Asset Management Plan
Drainage

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1.0 EXECUTIVE SUMMARY

1.1 Overview

The City of Albany has a significant portfolio of stormwater drainage assets under its care and control. Large proportions of these assets have been in existence for many years and have originated from a combination of City of Albany construction and subdivisional development activity. As these assets have a lengthy useful life and a significant proportion are underground and complex to replace it is a difficult task to monitor the cost and timing of their renewal. Forecast expenditure against required renewal expenditure highlights the need for further data and more detailed analysis prior to the next review in order to ascertain whether the City can maintain this asset sustainably.

Although Bridges are included as an asset under this plan, being the responsibility of the City of Albany, they are managed separately through a partnership with Main Roads WA who maintain an asset register, conduct and record regular condition inspections, and initiate maintenance and renewal activities. Bridges are not considered in the financial modelling.

The confidence in the data used to prepare this plan is low at this time however ongoing data collection will see the confidence level increase to moderate by the next plan review.

2.0 INTRODUCTION

2.1 Knowledge of Existing Assets (Inventory and Condition of Assets)

Table 2.1.1 Assets covered by this plan

Asset Category	No/Length of Assets	Replacement value (1/06/2013)
Bridges	16	$17,540,000
Stormwater Pipes	232km	$41,448,250
Box Culverts	1.15km	$1,549,822
Stormwater Pits & Headwalls	11,708	$23,416,000
Rural Culverts	710	$2,435,346
TOTAL		**$86,389,418**

Table 2.1.2 Stormwater Pipes by Size

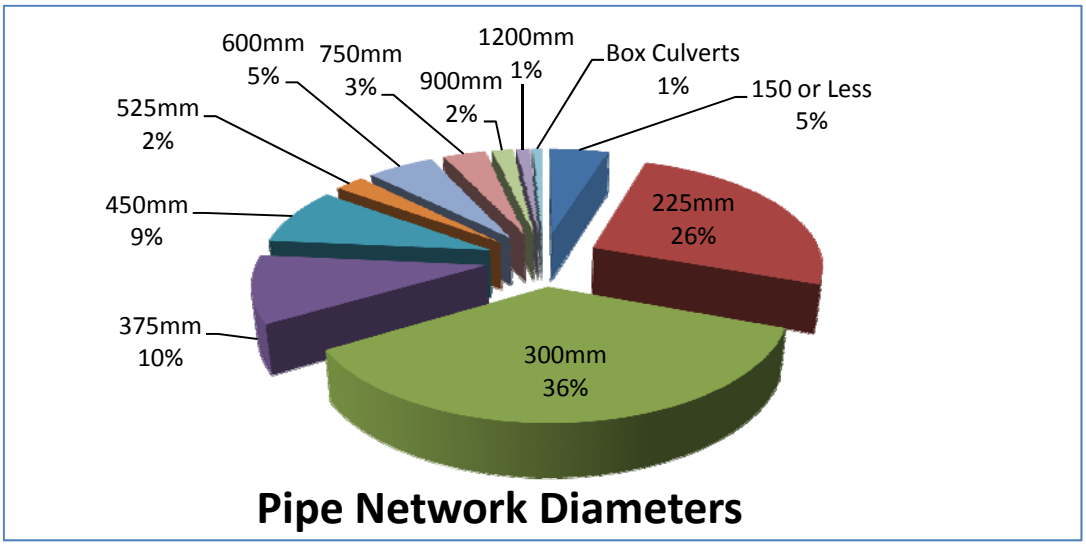


Table 2.1.3 Stormwater Pits by Category

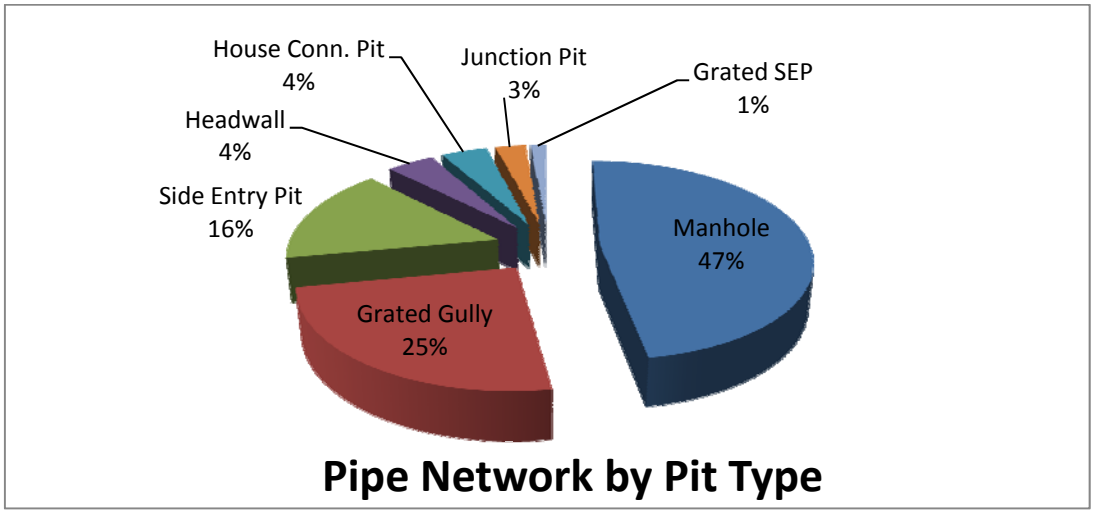
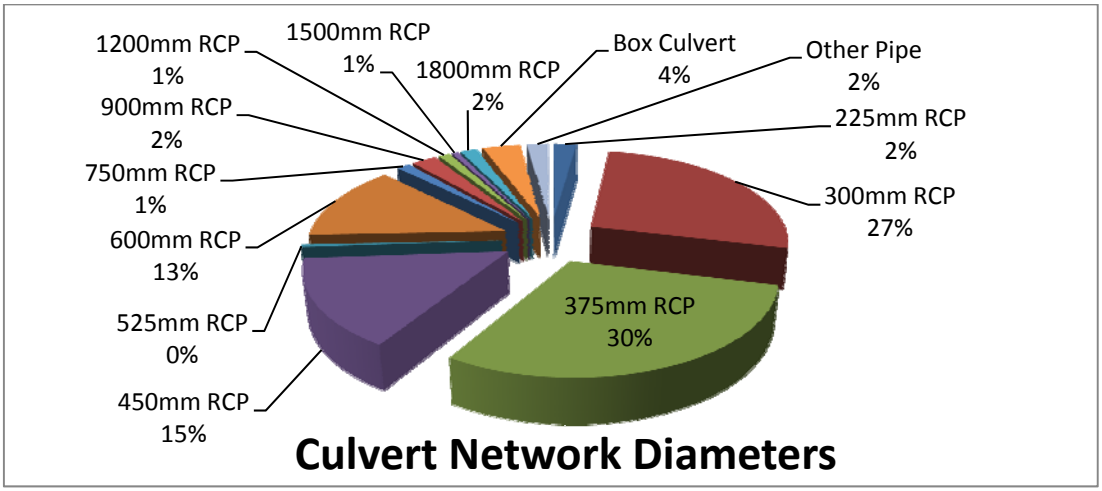


Table 2.1.4 Rural Culverts by Size



3.0 SERVICE LEVELS

3.1 Desired Level of Service

Services levels for drainage assets are dictated primarily by whether or not there is sufficient capacity. There are a number of isolated drainage issues throughout the municipality. These issues when identified are systematically and progressively resolved. However in most cases, this does not necessarily address ageing infrastructure which requires renewal. This will be a focus for future reviews.

4.0 FUTURE DEMAND

4.1 Future Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management.

Table 4.1.1 Demand Management Plan Summary

Service Activity	Demand Management Plan
Minimisation and mitigation of flooding	Undertake catchment analysis and modelling to determine hydraulic requirements for drainage system. Inspect and evaluate the condition of old drainage system and compile replacement program. Provide new and/or upgrade existing infrastructure to increase capacity and carry increased stormwater runoff from infill development. Attenuate or reduce flows from infill development through enforcement of subdivision guidelines.
Preserving & enhancing the environment	Stormwater harvesting and treatment from chemicals, debris and organic matter. Public education and information on good storm water management practice (Water sensitive urban design principles). Designing soakage systems which discharge to the ground where practicable.
Financial	Developing long term financial management plans (LTFP) to ensure financial sustainability.

4.2 New Assets from Growth

The new assets required to meet growth will be acquired from land developments and City of Albany construction. Acquiring these new assets will commit the City to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required. These future costs need to be identified and considered in developing forecasts of operating and maintenance costs in future reviews of this Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

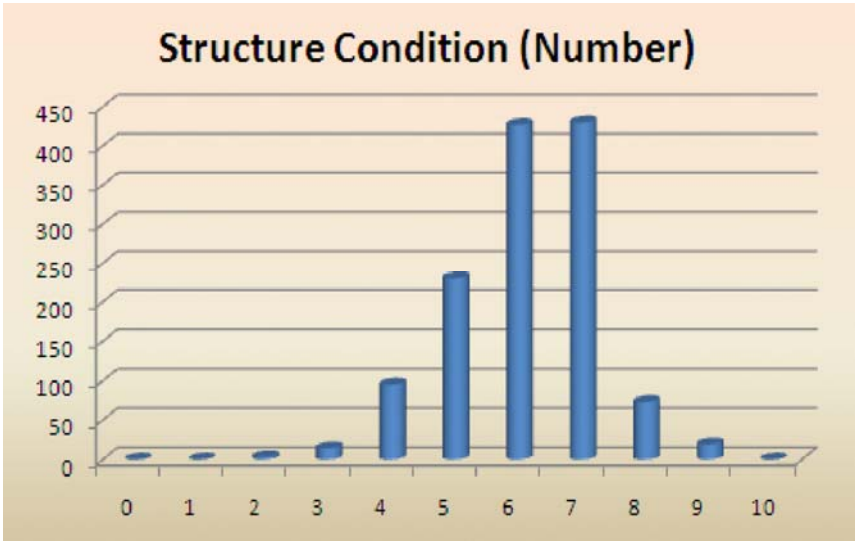
5.1 Lifecycle Management - Asset capacity and performance

City of Albany's services are generally provided to meet design standards where these are available.

5.2 Asset Condition

The condition profile of the City's drainage assets are not currently known across the whole network. A condition audit of the Oyster Harbour West Bank was completed in 2010 and the condition profile of that catchment is shown below.

Table 5.2.1 – Asset Condition Profile – Oyster Harbour West Bank



5.3 Risk Management Plan

Table 5.3.1 Critical risks and treatment plans

Asset at risk	What can happen?	Risk rating	Risk treatment plan
Open drains	Overgrown vegetation causes local flooding.	Medium	Proactive maintenance and prioritising Customer Service Requests
Headwalls	Soil erosion may cause an element to collapse causing injury.	Medium	Continue Customer Service request system, and maintenance, erosion protection and stabilisation
Stormwater Pipes	Subsiding trenches are likely to cause injuries and property damage.	High	Quality control of materials and workmanship during installation / repair and conformance with specifications
Stormwater Pits	Damaged /Misplaced lids and covers are a hazard for traffic and pedestrians.	High	Continue current practices with Customer Service Requests.
Rural Culverts	Silting and blockages cause local flooding.	High	Proactive maintenance.
Stormwater Drainage Design	Accuracy of catchment modelling.	High	Review current design practices.

5.4 Routine Maintenance Plan

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

Current maintenance expenditure levels are considered to be adequate to meet required service levels. Upgrade/New expenditure levels are at present elevated in comparison to a long term network to resolve a backlog of stormwater network capacity failures.

Assessment and prioritisation of reactive maintenance is undertaken by City staff using experience and judgement.

5.5 Renewal/Replacement Plan

Planned capital expenditure forecasts as shown in the Long Term Financial Plan are shown in Table 5.5.1. Individual projects or treatments are identified in the LTFP.

Table 5.5.1 Planned Capital Expenditure

Year	Renewal	Upgrade	Expansion
2013/2014	$718,500	$722,000	$200,000
2014/2015	$400,000	$100,000	$530,000
2015/2016	$423,000	$639,000	$1,119,000
2016/2017	$495,000	$540,000	$490,000
2017/2018	$525,000	-	$1,200,000
2018/2019	$625,000	$530,000	$530,000
2019/2020	$825,000	$400,000	$400,000
2020/2021	$1,175,000	-	$650,000
2021/2022	$1,225,000	-	$700,000
2022/2023	$1,225,000	-	$700,000

5.6 Renewal Standards

Renewal work is carried out in accordance with the following standards and specifications.

- Stormwater Management Manual for Western Australia – Department of Water
- AS/NZS 3500.3.2003 Plumbing and Drainage Part 3: Stormwater Drainage
- Australian Rainfall and Runoff – 4th Edition

6.0 FINANCIAL SUMMARY

6.1 Financial Summary

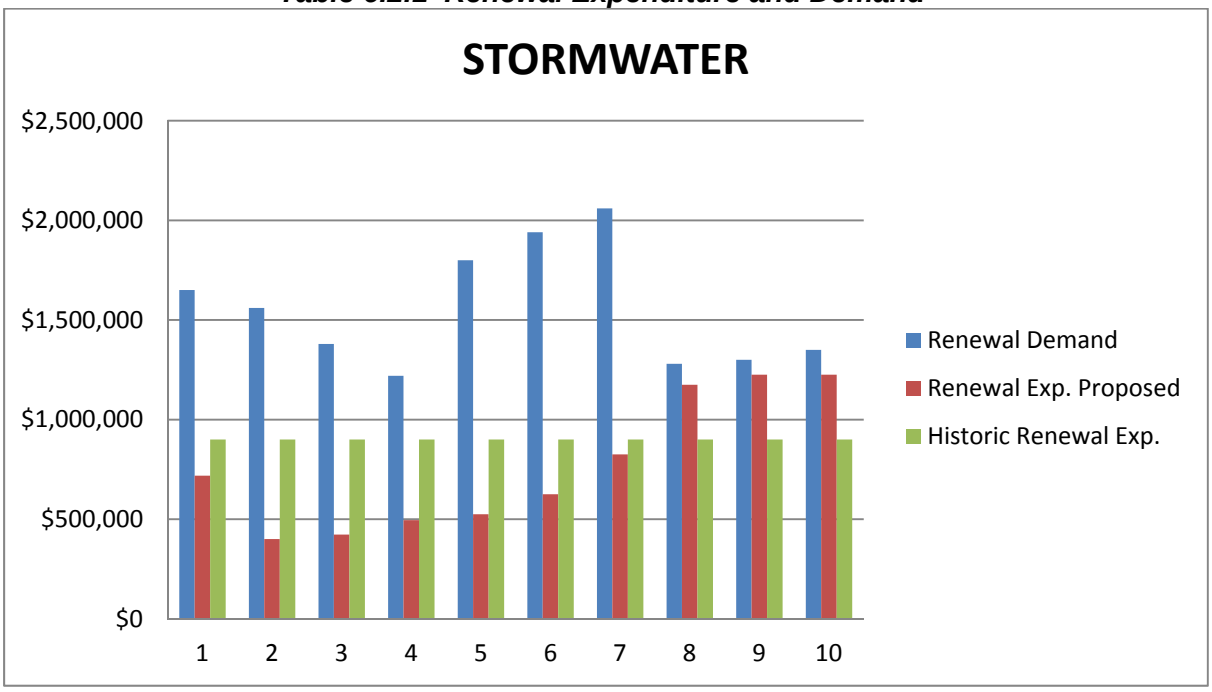
Current forecast expenditure against anticipated renewal expenditure requirements indicates that for this asset class, that the financial position is not sustainable however the City must be mindful of the relatively low confidence in the data. It is important to understand the measures required to manage this in section 6.3.

6.2 Financial projections

The financial projections are shown in Table 5.5.1 for planned capital expenditure (renewal and upgrade / expansion / new assets).

Projections of renewal demand based on the Maloney modelling software are shown in Table 6.2.1. Year 1 is the 2013/14 financial year.

Table 6.2.1 Renewal Expenditure and Demand



6.3 Managing the Funding Gap

As demonstrated in Table 6.2.1, there is a significant gap between renewal demand and proposed renewal expenditure. This is based on current data, which has a relatively poor confidence level, so this gap is unlikely to be an accurate representation.

In order to improve the City's knowledge of its stormwater network data collection will be ongoing in order to improve the accuracy of forecasts contained in subsequent reviews of this plan.

REFERENCES

Asset Management Plan - Overview
Adopted City of Albany Long Term Financial Plan (LTFP) *- For more detailed information on individual projects*

Version Control

Revision No.	Status	Distribution	Issue Date	Comment
0	Draft	Internal only	30/04/13	Draft
1	Draft	Special Council Meeting	25/06/13	Tabled for adoption
2	Final	Special Council Meeting	25/06/13	Adopted

***** DISCLAIMER *****

This information contained in this document is a guide only. Verification with original Local Laws, Acts, Planning Schemes, and other relevant documents is recommended for detailed references. The City of Albany accepts no responsibility for errors or omissions.

City of Albany
Long Term Financial Plan

DRAINAGE ASSOCIATED WITH ROADS

PROPOSED 10 YEAR PROGRAM 2013 - 2023

Description	Details	Expansion	Upgrade	Renewal	2013/14 $'000	2014/15 $'000	2015/16 $'000	2016/17 $'000	2017/18 $'000	2018/19 $'000	2019/20 $'000	2020/21 $'000	2021/22 $'000	2022/23 $'000
Drainage "Upgrade"														
Bayonet Head Meananger Rd	Flood Mitigation - improve storm sump outfall	80%	20%		45.0									
Lake Weelara Park weir and open drains.	Infill open drains		100%			70.0								
Cull Park Catchment	Stage 2- Improve out flow from retention basin in Cull Park to Knights St and Easement opposite Bathurst St	65%	30%	5%			450.0							
Proudlove Pde/UWA Building/Stirling Tce	Installation of new pipe into existing drainage South of Stirling Tce Road Res	100%			70.0									
Green Island/Range Court/Hiam St	Flood Mitigation Design and SoW - design	100%					100.0							
Chester Pass Rd	Improvements to rock pitched drain to reduce over topping - design		50%	50%				100.0						
Proundlove Pde	Timber Box Culvert Replacement near Railway Station	20%	80%		140.0									
Cull Park Catchment	Stage 1 - Re route drainage from ASHS & APS to Symers St away from Campbell Rd design	75%	25%		80.0									
Green Island/Range Court/Hiam St	Increase number of pits and drainage capacity along Green Island Cres currently under capacity.	60%	35%	5%				400.0						
Chester Pass Rd	Improvements to rock pitched drain to reduce over topping	20%	80%								500.0			
Rufus St	Increase number or size of culverts to reduce incidents of creek overtopping.	50%	50%							60.0				
Cull Park Catchment	Stage 4 - Re route drainage from Nelson/ Bluff St down Knight St Road reserve.	40%	60%							500.0				
Henley Grove	Extension of existing pipe, addition of house connections	100%							100.0					
Bay View Dr	Upgrade table drains to accomodate shared path	80%	20%				60.0							
Activ Industries - pit surcharge	Pipe and pit truncation, and tree removal		100%		13.0									
Drome Rd stormwater pipe upgrade	remove restrictions by upgrading pipe size		100%				150.0							
Raliways Football Club - culvert removal	removal of culvert		100%		5.0									
Upgrade Projects		50%		50%						200.0	200.0	900.0	1,000.0	1,000.0
	Drainage Upgrade Total				**353.0**	**70.0**	**760.0**	**500.0**	**100.0**	**760.0**	**700.0**	**900.0**	**1,000.0**	**1,000.0**
Drainage "Expansion New"														
Lower Barnesby Drive	Upgrade Driveway Culvert		40%	60%	1,125.0									
Le Grande Ave. Drainage Basin	Construct new drainage basin	100%							600.0					
Sydney St	Pipe section of open drain		100%							200.0				
Whidby Street	Purchase lot 109 Whidby St to accommodate future capacity from urban development	100%						250.0						
Upper Beaufort Road - Yakamia Creek	land Acquisition	100%				500.0								
Upper Beaufort Road - Yakamia Creek	Reshaping - Realign creek	70%	30%				900.0							
Whidby Street	Reshaping - Increase capacity of attenuation basin, on Whidby St		100%					350.0						
Sanford Road Basin		100%							500.0					
Expansion Projects		100%								200.0	200.0	200.0	200.0	200.0
	Drainage Expansion Total				**1,125.0**	**500.0**	**900.0**	**600.0**	**1,100.0**	**400.0**	**200.0**	**200.0**	**200.0**	**200.0**
Drainage "Renewal"														
Renew damaged pit covers	Replace damaged and worn drainage pits covers, raise buried pits.			100%	22.5	25.0	25.0	50.0						
Frederick St/Aberdeen/Peels Pl verge -	crossover footpath	20%	60%	20%	30.0									
Maitland Ave	raised verge & kerb		80%	20%	10.0									
Cull Park Catchment	Stage 3 - Re route drainage from ASHS & APS to Symers St away from Campbell Rd	40%	60%				120.0							
Rufus St	Increase number or size of culverts to reduce incidents of creek overtopping.	50%	50%			60.0								
Renew Heritage stone open drains	Renewal of heritage open drains, beginning with Grey St East			100%		125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0
Renewal Projects				100%		250.0	250.0	250.0	400.0	400.0	600.0	600.0	600.0	600.0
	Drainage Renewal Total				**62.5**	**460.0**	**520.0**	**425.0**	**525.0**	**525.0**	**725.0**	**725.0**	**725.0**	**725.0**
	Total Drainage				**1,540.5**	**1,030.0**	**2,180.0**	**1,525.0**	**1,725.0**	**1,685.0**	**1,625.0**	**1,825.0**	**1,925.0**	**1,925.0**
	Proposed Funding													
	- Grants				869.0	-	-	-	-	-	-	-	-	-
	- Reserves				-	-	-	-	-	-	-	-	-	-
	- Loans				-	-	-	-	-	-	-	-	-	-
	Impact on general Revenue				**671.5**	**1,030.0**	**2,180.0**	**1,525.0**	**1,725.0**	**1,685.0**	**1,625.0**	**1,825.0**	**1,925.0**	**1,925.0**