



DRAINAGE ASSET MANAGEMENT PLAN SUMMARY 2014 - 2017



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Front cover page photo is taken at Albion Park, Munster; the stormwater runoff from the road collects in this open basin

1. Introduction

With the implementation of the Strategic Community Plan 2012-2022, the Asset Management Plan (AMP) has been developed to promote and establish sustainable financial management and continuous improvement of the City's infrastructure assets.

The Drainage Asset Management Plan (DAMP) covers the drainage Pipes, Pits and Sump Fencing. The data utilised in the creation of the DAMP is based on the City's operational asset register and is considered to be approximately 85% accurate, with fences receiving a full audit and condition assessment in August 2013.

The DAMP has been updated to present a 2014 version to reflect the current status of the drainage assets for future asset management planning. The plan demonstrates the current Asset Management maturity and further reinforces the City's commitment to continuously improve its asset management practice and methodologies.

The DAMP covers the 2015/16 and 2016/17 financial years providing the necessary funding requirements to support the creation of the revised long term financial plan due to be completed in late 2015.

To ensure alignment with the Department of Local Government & Communities Asset Management Planning Framework the City's AMP's act as Informing Strategies and will be developed every two years between May and October ensuring that future iterations of the Long Term Financial Plan (LTFP) are established utilising the most accurate asset information and financial projections.

The Drainage infrastructure asset category is currently the City's second highest value asset grouping.

Further details of the City's stormwater Infrastructure assets are listed below.

<i>Asset Classification</i>	<i>Quantity 12/13</i>	<i>Replacement value 12/13</i>	<i>Quantity 13/14</i>	<i>Replacement Value 13/14</i>
<i>Pits</i>	17,817	\$48.25m	18,449	\$52.62m
<i>Pipes</i>	440 km	\$163.43m	455 km	\$175.63m
<i>Sub Total</i>			Sub Total	\$228.25m
<i>Fences</i>	13.47 km	\$2.39m	15.2 km	\$0.91m
TOTAL		\$214.07m		\$229.16m

Note: these figures were generated from the asset register in November 2014.

2. Levels of Service

Level of Service is a measurable target which determines the type and extent of services delivered to the Community.

- A 10% reduction in customer service requests from the community is targeted for the financial year 13/14.
- Minimal risks identified; however the Very High risk rated can be reduced by implementing a recommended treatment of monthly scheduled inspections.

Asset Capacity and Performance

- A Drainage Catchment Study (DCS) conducted in 2009 has reported the drainage system/ catchment deficiencies; totalling over \$5 million.
- With an estimated replacement cost of \$26.8m, 15% of the pipe network are under 300mm diameter and are considered substandard and require potential replacement.
- With total estimated replacement cost of \$314,465, 10 reserves/parks require the installation of a Gross Pollutant Trap (GPT). These have been scheduled at 1 installation per year.

See **(Section 3 - Page 12)** of the DAMP for further information

3. Enterprise Risk Management

In 2013 the City of Cockburn engaged an external consultant to review the risk management arrangements to ensure compliance with the International Standard for risk management.

Following the risk assessment process those risks being assessed with a 'Proposed Treatment' plan in place, have been extracted from the Enterprise Risk Register and summarised in the table below. This table has been updated in accordance with the Service Units outcomes to date (Nov 2014) and should be reflected in the Enterprise Risk Register.

Risk and proposed treatments

Risk description	Risk Rating	Proposed Treatment	Due Date
Contaminated stormwater flows into river / wetland system	Substantial	<ol style="list-style-type: none"> 1. Classification of catchments. 2. Emergency response procedure 3. Existing treatment will mitigate/ prepare a program for installation to be funded over the next 5 years. 	Apr 2016
Disturbance of Acid Sulphate Soils (ASS) contaminating groundwater	Substantial	<ol style="list-style-type: none"> 1. New education program. 2. Mapping updates. 3. Create a checklist precaution. 4. ASS Management Plan. 5. Alert Communications to the Inherent Risk & prepare media strategy. 	Dec 2015
A vehicle collides with a damaged gully grate or structure lid	Moderate	<ol style="list-style-type: none"> 1. Documented inspection program. 	Started 2013- Complete 2015
Undetected pipe damage or incorrect design of drainage system resulting in flooding or road collapse	Low	<ol style="list-style-type: none"> 1. Program to upgrade the drains 5 & 10 year program. 2. Based on assessment of residential area criteria. 3. Implement a documented inspection program. 	Dec 2015

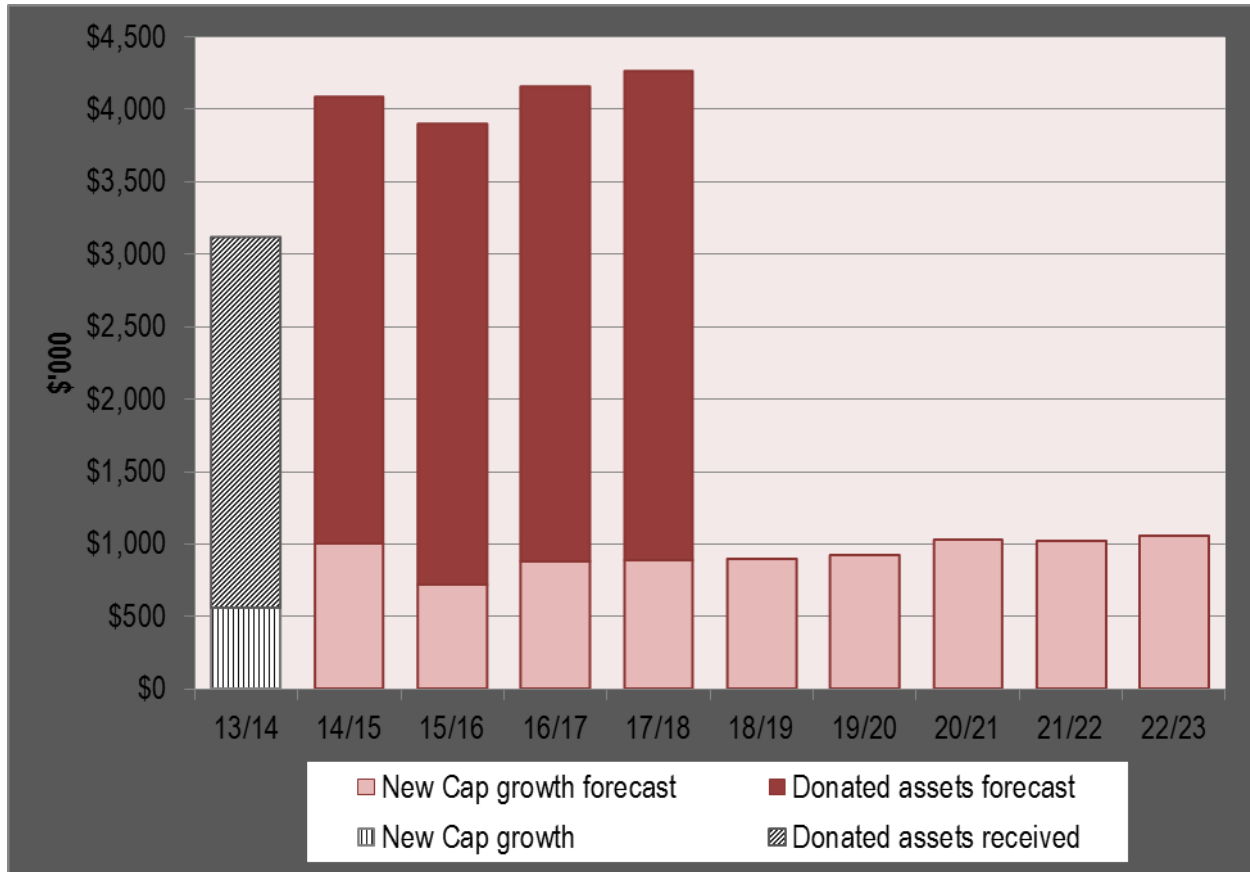
Monitoring and reviewing occurs concurrently throughout the risk management process and with the City embracing a more structured approach to risk management and mitigation, our systems and processes will mature.

Current practices are satisfactorily managing risk; removal of these practices through lack of funding will create increase the risk and may impact on service delivery.

See **(Section 3 - Page 13)** of the DAMP for further information

4. Future Growth and Demand

Future growth projections are supported by the City's Strategic Planning Service Units Population and demographic research, whilst Demand for new services will be catered for through upgrading existing and providing new assets.



- A cumulative growth of 66 kilometres to the Drainage network over 5 years from 2012. This represents a 1.46% growth per annum and an increase in replacement cost of \$3 million per year
- Estimated project costs of \$3 million invested through the delivery of the 10 year capital works program.

Factors impacting the drainage system:

- Demographics are expecting higher density developments reflecting an increase in impervious areas and capacity required for runoff.
- The changing weather patterns have increased the frequency of intense storm events resulting in flooding and the requirement for larger capacity systems.

See **(Section 4 - Page 18)** of the DAMP for further information

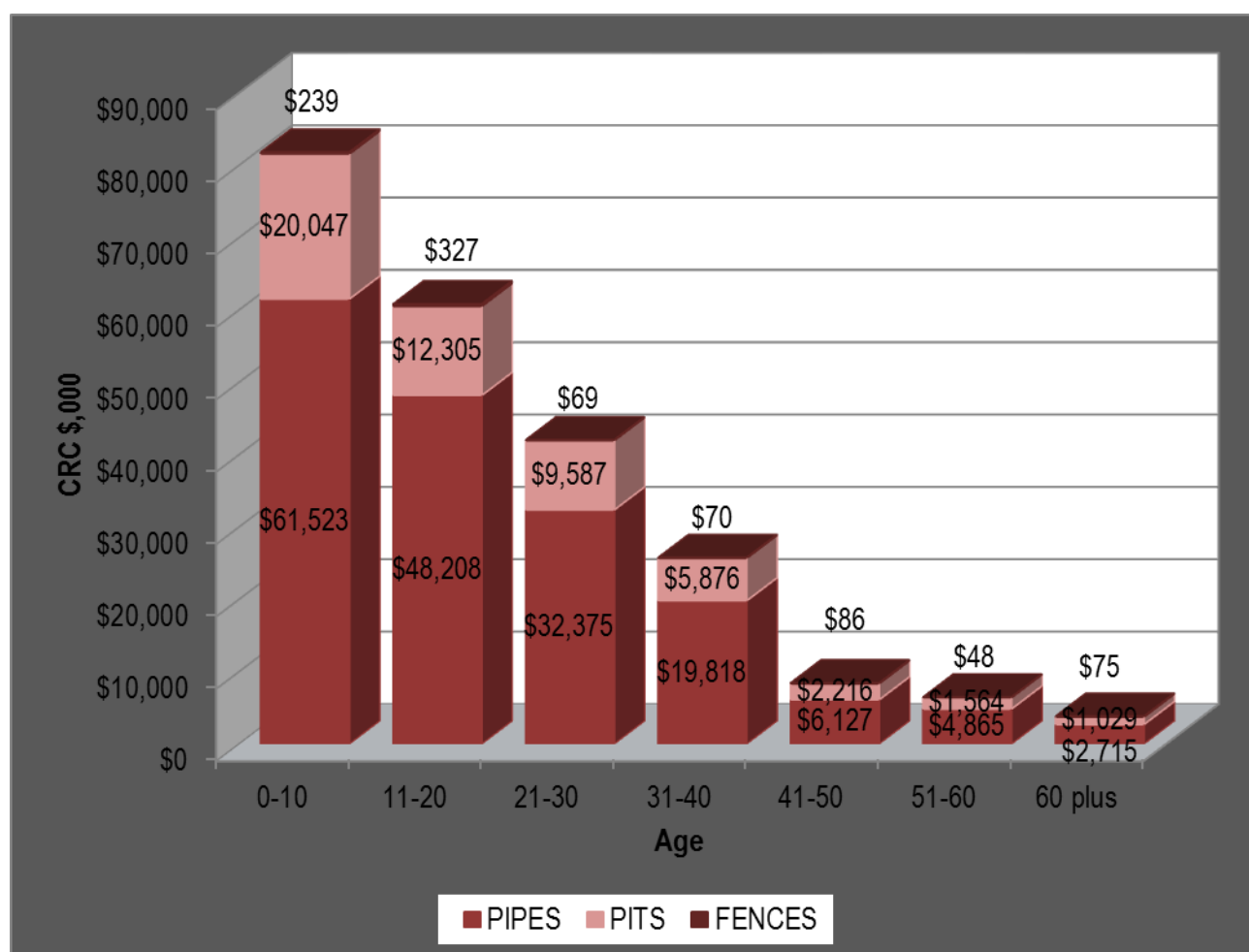
5. Lifecycle Management

The lifecycle management section details how the City plans to manage and operate both current and future assets to an appropriate level of service whilst optimising life cycle costs.

5.1 Asset age

The Age profile for the drainage infrastructure has been derived from As-constructed drawings. Due to a lack of historical records prior to 1950 the City's Roads Service Unit has assumed the age of some assets however still provides a confidence rate of 85% of the records accuracy. It is evident that a majority of drainage construction was undertaken in the past 20 years; 62% overall of the network.

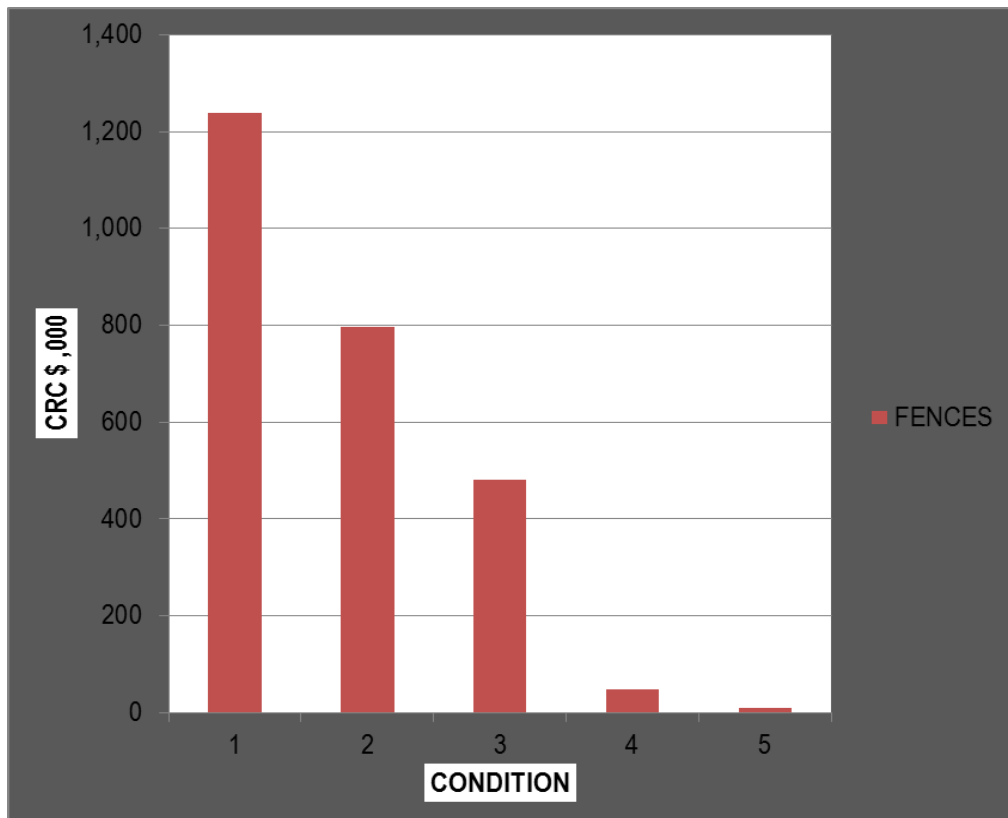
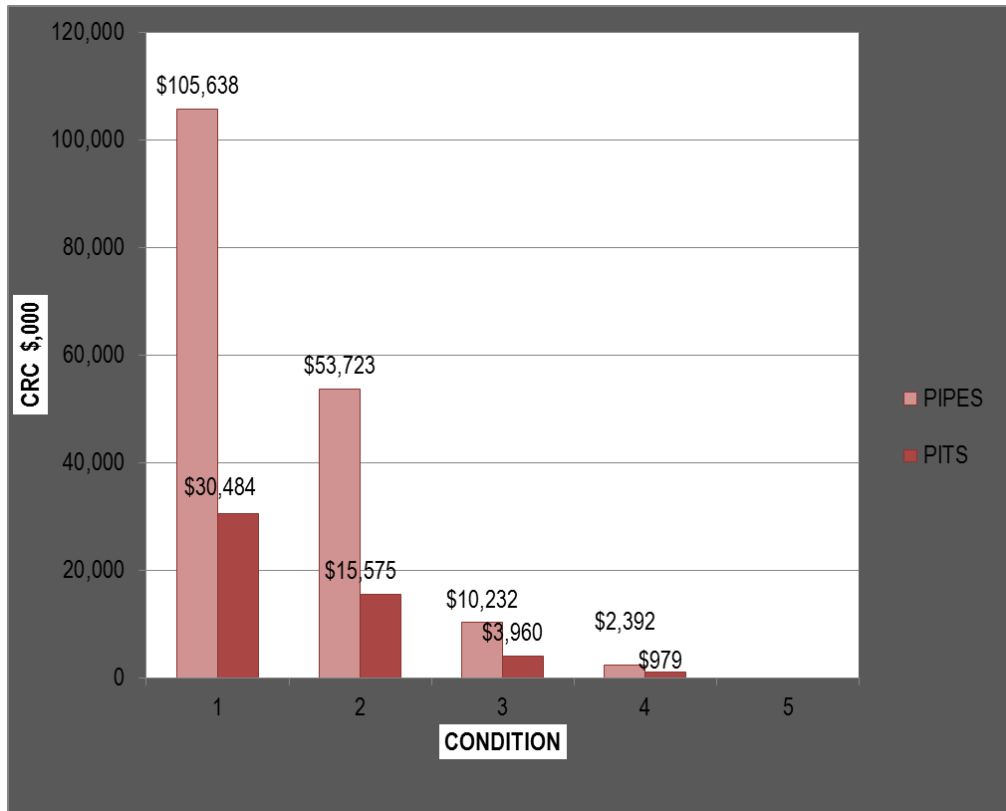
Age Profile for Drainage Type



The age profile per suburb using the CRC values has been provided in Fig 2A below

5.2 Asset condition

The condition profile of the City's assets is measured using a 1 to 5 rating system; 1 being excellent and 5 very poor. The following graph provides the condition analysis of the drainage infrastructure for pipes & pits and sump fences.



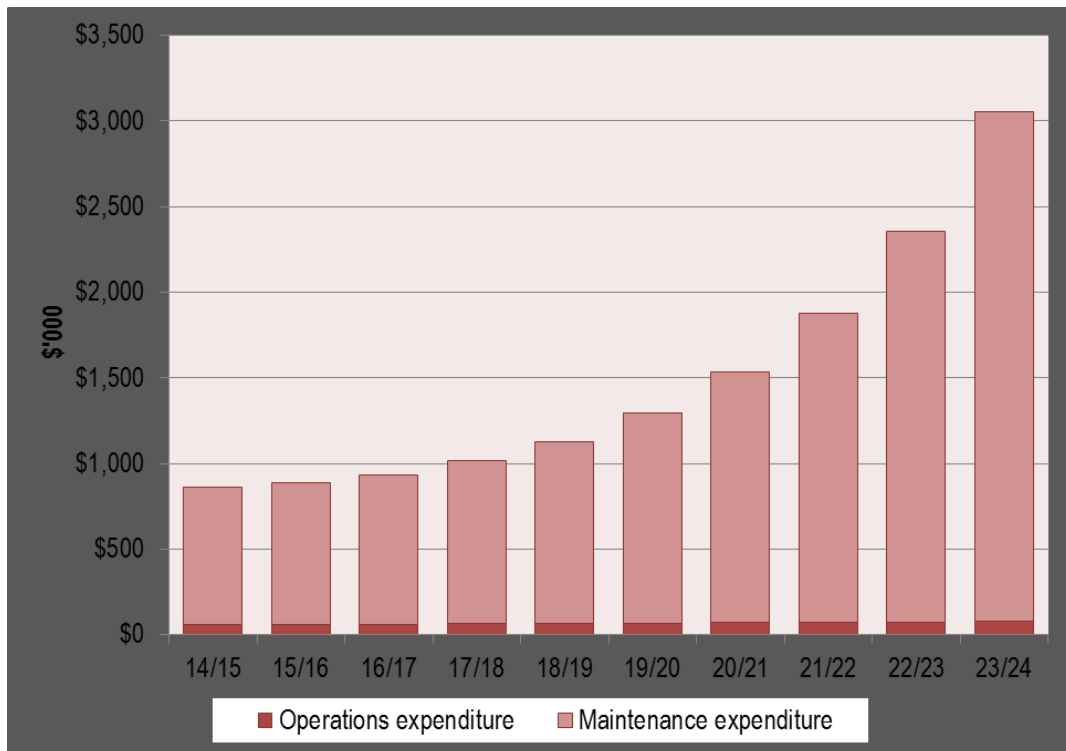
5.3 Maintenance & Operating expenditure

With the City’s continued asset growth, maintenance and operating expenditure needs to be budgeted to ensure new buildings are maintained to the appropriate service levels

Maintenance and operating expenditure trends are shown for the past 4 years.

Year	Maintenance Expenditure		Planned	Operating Expenditure	Total Operating & Maintenance	Annual Budget
	Reactive	%				
2010/11	\$73,430	16%	\$376,796	\$27,299	\$477,525	\$500,000
2011/12	\$241,757	34%	\$464,170	\$52,470	\$772,384	\$523,860
2012/13	\$187,115	34%	\$363,808	\$15,117	\$566,040	\$626,888
2013/14	\$254,669	32%	\$531,142	\$57,158	\$842,969	\$651,155
2014/15					Budget	\$647,932

- Maintenance expenditure needs to consider the Drainage Management Strategy to meet appropriate service levels.
- From 2010/11 to 2013/14 the total operating and maintenance expenditure has increased from \$477,525 to \$842,932.
- By 2023/24 required expenditure for Operations and Maintenance is expected to be around \$3 million per year.



See (Section 5 – Page 23) of the DAMP for further information

6. Financial Analysis

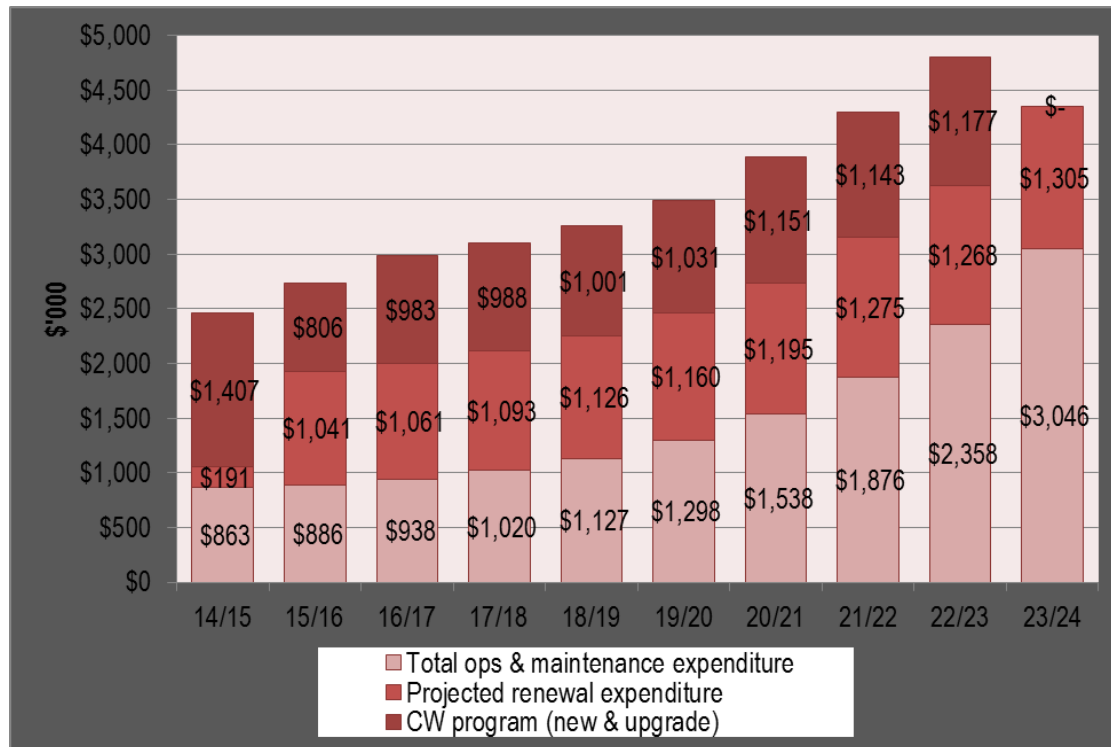
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on appropriate levels of service and current and projected future asset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

From the operational asset register, the current replacement cost, fair value and the annual depreciation expense are shown below.

Asset Classification	Current Replacement Cost (CRC)	Depreciation	Fair Value	Annual Depreciation Expense
Pits	\$52,623,384	\$10,803,335	\$41,820,049	\$526,234
Pipes	\$175,630,621	\$34,961,509	\$140,669,111	\$1,756,306
	\$228,254,005	\$45,764,845	\$182,489,160	\$2,282,540
Fences	\$914,823	\$258,504	\$656,319	\$29,763
TOTAL	\$ 229,168,828	\$ 46,023,348	\$ 183,145,479	\$ 2,312,303

6.1 Financial Projections

The financial projections for operations and maintenance, renewals and capital expenditure are shown below.



6.2 Renewal Forecasts

The City has developed a 10 year renewal program which will drive the budget planning process and form the basis to the City's long term financial planning.

Figures detailed in the LTFP Budget column were derived from the funding strategies within the LTFP and were manually distributed over the 10 year program.

Year	Projected Renewals	Proposed Budget Allocation from LTFP	Funding gap	Cumulative Gap
14/15	\$ 191,196	\$226,600	-\$ 35,405	-\$ 35,405
15/16	\$ 1,040,645	\$233,398	\$ 807,247	\$ 771,843
16/17	\$ 1,061,402	\$200,000	\$ 861,402	\$ 1,633,244
17/18	\$ 1,092,931	\$1,000,000	\$ 92,931	\$ 1,726,176
18/19	\$ 1,126,129	\$800,000	\$ 326,129	\$ 2,052,305
19/20	\$ 1,159,936	\$800,000	\$ 359,936	\$ 2,412,241
20/21	\$ 1,194,922	\$400,000	\$ 794,922	\$ 3,207,163
21/22	\$ 1,274,713	\$2,000,000	-\$ 725,287	\$ 2,481,876
22/23	\$ 1,268,016	\$3,000,000	-\$ 1,731,984	\$ 749,892
23/24	\$ 1,305,144	\$ 2,000,000	-\$ 694,856	\$ 55,037
Total	\$ 10,715,035	\$10,659,998	\$ 55,037	

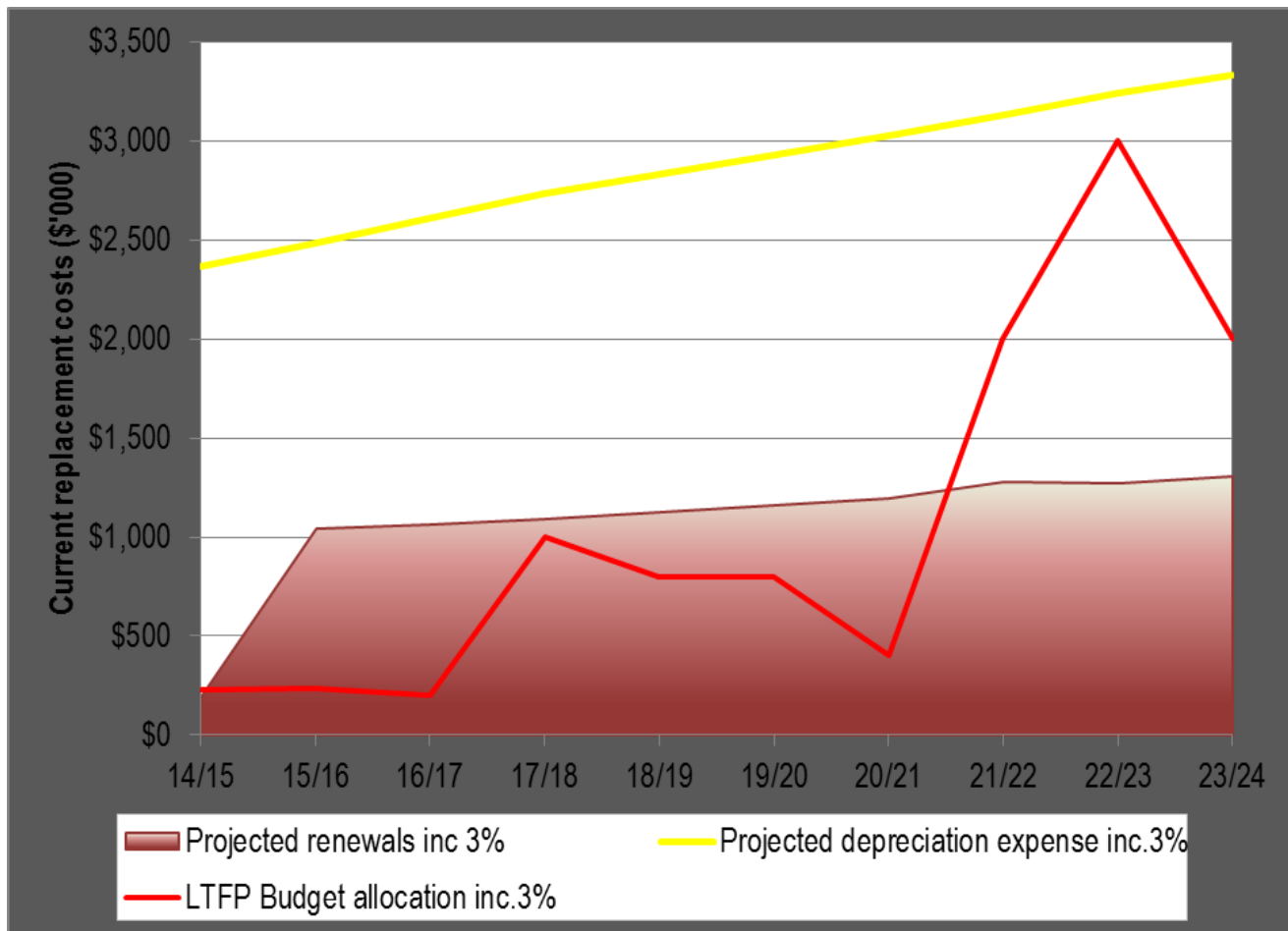
This table reflects the maturing financial alignment between the renewal projections made during the 2013 versions of the AMP's and the funding strategies outlined during the formalisation and adoption of the City's 2012/13 to 2021/22 LTFP.

The 2014/15 to 2016/17 preliminary drainage renewal program is detailed in Appendix A.

Please Note: These figures are subject to change as the City's AMP's are revised and each annual budget process is completed.

The graph identifies the Projected Renewal expenditure projected and the LTFP budget allocation over the next 10 years. Also, the estimated Annual Depreciation which includes capital growth is highlighted.

The 10 year projected renewal expenditure totalling \$10.6 million.



6.3 Funding Strategy

Projected renewal expenditure identified is to be funded from the City’s capital budgets.

The funding strategy is detailed in the City’s Long term Financial Plan 2012/13 to 2021/22 and has been added to the above Table. The allocated budget figure shown for years 22/23 and 23/24 is representative of what would be required to further reduce the funding gap. This will be addressed with the development of the new LTFP.

The LTFP provides for an increase in funding commitment for both asset renewal and new projects which would adequately sustain the City’s asset base in future years.

6.4 Sustainability of Service Delivery

The City will comply and report its drainage assets performance in relation to the Department of Local Government's (Dept of LG) Asset Management Guidelines and Framework.

The following table indicates the City's performance in managing our drainage infrastructure assets.

Asset Class	Consumption Ratio 2013/14	Sustainability Ratio 2014/15	Renewal Funding Ratio (10 Yrs)
Drainage	79.92%	9.80%	99%
Dept of LG Standard	Met	Not Met	Not Met

Sustainability ratios have been forecast for the next 10 years to reflect the improvements the City is making following completion of the LTFP. The sustainability ratio for 2023/24 is predicted to be 37%.

See **(Section 6 – Page 32)** of the DAMP for further information

7. AMP Improvement Strategy and Monitoring

This Section has been developed to highlight the City's initiatives recommended for completion during the life of the 2014-17 AMP and to reflect on the improvements delivered since the adoption of the 2013 AMP in March 2013.

The 2014 -17 planning process has identified the following improvements:

- Develop the system to monitor performance measures against levels of service targets by linking the budget allocation to the level of service.
- Retain an emphasis on our capital improvements programs – sump upgrade and drainage rationalisation.

This Drainage Asset Management Plan has a life of three years and will be reviewed each year during the City's budget preparations. Future versions will be developed every two years aligned to the City's Long Term Financial Plan.

See **(Section 8 - Page 45)** of the DAMP for further information

Appendix A 2014/15 to 2016/17 preliminary renewal program

CATCHMENT	LENGTH m	PIPE COST	DEWATERING COST	TOTAL PIPE COST	+ CPI 3% increase	YR
Winterfold Road (Stormwater relining pipework)				\$25,000		
69 Barrington St stage 2 (29 Kipling Street)				\$37,500		
Beckett Close (Drainage upgrade)				\$82,500		
Drainage upgrade_Frederick Road HAMILTON HILL 6163				\$7,817		
14 Elderberry Dr - Drainage Upgrade - CF13/14				\$38,379		
C/W BUDGET				\$191,196	\$ 191,196	2014/15
BL001 Total	465.32	108419	78586	187005	\$192,615	1
AT010 Total	13.62	3173.46	2451.6	5625	\$5,794	1
AT055 Total	48.24	11239.92	9495	20735	\$21,357	1
AT081 Total	3.97	925.01	714.6	1640	\$1,689	1
AT085 Total	2.36	549.88	424.8	975	\$1,004	1
BE016 Total	125.04	29134.32	0	29134	\$30,008	1
BE019 Total	476.08	110926.64	0	110927	\$114,255	1
BL002 Total	396.6	92407.8	58324.2	150732	\$155,254	1
BL006 Total	323.31	75331.23	53559.6	128891	\$132,758	1
BL007 Total	800.38	186488.54	150957.6	337446	\$347,569	1
HH075 Total	48.52	11305.16	0	11305	\$11,644	1
HH077 Total	6.55	1526.15	0	1526	\$1,572	1
HH086 Total	29.67	6913.11	0	6913	\$7,120	1
HH117 Total	34.74	8094.42	0	8094	\$8,337	1
SF_185	Fence			\$9,387	\$9,669	1
				\$1,010,335	\$1,040,645	2015/16
HH087 Total	43.95	10240.35	0	10240	\$10,864	2
HH080 Total	322.61	75168.13	0	75168	\$79,746	2
HH107 Total	200.71	46765.43	0	46765	\$49,613	2
HH108 Total	87.55	20399.15	0	20399	\$21,641	2
HH113 Total	119.3	27796.9	0	27797	\$29,490	2
HH145 Total	2.57	598.81	0	599	\$635	2
HH124 Total	142.96	33309.68	0	33310	\$35,338	2
HH149 Total	4.27	994.91	0	995	\$1,056	2
HH160 Total	3.78	880.74	0	881	\$934	2
HH133 Total	130	30290	0	30290	\$32,135	2
HH146 Total	164.86	38412.38	0	38412	\$40,752	2
HH159 Total	534.94	124641.02	0	124641	\$132,232	2
HH161 Total	7.26	1691.58	0	1692	\$1,795	2
JK067 Total	168.68	39302.44	29167.2	68470	\$72,639	2
MU002 Total	336.24	78343.92	0	78344	\$83,115	2
MU003 Total	1403.43	326999.19	0	326999	\$346,913	2

CATCHMENT	LENGTH m	PIPE COST	DEWATERING COST	TOTAL PIPE COST	+ CPI 3% increase	YR
MU016 Total	32.77	7635.41	0	7635	\$8,100	2
MU018 Total	272.43	63476.19	0	63476	\$67,342	2
MU043 Total	13.15	3063.95	0	3064	\$3,251	2
NC001 Total	22.5	5242.5	0	5243	\$5,562	2
SL038 Total	3.32	773.56	597.6	1371	\$1,455	2
SP086 Total	85.51	19923.83	0	19924	\$21,137	2
SP099 Total	63.34	14758.22	0	14758	\$15,657	2
				\$1,000,473	\$1,061,402	2016/17

