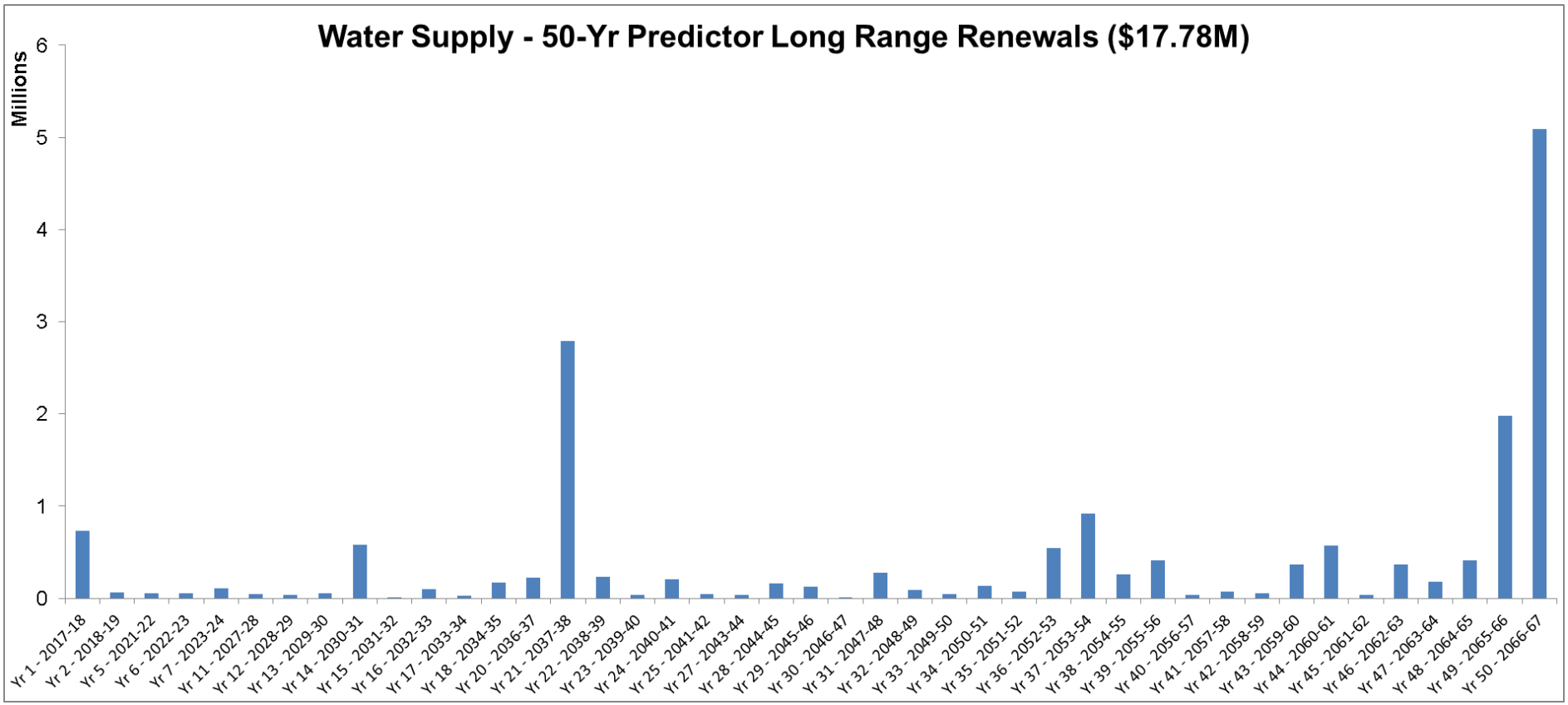
Data provided to the Queensland Water Directorate annually provides a comprehensive set of operational and performance data suitable for use in this plan.

# 9 APPENDICES

## 9.1 Appendix A Asset Register Derived Long-Range Renewals Forecast

The following chart provides an indication of the potential renewal requirements beyond the 10-year forecast period. Broad level conclusions can be drawn regarding the level of expenditure that may be required for future strategic asset management plans.

*Figure 9.1 – Long Range Asset Renewals Chart*



## 9.2 Appendix BProposed10 Year Forward Capital Works Projects

The following table details the capital works projects as described in Council's capital bids spreadsheet showing the split between renewal and other costs. Other costs include capital upgrades and new capital work.

*Table 9.2 – Capital Bids Project Listing*

| Fin Year | Description | Project Cost Renewals | Project Cost Other | Total Project Cost |
|---|---|---|---|---|
| **2017-18** | Ayr Industrial Estate Expansion Project - Water | | $25,000 | $25,000 |
| | Ayr Water Tower - Replace Internal Ladders | $180,000 | | $180,000 |
| | Fire Pressure Upgrade Airdmillan Road | | $85,000 | $85,000 |
| | Giru Water Tower Replace Low Level Tanks | $325,000 | | $325,000 |
| | Giru Water Tower Structural Refurbish High Level Tank | $175,000 | | $175,000 |
| | Replace 1350 Metres Mt Kelly Water Rising Main | $300,000 | | $300,000 |
| | Sedimentation/Filtration/Aeration South Ayr - Detailed Design | | $100,000 | $100,000 |
| | Water Supply Replacement/Refurbishment of Assets | $300,000 | | $300,000 |
| **2018-19** | Home Hill Water Tower Switchboard Replacement | $380,000 | | $380,000 |
| | Replace 1350 Metres Mt Kelly Water Rising Main | $300,000 | | $300,000 |
| | Sedimentation/Filtration/Aeration South Ayr - Construction | | $2,000,000 | $2,000,000 |
| | Water Supply Replacement/Refurbishment of Assets | $300,000 | | $300,000 |
| **2019-20** | Replace 1350 Metres Mt Kelly Water Rising Main | $300,000 | | $300,000 |
| | Water Supply Replacement/Refurbishment of Assets | $300,000 | | $300,000 |
| **2020-21** | Water Supply Replacement/Refurbishment of Assets | $350,000 | | $350,000 |
| **2021-22** | Water Supply Replacement/Refurbishment of Assets | $350,000 | | $350,000 |
| **2022-23** | Water Augmentation - Sutcliffe Estate Area Design | | $100,000 | $100,000 |
| | Water Supply Replacement/Refurbishment | $350,000 | | $350,000 |
| **2023-24** | Water Augmentation - Sutcliffe Estate Area Construction | | $1,500,000 | $1,500,000 |
| | Water Supply Replacement/Refurbishment | $400,000 | | $400,000 |
| **2024-25** | Water Supply Replacement/Refurbishment | $400,000 | | $400,000 |
| **2025-26** | Water Supply Replacement/Refurbishment | $400,000 | | $400,000 |
| **2026-27** | Water Supply Replacement/Refurbishment | $400,000 | | $400,000 |
| **Grand Total** | | **$5,510,000** | **$3,810,000** | **$9,320,000** |