



Stormwater Infrastructure Asset Management Plan 2012

Adopted
11 December 2012

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Front Cover

Tarragon Street, Mile End

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Bernadette Ward
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Welcome to our Country

The City of West Torrens acknowledges the Kaurna Aboriginal people and their descendants are still and will always be the first peoples of the land. The City of West Torrens commits to valuing and supporting the Kaurna people's inherent relationship to the land.

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ABBREVIATIONS

AAAC	Average annual asset consumption
AMP	Asset management plan
ARI	Average recurrence interval
BOD	Biochemical (biological) oxygen demand
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DoH	Department of Health
EF	Earthworks/formation
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
MMS	Maintenance management system
PCI	Pavement condition index
RV	Residual value
SS	Suspended solids
vph	Vehicles per hour

GLOSSARY

Annual service cost (ASC)

An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operating, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset class

Grouping of assets of a similar nature and use in an entity's operations (AASB 166.37).

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset management

The combination of management, financial, economic, and engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Assets

Future economic benefits controlled by the entity as a result of past transactions or other past events (AAS27.12).

Property, plant and equipment including infrastructure and other assets (such as furniture and fittings) with benefits expected to last more than 12 month.

Average annual asset consumption (AAAC)*

The amount of a local government's asset base consumed during a year. This may be calculated by dividing the Depreciable Amount (DA) by the Useful Life and totalled for each and every asset OR by dividing the Fair Value (Depreciated Replacement Cost) by the Remaining Life and totalled for each and every asset in an asset category or class.

Brownfield asset values**

Asset (re)valuation values based on the cost to replace the asset including demolition and restoration costs.

Capital expansion expenditure

Expenditure that extends an existing asset, at the same standard as is currently enjoyed by residents, to a new group of users. It is discretionary expenditure, which increases future operating, and maintenance costs, because it increases council's asset base, but may be associated with additional revenue from the new user group, eg. Extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capital new expenditure

Expenditure which creates a new asset providing a new service to the community that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operating and maintenance expenditure.

Capital renewal expenditure

Expenditure on an existing asset, which returns the service potential or the life of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time, eg. Resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital upgrade expenditure

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that, will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operating and maintenance expenditure in the future because of the increase in the council's asset base, eg. Widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

An individual part of an asset which contributes to the composition of the whole and can be separated from or attached to an asset or a system.

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, plus any costs necessary to place the asset into service. This includes one-off design and project management costs.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Current replacement cost "As New" (CRC)

The current cost of replacing the original service potential of an existing asset, with a similar modern equivalent asset, i.e. the total cost of replacing an existing asset with an as NEW or similar asset expressed in current dollar values.

Cyclic Maintenance**

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, cycle, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value (AASB 116.6)

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital.

Fair value

The amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Greenfield asset values **

Asset (re)valuation values based on the cost to initially acquire the asset.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services, eg. Roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets the components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) Use in the production or supply of goods or services or for administrative purposes; or
- (b) Sale in the ordinary course of business (AASB 140.5)

Level of service

The defined service quality for a particular service against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost).

Life Cycle Cost **

The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure **

The Life Cycle Expenditure (LCE) is the actual or planned annual maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to Life Cycle Cost to give an initial indicator of life cycle sustainability.

Loans / borrowings

Loans result in funds being received which are then repaid over a period of time with interest (an additional cost). Their primary benefit is in 'spreading the burden' of capital expenditure over time. Although loans enable works to be completed sooner, they are only ultimately cost effective where the capital works funded (generally renewals) result in operating and maintenance cost savings, which are greater than the cost of the loan (interest and charges).

Maintenance and renewal gap

Difference between estimated budgets and projected expenditures for maintenance and renewal of assets, totalled over a defined time (eg 5, 10 and 15 years).

Maintenance and renewal sustainability index

Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Maintenance expenditure

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

An item is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial report. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances.

Modern equivalent asset.

A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. Parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operating expenditure

Recurrent expenditure, which is continuously required excluding maintenance and depreciation, eg power, fuel, staff, plant equipment, on-costs and overheads.

Pavement management system

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

Planned Maintenance**

Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption*

A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount (AAAC/DA). Depreciation may be used for AAAC.

Rate of annual asset renewal*

A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade*

A measure of the rate at which assets are being upgraded and expanded per annum expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Reactive maintenance

Unplanned repair work that carried out in response to service requests and management/supervisory directions.

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operating and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining life is economic life.

Renewal

See capital renewal expenditure definition above.

Residual value

The net amount which an entity expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The capacity to provide goods and services in accordance with the entity's objectives, whether those objectives are the generation of net cash inflows or the provision of goods and services of a particular volume and quantity to the beneficiaries thereof.

Service potential remaining*

A measure of the remaining life of assets expressed as a percentage of economic life. It is also a measure of the percentage of the asset's potential to provide services that are still available for use in providing services (DRC/DA).

Strategic Management Plan (SA)**

Documents Council objectives for a specified period (3-5 yrs), the principle activities to achieve the objectives, the means by which that will be carried out, estimated income and expenditure, measures to assess performance and how rating policy relates to the Council's objectives and activities.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) The period over which an asset is expected to be available for use by an entity, or
- (b) The number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the council. It is the same as the economic life.

Value in Use

The present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate new cash flows, where if deprived of the asset its future economic benefits would be replaced.

Source: DVC 2006, Glossary

Note: Items shown * modified to use DA instead of CRC
Additional glossary items shown **

1. EXECUTIVE SUMMARY

The Council, as a responsible authority, strives to provide services that are commensurate within the means of the community. The stormwater system provided ensures Councils responsibility to maintain the city's infrastructure assets in a condition that provides an adequate level of service that will prevent flooding.

As stormwater drainage asset owners, it is incumbent on Council, when arranging for the carrying out of condition assessments and performance measurement, to satisfy them that all relevant legislative provisions have been taken into account when determining the performance rating for stormwater drainage systems or its components.

The operators and maintainers of public infrastructure need to exhibit a duty of care that can be thought to comprise three components in respect to planning, design, construction, operation and maintenance of that infrastructure:

- Adherence to all relevant legal obligations contained in Federal and State Statutes and Regulations and Local Government By-Laws;
- Adherence to all relevant Australian Standards, Codes of Practice, Guidelines and Manuals as well as Operating Manuals and Maintenance Manuals for each component;
- An obligation to the public at large wherein there is an expectation or reliance by the public on the expertise and diligence of managers, operators and maintainers of the infrastructure to provide for the protection of public safety, finance prudence and environmental protection consequential to that infrastructure.

The Local Government (Financial Management and Rating) Amendment Act, 2005, introduces accountability measures to strengthen provisions that require Councils to give careful attention to strategic planning matters in consultation with their communities. The accountability measures add new obligations when undertaking long term infrastructure, asset management and financial planning and impose new requirements to conduct annual consultation with ratepayers regarding budgets, rating strategies and business plans.

In meeting the above needs, City of West Torrens has recognised the importance of asset management. Council has subsequently adopted on 7 November 2006 an Asset Management Policy and updated this Infrastructure Asset Management Plan (IAMP). The goal of the IAMP is to ensure that adequate provisions are made for existing and future infrastructure so that assets are fully utilised (i.e. their design life is achieved) in a cost effective manner.

This IAMP also presents financial forecasts based on the principles / methodologies found in the "City of West Torrens, Initial Urban Stormwater Master Plan, November 2003".

In order to ensure that the Council manages its stormwater assets in a manner most appropriate for the community, Council has committed to the following strategies for the management of urban stormwater runoff from an urban catchment:

- Strategy 1: Develop a Master Drainage Plan (Urban Stormwater Master Plan)**
- Strategy 2: Develop a 20-year Stormwater Drainage Capital Works Program.**
- Strategy 3: Develop key stormwater drainage requirements for appropriate management and implementation of future developments.**
- Strategy 4: Identify potential land use areas for local catchment storage and reuse of stormwater.**
- Strategy 5: Investigate innovation best practice stormwater management methods of setting a benchmark for the City of West Torrens.**

In total, the stormwater assets that have been considered in the IAMP have a total replacement value of over **\$96,361,695** (June 2012).

The IAMP also presents financial forecasts (**Appendix A**) of Councils **141km of reinforced concrete pipes** and **17km of box culvert drains** based on preliminary findings within “Initial Urban Stormwater Master Plan, November 2003” by Tonkin Consulting and by the projected model developed within “Sustainable Asset Management in South Australia – A Guided Pathway to Asset Management Planning”

Current information along with the analysis of the stormwater network has identified that over the next ten years **\$8,691,310** will be required for identified projected renewal works. The majority of these renewals are identified as work required on the Anzac Highway stormwater network. Their actual physical condition will be verified on site as they have been based on the assets end of life rather than condition. An amount of **\$3,354,080** (includes staff labour costs) has been assumed for Reactive and Planned Maintenance. A total of **\$17,993,970** has been identified as being required for new/upgrade works. These new/upgrade works have been scoped via the findings as identified within Figure 2.5 “Initial Urban Stormwater Master Plan, November, 2003” (Appendix B). These findings identify existing stormwater networks that are under capacity for the required level of service, i.e. not up to a 5 Year Average Recurrence Interval (ARI) standard. A preliminary estimate to upgrade these stormwater systems is in the vicinity of **\$160,000,000**. The costing for these works are preliminary estimates as detailed designs are required to be undertaken together with costing. As Council progresses with its Urban Stormwater Master Plan, and additional information is attained, revised works and costing will be included in future revisions of the IAMP. In total **\$30,039,360** of funds over the next 10 years are represented within this Plan and are based on 2012 dollar values.

In addition, over the next ten years an allocation of **\$36,093,207** (Inflated future cost) to undertake works identified in the Brown Hill Keswick Creek Draft Stormwater Management Plan.

Since the last IAMP September 2008, the new/upgrade works as identified in Figure 2.6 within the “Initial Urban Stormwater Master Plan, November, 2003 (Appendix C) is near complete. Only some minor systems remain to be constructed to service areas of the City with no underground stormwater drainage. During this time two major pump stations have been renewed/upgraded.

The focus of expenditure in the short term is on new and upgrade works, in particular the upgrading of Brown Hill Creek drainage channel. Only a small amount of the expenditure has been allocated to the renewal of stormwater assets. However as the remaining useful life of the stormwater network reduces there will be an emerging need to allocate funds to stormwater renewal into the future.

Continuous improvement of asset management processes, knowledge and data will result in a more efficient service delivery and performance for Council and its users. Two improvements have been scoped for implementation over the next two financial years. These projects will improve Council's processes, knowledge and data, and are as follows:

- Develop a monitoring program that allows ready identification and analysis of the nature and type of development that is occurring in the catchment. As the impact of development is significant, monitoring would provide valuable data to enable runoff to be reviewed and to assess whether long term predictions of development in the catchment are reasonable. Of particular significance is data relating to the change in impervious area by any development.
- Develop a condition assessment methodology for rating the overall network. This would allow measurement in an objective way to assist subsequent decision making about the level of service being provided by the stormwater .drainage assets.

The key issues highlighted by this IAMP are as follows:

- **Growth in the city and the corresponding need for asset growth/upgrade.**
- **Gaining a clear understanding of the community requirements for levels of service.**
- **Adapting change in service levels from those based on historic allocations to more condition-based models and to address backlog maintenance issues.**
- **Implementing pro-active change in phasing increase scheduled and cyclic maintenance, rather than reactive maintenance.**
- **Understanding the funding allocations required to support the levels of service according to community and legislative expectations.**
- **This IAMP includes recommendations that the following projects be undertaken:**
 - **Planning and implementing an operation and maintenance strategy**
 - **Analysing the lifecycle of assets**
 - **Develop a methodology for condition rating the stormwater network**
 - **Regularly reviewing and amending the IAMP**
 - **Review the resources available to implement the IAMP effectively**

2. INTRODUCTION

The City of West Torrens is located immediately west of the Central Business District (CBD). It is bounded by the River Torrens, City of Charles Sturt to the north and Cities of Holdfast Bay, Marion and Unley along its southern boundary. The eastern boundary is the western edge of the City of Adelaide Parklands. The western boundary includes a strip of coastal land which abuts the Gulf of St Vincent. The City covers an area of 36 square kilometres. It has a population of 56,960 (Census 2011).

The major land uses as a percentage of the total land area in the City are as follows:

- Residential - 40%
- Commercial/Industrial - 22.5%
- Adelaide Airport – 20%
- Other uses – 17.5%

The primary shopping centres are located in Kurralta Park, Torrensville and Hilton. Commercial developments are generally located along the main arterial footpaths. The areas experiencing greatest changes are the Adelaide Airport, the industrial zones in particular around Thebarton and Mile End, and in-fill residential developments. The West Torrens Community Profile identifies that overall there has been a general trend of decreasing dwelling approvals falling from **298 in 2010-11 to 243 in 2011-12**. Approximately **66.8%** of the City's housing stock is **detached dwellings** on individual allotments. This highlights the potential for a significant increase in housing stock through in-fill development, such as detached dwellings being replaced by two and sometimes three new dwellings.

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding required providing the required levels of service.

The purpose of this IAMP is to provide a strategic tool for Council to manage stormwater assets, comply with regulatory requirements, and to determine funding allocations to provide the required levels of service expected by the community.

Council has acquired, constructed and maintained this stormwater network to provide a benefit to the community. The size, costs of replacement and ongoing maintenance, and proposed management systems for this stormwater network to the community are presented in the following chapters.

Council has a duty of care to the community to ensure that the investment in this stormwater network is managed in the most efficient and effective way, from concept planning to disposal. The life cycle cost of stormwater assets includes the total cost of planning, design, construction, maintenance and operations, rehabilitation and disposal. All physical components deteriorate and there is a need to ensure that the rate of deterioration is understood, as well as that the most appropriate maintenance activities are employed. It is therefore essential that the stormwater network is designed to meet the appropriate levels of service over its design life and that maintenance and rehabilitation is applied at the most cost effective time.

The City of West Torrens forms part of the western suburbs of metropolitan Adelaide. The catchment of underground drainage systems running through the City is approximately bounded by the River Torrens to the north, the CBD fringe to the east, Anzac Highway to the south and the coastal suburbs to the west. The catchment is relatively flat and generally grades from east to west.

Stormwater runoff from the Council area is collected by a network of underground drains and channels. The majority of this runoff drains into the Patawalonga Lake (Barcoo Outlet), with some smaller areas discharging into the River Torrens and directly into the Gulf St Vincent.

The primary aim of the urban stormwater management system to ensure stormwater generated from developed catchments causes minimal nuisance, danger and damage to people, property and the environment. The Stormwater Drainage System shall meet the relevant Australian standards and multiple objectives to be considered, such as:

- Ecosystem health, both aquatic and terrestrial;
- Flooding and drainage control;
- Public health and safety;
- Economic considerations;
- Recreational opportunities;
- Social considerations;
- Aesthetic values.

The IAMP is to be read in conjunction with the following associated planning documents:

- Asset Management Policy, 7 November 2007
- Asset Management Strategy June 2005
- Torrens & Patawalonga Catchment Water Management Plan 2002-2007
- City of West Torrens "Initial Urban Stormwater Master Plan, November 2003
- Towards 2025 Community Plan, July 2009
- Business Development Plan
- Section 30 Development Plan Review, September 2008
- Environmental Management Action Plan
- Community Land Management Plan
- Adopted Budget and Annual Business Plan 2012/13

This asset management plan covers the Council's stormwater assets as shown below in Table 2.1 and Chart 2.1a and Chart 2.1b on the next page.

Table 2.1 Assets covered by this Plan

Asset Category	Amount	Replacement Value
Box Culvert	17.08 Km's	\$19,971,812
Field Gully	21 Units	\$86,246
Gross Pollutant Trap	5 Units	\$266,340
Junction Box	854 Units	\$2,868,327
Open Channel	2 Units	\$3,044,835
Pump Station*	1 Unit	\$1,192,333
Side Entry Pit	2941 Units	\$7,624,060
Stormwater Pipe	141.10 Km's	\$60,855,144
Water Sensitive Urban Design - Pod	47 Units	\$452,598
Total		\$96,361,695

Valuations as at 30 June 2012

*Chippendale Ave, Shannon Ave & Strathmore Ave pump stations will be valued and added to future reiterations of this plan.

Chart 2.1a Value Distributions of Stormwater Assets Covered in this IAMP

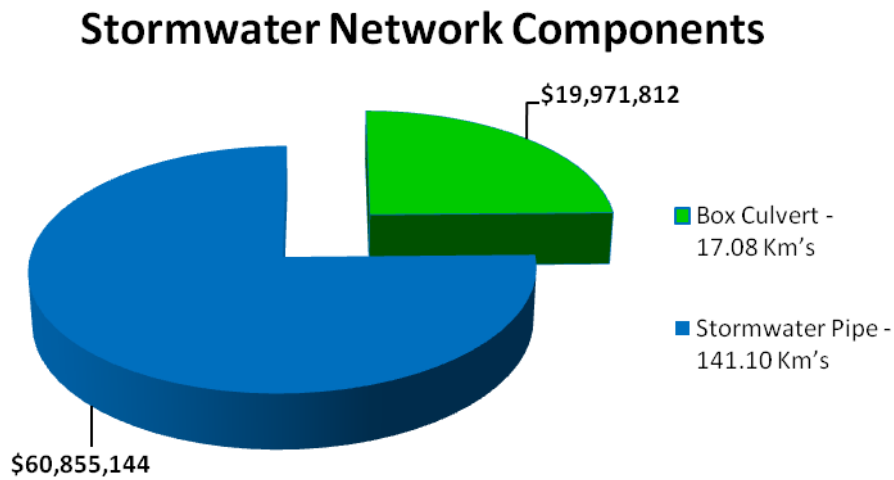
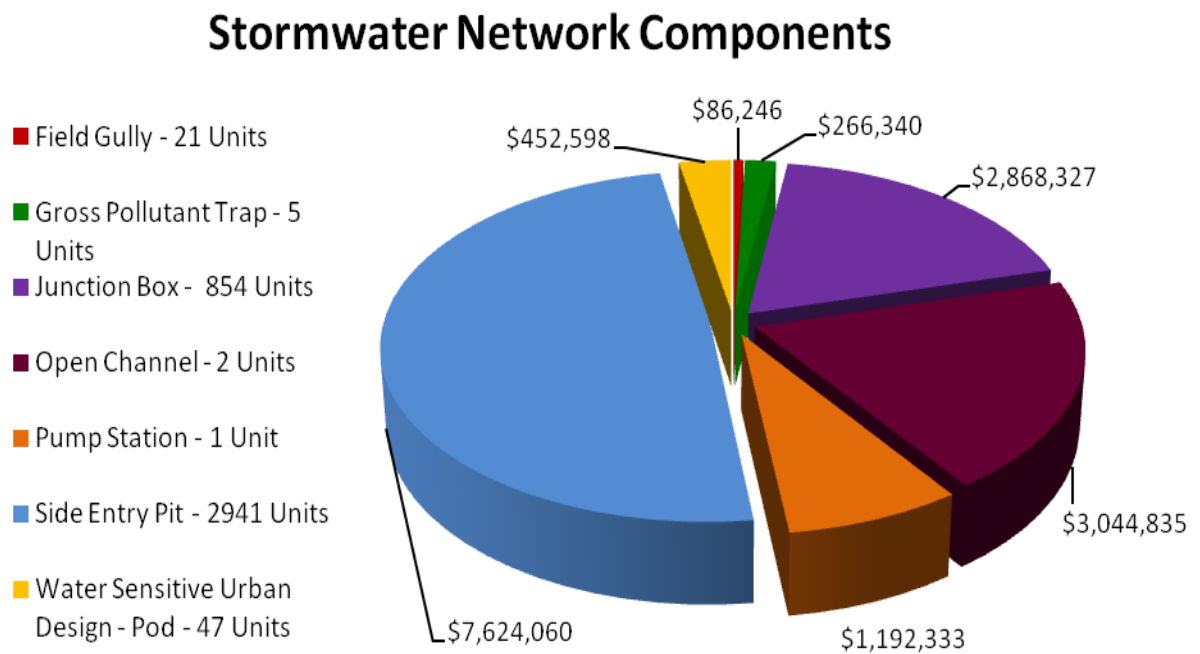


Chart 2.1b Value Distribution of Stormwater Network Components Assets Covered in this IAMP



Key stakeholders in the preparation and implementation of this IAMP are shown below in Table 2.1.1:

Table 2.1.1 Key Stakeholders

Key Stakeholders	Function
Council Works Services Department	Programming of maintenance and capital works, preparation and revision of asset management plans.
Council City Assets Department	Programming of maintenance and capital works, preparation and revision of asset management plans.
Council Finance Department	Allocation of required funds for the implementation of this asset management plan.
Council Strategic Planning Department	Recreation and Open Space Planning.
Community	End users of Councils stormwater service
Council Elected Members	Approval of the asset management plan and make policy decisions relating to the provision of service
Insurers	Partner with Council to mutually cover risk exposure.
Developers	Meet Council requirements for new development within the stormwater catchments.
Governments	Regulations / Acts. Funding.

2.2 Goals and Objectives of Asset Management

The Council exists to provide services to its community. Some of these services are provided by infrastructure assets. Council has acquired infrastructure assets by 'purchase', by contract, construction by council staff and by donation of assets constructed by developers and others to meet increased levels of service.

Council's goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach,
- Developing cost-effective management strategies for the long term,
- Providing a defined level of service and monitoring performance,
- Understanding and meeting the demands of growth through demand management and infrastructure investment,
- Managing risks associated with asset failures,
- Sustainable use of physical resources,
- Continuous improvement in asset management practices.¹

¹ IIMM 2006 Sec 1.1.3, p 1.3

This asset management plan is prepared under the direction of Council's vision, mission, goals and objectives.

Council's vision is:

West Torrens – Between the City and the Sea

Committed to being the best place to live, work and enjoy life.

Council's mission is:

To strive for excellence in serving our diverse community.

Table 2.2 below identifies the relevant Council value and value statements which are addressed in this IAMP.

Table 2.2 Council Values and how these are addressed in this Plan

Value	Value Statement	How Values and Value Statements are addressed in IAMP
Accountability	We act on behalf of the West Torrens community and are therefore accountable to them for our actions.	Accountability to the community is enhanced in the IAMP by the minimisation of monetary resources through the development and use of a least life cycle cost technique.
Advocacy	We will act as an advocate with other levels of government and the private sector to help achieve Council's Vision.	Legislation.
Inclusively	We will foster the development of an inclusive city; one that recognises the value of all people celebrates their diversity and treats them all with respect and dignity.	Consultation with the community occurs with community forums. The concerns of the community are taken into account in preparation of the forward works program. Data on the forward works plan is made available to the community.
Community Involvement	We will regularly consult with our community and seek to actively engage them in the operations, functions and activities of Council.	Participation in the Local Government Association of South Australia Comparative Performance Measures in Local Government Customer Satisfaction survey. Consultation with the community occurs with community forums. The concerns of the community are taken into account in preparation of the forward works program. Data on the forward works plan is made available to the community.
Community Capacity	We will work with local communities to assist them to strengthen their support and problem solving resources, so that they may obtain more control over their relationships, resources, learning, information and decision-making.	Sustainability of community services is enhanced by targeted funding for specific infrastructure. Data on Council stormwater is enhanced through the preparation of this IAMP. Data on forward works programs is available. Levels of Service.
Quality	We will provide quality services that are continuously improving, focused on customer service and accountable to the community.	The concerns of the community are taken into account in preparation of the forward works program. Additional financial accountability through long term financial planning leads to increased quality in the levels of service provided to the community. Future demand identification.
Healthy Communities	Work in partnerships with stakeholders to provide a safe, clean, healthy and sustainable environment, one that balances social, cultural, heritage, environmental and economic factors.	Exploring the future vision for the provision of social services by the creation of city-wide multipurpose community facilities, These multi-purpose facilities would provide a range of community services that are of a social, recreational, arts and cultural nature.

2.3 Plan Framework

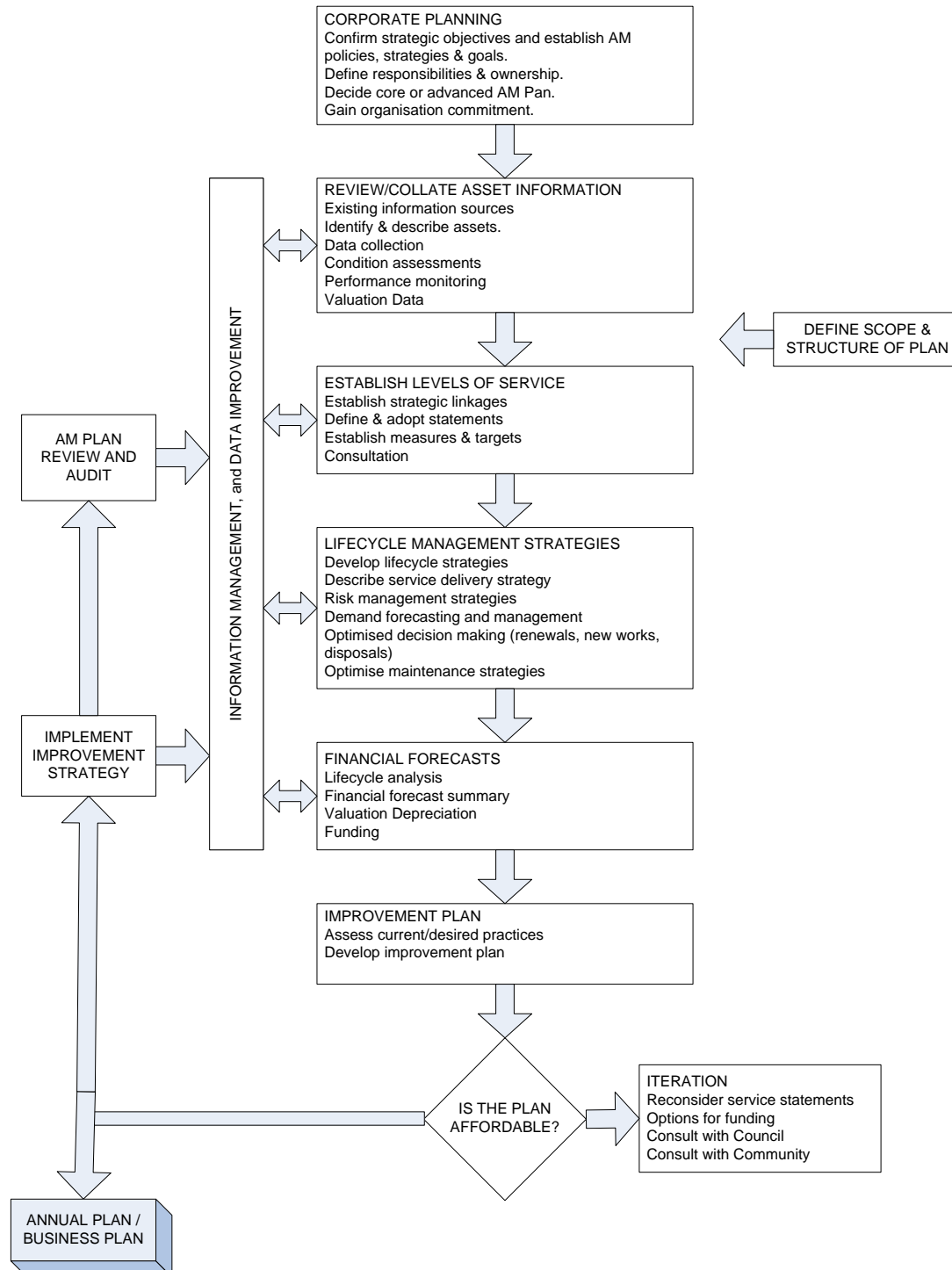
Key elements of the plan are:

- Levels of service – specifies the services required and the levels of service to be provided by council.
- Future demand – how this will impact on future service delivery and how this future demand is to be met.
- Life cycle management – how Council will manage its existing and future assets to provide the required services.
- Financial summary – what funds are required to provide the required services.
- Asset management practices – best practice approach to management of assets.
- Monitoring – how the plan will be monitored to ensure it is meeting Council's objectives.
- Asset management improvement plan – strategic plan to guide Council over the long term.

A road map, for preparing an asset management plan is shown in Figure 2.3 on the next page.

Figure 2.3 Road Map for preparing an Asset Management Plan

Source: IIMM Fig 1.5.1, p 1.11



2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan in accordance with the International Infrastructure Management Manual. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

Future revisions of this asset management plan will move towards 'advanced' asset management using a 'bottom up' approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels.

3. LEVELS OF SERVICE

Levels of service dictate the targeted asset performance in relation to customer expectations, and associated legislative and technical provisions. They also provide achievable milestones for the continuous upgrading of the levels of service currently practised.

Understanding the level of service required of an asset is vital for its lifecycle management as this largely determines an asset's development, operation, maintenance, replacement and disposal. Levels of service are pivotal in asset management as they have a direct financial impact due to their importance in both operational and risk-based prioritisation.

When establishing Levels of Service they should be based on:

- Stakeholder Expectations – information gained from stakeholders on expected quality and price of services.
- Strategic and Corporate Goals – provides guidance for the scope of current and future services offered the manner of the services delivery and defines the specific levels of service, which Council wishes to achieve.
- Legislative Requirements – legislation, regulations, environmental standards and industry and Australian Standards that impact on the way these stormwater assets are managed.

3.1 Customer Research and Expectations

The City of West Torrens Council has prepared this stormwater asset management plan as an updated IAMP. Council has undertaken a Community Satisfaction Survey in 2012 whereby the survey was emailed to the Council's Community Panel and further person to person surveys were used to complete the process of setting the levels of service.

Council's knowledge of customer expectations is based on feedback from elected members' analysis of customer services request and complaints and customer satisfaction measurement surveys. In particular, Council engaged the University of South Australia – Ehrenberg-Bass Institute for Marketing Science to distribute the Community Satisfaction survey. In total, 135 members of the Panel participated and completed the survey, equating to a 53% response rate. In addition, the survey was undertaken by 229 non-panel members, primarily collected through intercept surveys. Therefore in total 364 responses were recorded from the participants.

The report detailed the findings of the community research undertaken by the Ehrenberg-Bass Institute for Marketing Science (the 'Institute') for the City of West Torrens, regarding community assets and infrastructure. The statistics provide from the survey assisted in determining the level of satisfaction with Council's services.

This most recent Community Satisfaction Survey (September 2012) is shown in Table 3.1 and Table 3.1.1 below.

Table 3.1 depicts the community's satisfaction with Council's provision and management of stormwater assets which was calculated based on the percentage of the number of respondents from a total of 364 responses.

Respondents were asked to indicate the importance that Council provides and maintains the stormwater assets and then asked about their satisfaction with Council's performance when providing and maintaining these community assets and infrastructure. An overwhelming majority of respondents believed that it is important for Council to provide and maintain stormwater assets and over half of the respondents indicated that they were satisfied.

Table 3.1 Community Satisfaction Survey Results

Stormwater Assets		
Answer	Total Respondents	Total (%)
Important	322	91
Satisfied	196	55

Data source – University of South Australia – Ehrenberg-Bass Institute for Marketing Science – City of West Torrens Community Satisfaction Survey 2012

The 2012 Community Satisfaction Survey results on the level of community satisfaction on Councils performance in maintaining stormwater assets is seen in Table 3.1.1 below.

Table 3.1.1 Community Satisfaction Survey Levels

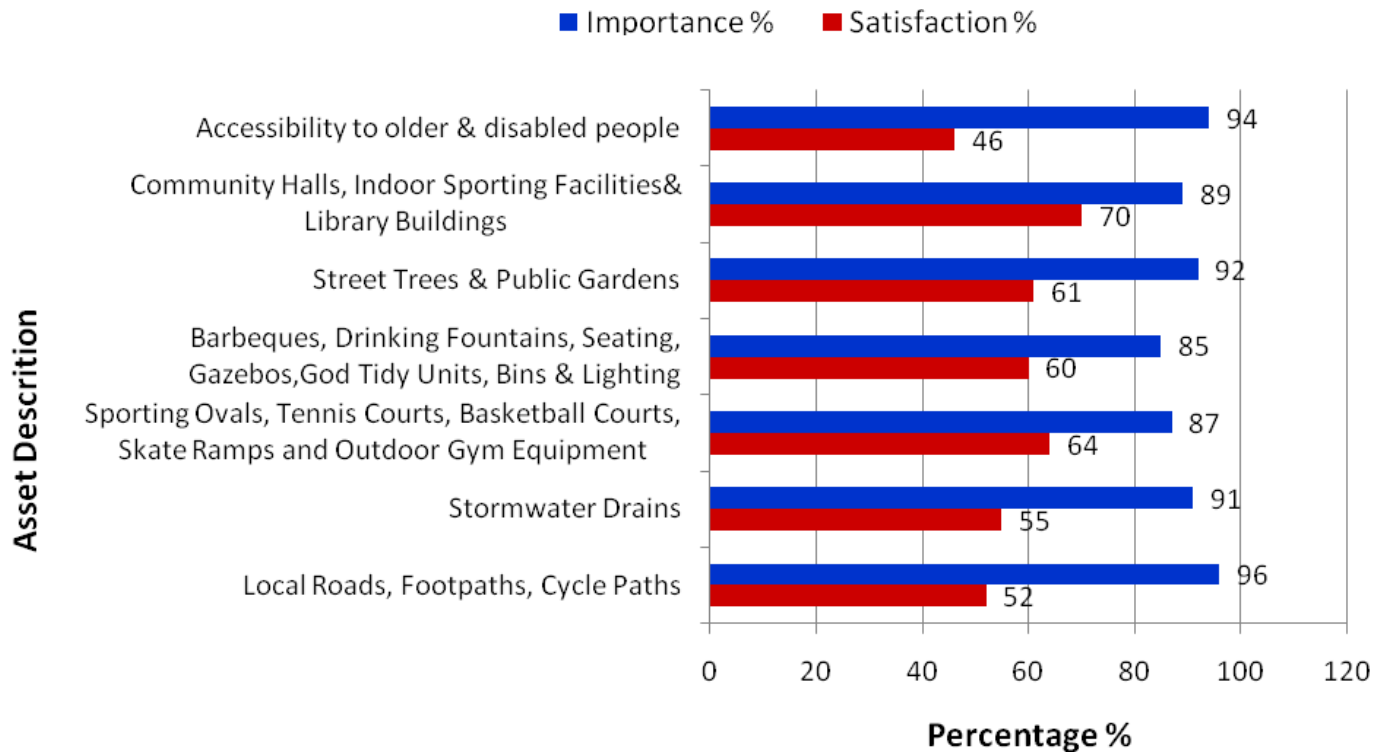
Performance Measure	Satisfaction Level				
	Very Satisfied	Fairly Satisfied	Satisfied	Somewhat satisfied	Not Satisfied
	100% – 80%	80% – 60%	60% – 40%	40% – 20%	20% – 0%
How has your council performed in providing and maintaining stormwater assets?			√		

Data source – University of South Australia – Ehrenberg-Bass Institute for Marketing Science – City of West Torrens Community Satisfaction Survey 2012

Council utilises this information in developing the Council's Strategic Management Plan and for the allocation of resources in the adopted budget and annual business plan.

Furthermore, the 2012 Community Satisfaction Survey results from the University of South Australia – Ehrenberg-Bass Institute for Marketing Science provided a comparison of data across all Council assets which has been summarised in Graph 3.1 on the next page.

Graph 3.1 Community Importance and Satisfaction Survey Results



Council uses this information in developing the Strategic Management Plan and in allocation of resources in the budget.

3.2 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. The key pieces of applicable legislation are listed in Table 3.2 below.

Table 3.2 Legislative Requirements

Legislation	Requirement
Australian Accounting Standard	Financial reporting.
Development Act 1993	An Act to provide for planning and regulate development in the State; to regulate the use and management of land and buildings, and the design and construction of buildings; to make provision for the maintenance and conservation of land and buildings where appropriate.
Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by IAMP's for sustainable service delivery.
Occupational Health, Safety and Welfare Act 1986	An Act to provide for the health, safety and welfare of persons at work.
Public and Environmental Health Act 1987	An Act dealing with public and environmental health.
Environment Protection Act	An Act to provide for an Environmental Protection Authority, for the prevention, control and abatement of pollution and environmental harm and for the conservation, preservation, protection, enhancement and management of the environment.
Water Resources Act 1997	Act to provide for the management of the State's water resources.
Environment Protection (Water Quality) Policy EPA 2003	Prohibits the disposal of treated effluent to all waterways.
Local Government (Stormwater Management) Act 2007	An Act dealing with stormwater management.
Minister's Specification for Stormwater Management	Minister's Specification for Stormwater

3.3 Current Levels of Service

Council has defined service levels in two terms.

Community Levels of Service relate to how the community receives the service in terms of safety, quality, quantity, reliability, responsiveness, cost/efficiency, affordability and legislative compliance requirements and sustainability.

Supporting the community service levels are operational or technical measures of performance developed to ensure that the minimum community levels of service are met. These technical measures relate to service criteria such described in Table 3.3 below.

Table 3.3 Technical measures relating to service criteria

Service Criteria	Technical measures may relate to
Quality	Structural integrity of pipe
Quantity	Sufficient capacity and provision of underground stormwater system
Safety	Protection to properties from 100 Year ARI

Council's current service levels are detailed below in Table 3.3.1

Table 3.3.1 Current Service Levels

Key Performance Measure	Level of Service	Performance Measure Process	Performance Target	Current Performance
COMMUNITY LEVELS OF SERVICE				
Quality **	Provide well maintained stormwater facilities	User satisfaction measurement survey	Community satisfaction ≥90%	52 (2012)
Function **	Ensure stormwater meets community expectation	Customer requests relating to property flooding	< 5 per annum	To be determined
Safety **	Provide stormwater system that is low risk to community	Number of injuries/ property damage	< 5 per annum	Nil
TECHNICAL SERVICE LEVELS				
Condition	Periodic visual assessment to determine condition	CCTV inspections	Network audit to be completed within 20 years	Small proportion of network <5% under reactive style measures
Function	Ensure stormwater system has appropriate design capacity	All systems have a 5 Year ARI	100%	39 %
Safety	Provide stormwater system that is low risk to community	No of Properties inundated in 100 Year ARI storm event	Zero – over floor 90% - underfloor	Nil (2011/12)

Note: Information provided is based on the 2011/12 financial year

*** As targets for levels of service provide the basis for lifecycle management strategies and works programs, the current levels of service will be reviewed to incorporate and satisfy the requirements of customers in subsequent versions of this plan.*

Council will attempt to measure levels of service using the following customer values:

- Affordability / cost effectiveness – is the customer able to pay for the service level being delivered?
- Appearance – what is the customer's perception of how the asset impacts on their visual senses?
- Condition – what is the customer's perception of the overall condition of the asset?
- Demand – does the asset or lack thereof meet the customers need?

3.4 Desired Levels of Service

At present, indications of desired levels of service are obtained from various sources including the 2012 Customer Satisfaction survey, residents' feedback to Councillors and staff, service requests and correspondence. Council is currently in the process of quantifying the desired levels of service and will be reported the future revision of the asset management plan.

Currently the design standard for proposed upgrading works on the main drains or new works within the catchment are based on an assessment of physical constraints, construction costs and the consequences of the drainage system surcharging. The main drains form the outfall for lateral drainage systems serving the catchment and its capacity therefore needs to match or exceed the capacity of these systems to enable them to function adequately. The 5 year ARI design standard that was selected for the Cowandilla Mile End Outfall Works is considered to be appropriate based on these factors. However, it should be noted that this design standard is the minimum that is considered to be acceptable and it should not be reduced by future development.

In accordance with generally accepted practice, the historical use of a 5 year ARI design standard for new lateral drainage systems in the catchment should be continued. While this standard is considered to be an appropriate objective, there is some scope to reduce the standard to a 2 year ARI on roads that are not used as major transport routes, provided that adequate surface flow paths are available for major flows.

Where property is likely to be inundated as a result of overflow of the underground drainage system (for example at a trapped low point), a higher design standard (up to a 100 year ARI) is appropriate. However, in most locations within the City of West Torrens area, physical constraints, the capacity of the downstream drainage system or the cost of carrying out works is likely to limit the design standard that is able to be achieved. In these circumstances, any works carried out to improve the degree of flood protection provided to property should provide the highest design standard (up to a 100 year ARI) that can be practically achieved within the given constraints.

Based on the above, the following catchment specific objectives for management of flooding in the City of West Torrens have been set. Due to the different constraints that are present in new and existing areas of development, different objectives have been set for each of these areas.

For new development undertaken within the catchment the following flood management objectives will apply:

- | | |
|----------------------|---|
| Objective 1.1 | Protect all properties from inundation in a 100 year ARI event. |
| Objective 1.2 | Provide an underground drainage system having a minimum capacity sufficient to carry a 5 year ARI flow. |
| Objective 1.3 | Ensure that gutter flow widths within any local street are limited to a maximum width of 2.5 m during a 5 year ARI rainfall event. The gutter flow widths along major transport routes should be limited and shall comply in accordance with the design requirements set out by Transport SA for these roads. |
| Objective 1.4 | Ensure that runoff from any new development does not increase the degree of flood risk to other properties for all events up to a 100 year ARI. |

Within areas of existing development within the catchment, the following flood management objectives will apply:

- Objective 1.5** Where economically and practically viable, protect existing development from inundation in a 100 year ARI event. A lower standard of flood protection may be adopted where physical and economic constraints limit the ability to achieve a 100 year ARI level of protection. Where a lower standard is adopted, this should be justified based on an assessment of the saving in construction costs relative to the increase in flood damage costs.
- Objective 1.6** Where economically and practically viable, provide an underground drainage system having sufficient capacity to carry a 5 year ARI event. A lower underground drainage standard (as low as 2 year ARI) may be adopted in existing developed areas provided that adequate surface flow paths are available to carry major flows and the consequences of nuisance flooding of roadways are not significant.
- Objective 1.7** Where economically and practically viable, construct outfall channels having sufficient capacity to carry the 100-year ARI event. A lower standard may be adopted in existing developed areas provide that adequate surface flow paths are able to carry major flood flows without major damage to existing development.

4. FUTURE DEMAND

This section identifies the effect of expected growth and consequent demand on Council's stormwater asset infrastructure. Forecasting future demand is essential in determining life cycle management for assets. The management of stormwater assets is directly affected both by growth in the number of assets and growth in the resident as well as visiting populations.

4.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, Section 30 Development Plan Reviews, 30 Year Greater Adelaide Plan etc.

Demand factor trends and impacts on service delivery are summarised below in Table 4.1.

Table 4.1 Demand Factors, Projections and Impact on Services

Demand factor	Present position	Projection	Impact on Services
Population	56,960	Population projections indicate that the City of West Torrens is likely to experience a slight decline in population in the medium to long term, should all other factors remain constant.	Little or no impact
Urban Consolidation	66.8 % of the City's housing stock is detached dwellings.	A trend is occurring where detached dwellings are being replaced by two and sometimes three new dwellings, (Urban in-fill)	Additional impervious area through urban consolidation will result in additional runoff into the stormwater drainage system.

Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011.

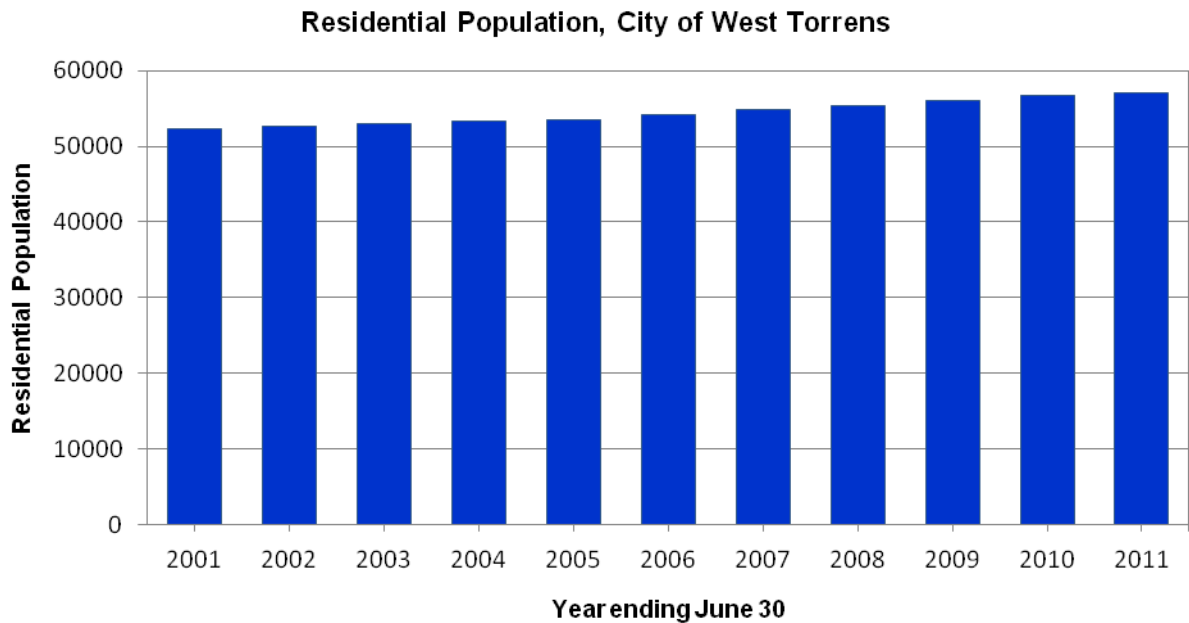
Table 4.2 below and Graph 4.1 & 4.2 the next page presents Estimated Resident Population (ERP) figures. The ERP figures are updated annually taking into account births, deaths, internal and overseas migration. In addition, after every Census, ERP figures for the 5 previous years are “back cast”, using information from the current Census, to ensure the most accurate figures are available.

Table 4.2 Estimated Resident Population (ERP)

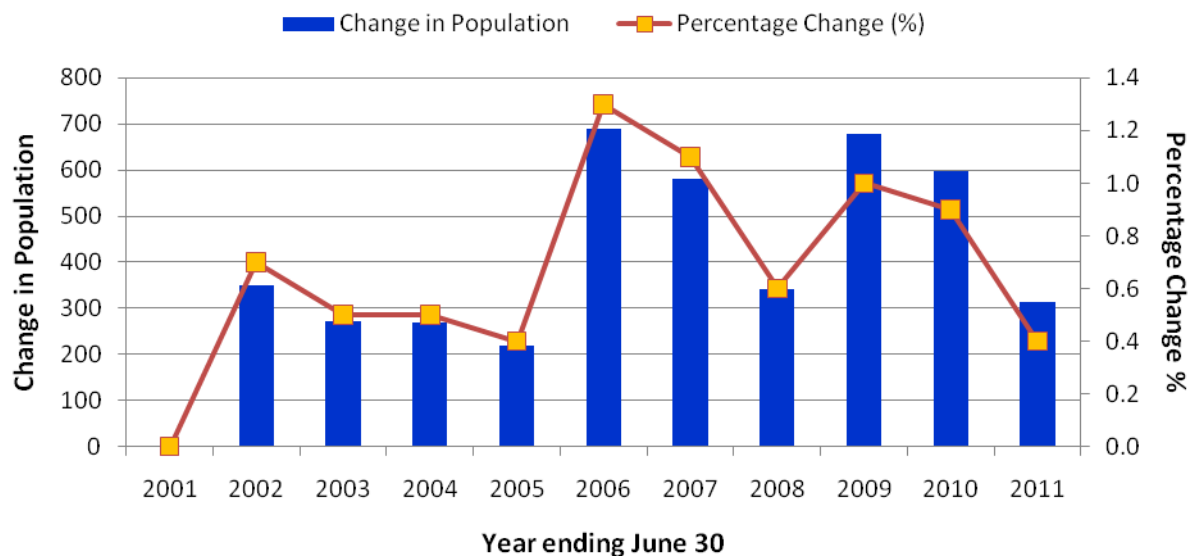
Estimated resident population (Revised estimates based on 2011 Census data)		Annual change	
Year (ending June 30)	Number	Number	Percent (%)
2011	56,960	314	0.4
2010	56,646	598	0.9
2009	56,048	679	1.0
2008	55,369	342	0.6
2007	54,896	580	1.1
2006	54,163	689	1.3
2005	53,474	218	0.4
2004	53,256	269	0.5
2003	52,987	273	0.5
2002	52,714	350	0.7
2001	52,364	-	-

Source: Australian Bureau of Statistics, *Regional Population Growth, Australia, (3218.0)* - 2011

Graph 4.1 Estimated Resident Population, City of West Torrens



Graph 4.2 Changes in Estimated Resident Population, City of West Torrens



Source: Australian Bureau of Statistics, *Regional Population Growth, Australia, (3218.0) - 2011*

Current trends indicate that there will be a minimal impact on services in the short term. However, over the next 10 years various trend changes may potentially impact on the demand for stormwater infrastructure. In order to formulate strategies to modify particular demands, it is recommended that projections for future forecast of the City profile in all aspects may be carried out based on the August 2011 National Census (Usual Residence).

The increasing urban consolidation through in-fill developments, regeneration of existing large industrial areas and large land holdings could also contribute to increase demands on the stormwater network.

Increases in shopping precincts, schools, age care facilities will also impact on the future demand for improved services.

Various trends could potentially impact the City over the next 20 years impacting on the demand for stormwater asset infrastructure. The areas experiencing greatest changes are the Adelaide Airport, the industrial zones in particular around Thebarton and Mile End, and in-fill residential developments. Approximately 66.8% of the City's housing stock is detached dwellings on individual allotments. This highlights the potential for a significant increase in housing stock through in-fill development, such as detached dwellings being replaced by two and sometimes three new dwellings.

It should be noted that the Australian Bureau of Statistics will be updating their information by the end of 2012, and subsequently this IAMP will be updated to reflect the new statistics.

As discussed in "City of West Torrens, Initial Urban Stormwater Master Plan", November 2003, the projected increases in catchment runoff are significant. As a result it is evident that without a properly implemented strategy to manage these increases, a significant reduction in the standard of drainage in the catchment is likely to occur

4.2 Changes in Technology

Technology changes are forecast to affect the delivery of services covered by this plan in the areas described in Table 4.2 below.

Table 4.2 Changes in Technology and Forecast effect on Service Delivery

Technology Change	Effect on Service Delivery
Advanced Asset Management System	Improvement in extending the life of assets with greater ability to manage the assets through planned maintenance, capital works programming and prediction modelling.
New Financial Management System	Improved reporting on individual asset costs.
New Data Collection Technology	Collection of data for planned and completed works by City Works department. Use of electronic data collection tablets in the field – pick up of defects and pipe condition. Data recorded in Asset Management System for data accuracy.
Development of concrete additives and pipeline relining	Increased residual life of stormwater assets
New construction techniques at reduced cost	Reduced renewal costs

4.3 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. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown on the next page in Table 4.3. Further opportunities will be developed in future revisions of this asset management plan.

Table 4.3 Demand Management Plan Summary

Service Activity	Demand Management Plan
Stormwater network capacity	Requirement for new development to detain/retain stormwater on site
Flood Management	Floor levels for new development set with freeboard above the 100 year ARI flood level.
Stormwater network capacity	Construction of strategically located detention basins to reduce flows in downstream drainage systems.
Stormwater network capacity / Receiving waterways	Implement elements of Water Sensitive Urban Design into either new or reconstructed roadways. This would assist in reducing the velocity of stormwater flows and also improve the quality of the stormwater.

Demand management strategies provide alternatives to the creation of new assets through modifying customer demands. They will either defer or reduce the need for asset acquisitions. Strategies will also be proposed to maximise the utilisation of existing assets through consolidating services or divesting assets that are surplus to requirements. This will also alleviate the demand on Council's limited resources and enable it to better focus energies on a smaller asset stock.

4.4 New Assets from Growth

Development growth within the City is slowing as opportunities for new developments reduce. The City of West Torrens contains very limited areas suitable for sub division. Future development is likely to be limited to infill housing on generally smaller allotments. As such, assets from growth are minimal and not considered in this Plan. However, a consequence of in-fill development will increase the needs on existing infrastructure. This needs to be considered in terms of the effects it places on the capacity of our infrastructure.

Future revisions of this Plan will consider the impact of changes to the Development Plan due to the Section 30 review and 30 Year Greater Adelaide Plan with regard to assessing effects from changes to impervious areas.

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in section 3) while optimising life cycle costs.

Assets are created and acquired to deliver the required services for Council. These assets are operated and maintained throughout their useful life and their performance and condition are monitored to ensure they deliver the necessary service.

The ability to meet the defined levels of service is determined, in part, by how the assets and resources are managed or utilised. When assets do not perform as required, they are rehabilitated, replaced or disposed of. The recurrent costs of operations and maintenance (including depreciation), the capital expenditure for rehabilitation, and the one-off cost of replacement all form part of the asset's lifecycle costs.

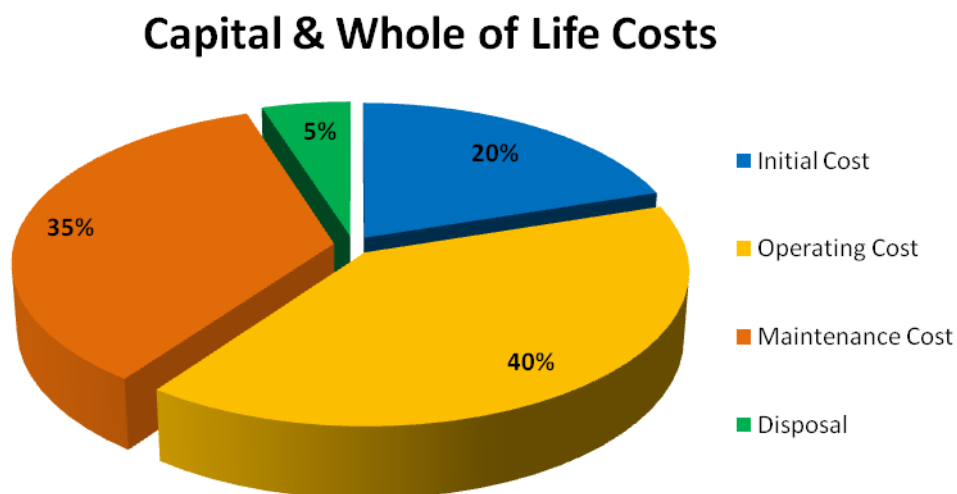
The life cycle management plan outlines the management strategies, including operating strategies, maintenance strategies and capital investment strategies, for the entire life of stormwater assets, development of the following plans.

- The Creation and Acquisition Plan
- The Maintenance Plan
- The Upgrade Plan
- The Replacement Plan
- The Disposal Plan

These plans have been developed, taking relevant economic and physical implications into account, to ensure that the desired levels of service are met throughout the assets' useful life.

Council currently records depreciation for stormwater assets by the straight line method of depreciation. The useful life of an asset is defined as the period which a depreciable asset is expected to be fully utilised, however, this period can be significantly impacted on by maintenance practices.

The Capital and Whole of Life Costs for a particular asset is represented in the chart below.



The useful lives currently adopted by Council for stormwater assets are as shown in Table 5.1 below.

Table 5.1 Asset Useful Life

Asset Component	Useful Life
Box Culvert	70 Years
Field Gully	70 Years
Glenelg Adelaide Pipeline (Recycled Water)	50 years
Gross Pollutant Trap	50-100 Years
Open Channel	75 Years
Pump Station	50 Years
Stormwater Junction Box	70 Years
Stormwater Lid	40 Years
Stormwater Pipe	100 Years
Stormwater Side Entry Pit	70 Years
Water Sensitive Urban Design	50 Years

The useful life of an asset is determined by the soil type, construction techniques, location, depth, use and material of pipe. Minimising the whole of life costs by 'relining' or 'renewal' to be able to achieve the work within the available funding and reviewing the stormwater asset management plan on an annual basis.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this IAMP are shown below in Table 5.1.1.

Table 5.1.1 Stormwater Assets

Asset	Description	Replacement Value as at 30 June 2012
Stormwater		
Box Culverts	Node Types	\$19,971,812
Field Gully	Node Types	\$86,246
Gross Pollutant Traps	GPT Types	\$266,340
Junction Box	Node Types	\$2,868,327
Open Channel	Open Channel Type	\$3,044,835
Pump Station	Pump Station Types	\$1,192,333
Side Entry Pits	Node Types	\$7,624,060
Stormwater Pipe	Pipe Types	\$60,855,144
Water Sensitive Urban Design - Pods	WSUD Types	\$452,598
Total		\$96,361,695

Values as at June 2012.

The underground stormwater network servicing the City's area, totalling 3650 hectares, are broadly within four main catchments as described below:

South-Western Suburbs Drainage Scheme Catchment (SWSDS)

The southern section of the Council area forms a part of the SWSDS. All drainage in this area is in the form of underground drainage systems and ultimately discharges into the Sturt River. A large contribution from an external catchment in the City of Mitcham is made to the system via a drain running along Cross Road.

Keswick & Brownhill Creek Catchment

This catchment is drained by a large number of lateral drains that are connected into the Keswick & Brownhill Creeks. The catchment covers the southern portion of the Council area. The creeks have significant upstream catchments that have been shown to have the potential to cause widespread flooding in the Council area. The Creeks join on the eastern side of the Airport and drain into the Patawalonga Lake.

Airport Drain Catchment

The Airport Drain catchment is almost entirely contained within the Council area. It is comprised of the areas to the north and north-east of the Adelaide Airport. The catchment is drained by a number of large underground trunk drains which discharge to an open channel system in the

vicinity of the entrance to the Airport. The open channel ultimately discharges into the Patawalonga Lake.

River Torrens Catchment

This catchment lies adjacent to the River Torrens. Part of the catchment drains into the River via gravity underground drainage systems while the other part area discharges via pump stations. Recent upgrades to pump stations include Chippendale Avenue (2011/12) and Riverway Drive (2010/11).

Council does not maintain detailed records of the extent and frequency of flooding within the City of West Torrens area, with the exception of the Brown Hill and Keswick Creek catchment. However, the following general observations regarding the nature of flooding are made based on previous hydrological investigations and from knowledge provided by Council staff:

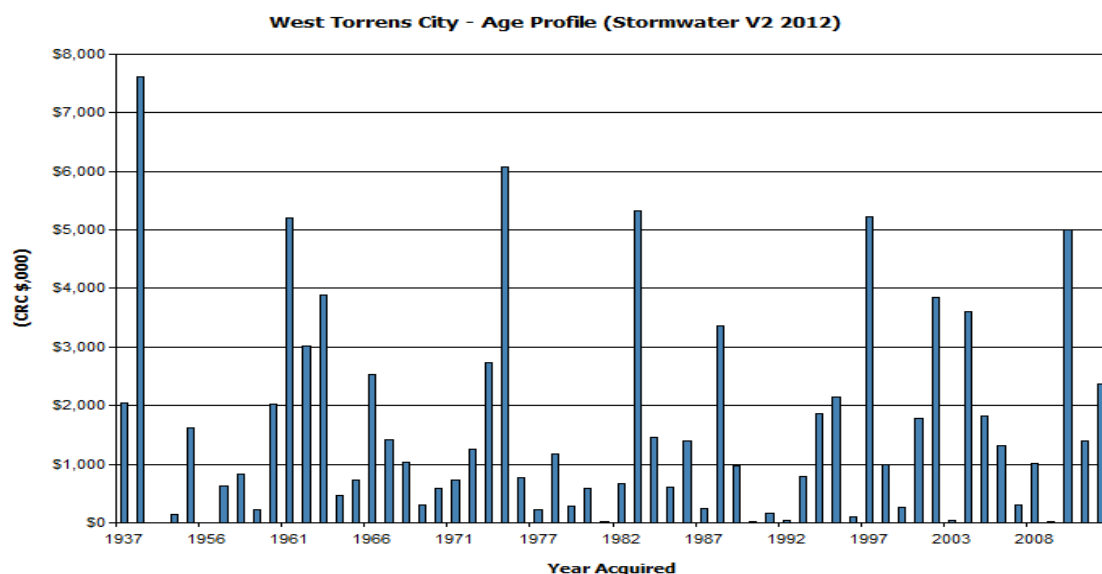
The following known existing flooding trouble spots been identified within “Initial Urban Stormwater Master Plan, November, 2003

- Large gutter flow widths are common in a number of areas, due to a combination of flat road grades and large catchments without any underground drainage systems;
- Floodwaters in Keswick Creek and the Sturt Creek are prevented from spilling into adjoining areas by banks on each side of the channel. When flood levels in the channel are high, drainage of areas adjacent to the channel can not occur;
- Excessive ponding of water in sag points; and
- High risk of pipe and pit blockage, due to flat grades and therefore low flow velocities resulting in some systems not being self-cleaning.

The age of stormwater infrastructure varies significantly throughout the Council area. Recent works completed as part of the Cowandilla-Mile End drainage scheme are likely to have a residual design life in excess of 80 years. However a number of drainage elements are approaching the end of their design life. Only **39 %** of the stormwater network has a capacity of 5 year ARI or greater.

The age profile of Council's assets is shown below:

Graph 5.1.1 Asset Age Profile



5.1.2 Asset capacity and performance

Council's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed below in Table 5.1.2.

Table 5.1.2 Known Service Performance Deficiencies

Location	Service Deficiency
Stormwater Pipes (Minor System)	Only 39% of the stormwater pipe network is at the desired capacity of a 5 Year ARI.
Overall Stormwater Network (Major System)	Unknown performance for the majority of Council area is unknown.
Overall Stormwater Network (Major System)	Over topping of open channels
Asset Management System	Minimal condition data

The above service deficiencies were identified from City of West Torrens initial Stormwater Master Plan, Nov. 2003

5.1.3 Asset condition

Council does not currently have a condition profile on its stormwater infrastructure assets.

However, since Council identified the failure of a box culvert located within a trafficable lane on an arterial road, it has formulated a CCTV program based on a risk rating to undertake a condition audit of high risk box culverts.

Council is currently developing a methodology to condition rate the stormwater network in line "Condition Assessment & Asset Performance Guidelines – Practice Note 5 Stormwater Drainage, IPWEA NAMS.AU"

Condition is measured using a 1 – 5 rating system as detailed below in Table 5.1.3.

Table 5.1.3 Condition rating System

Rating	Condition	Description
1	Excellent	Only planned maintenance required
2	Very Good	Minor maintenance required plus planned maintenance
3	Good	Significant maintenance required
4	Average	Significant renew/upgrade required
5	Poor	Unserviceable

5.1.4 Asset valuations

The value of assets as at June 2012 covered by this asset management plan is summarised below. Assets were last revalued at June 2012. Assets are valued at Brownfield rates.

Value Type	Value (June 2012)
Current Replacement Cost	\$96,361,695
Depreciable Amount	\$96,361,695
Depreciated Replacement Cost	\$60,247,304
Annual Depreciation Expense	\$988,846

Council's sustainability reporting reports the rate of annual asset consumption and compares this to asset renewal and asset upgrade and expansion.

- **Asset Consumption 1.0%**
Rate of annual asset consumption*
A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount AAAC/DA). Depreciation may be used for AAAC.
- **Asset renewal 0.8%**
Rate of annual asset renewal*
A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).
- **Annual Upgrade/expansion 1.3%**
Rate of annual asset upgrade*
(A measure of the rate at which assets are being upgraded and expanded per annum expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

5.2 Risk Management Plan

An assessment of risks² associated with service delivery from infrastructure assets has identified critical risks to Council. The risk assessment process identifies credible risks, the likelihood of the risk 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.

Risks and criticality may include;

- Flooding
- Hazards to Traffic
- Hazards to the Community
- Hazards to Property, Infrastructure and Environmental damage

² City of West Torrens "Core" Stormwater Infrastructure Risk Management Plan Version 052008

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the infrastructure risk management plan are summarised below in Table 5.2.

Table 5.2 Critical Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan
Stormwater Pipe	Blockage of Pipe	H	Improve effectiveness of street sweeping. Develop routine cleaning of side entry pits
Stormwater System	Flooding of Property	H	Review and update Development Plan. Upgrade underground system based on risk priority.
Stormwater System	Flooding of Property from Brown Hill Creek Drainage Channel	H	Implement Brown Hill Keswick Creek management plan.
Road	Failure of pavement due to underground drainage culvert collapse.	H	Continue CCTV program to identify deteriorated culverts.

5.3 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.

5.3.1 Maintenance plan

Maintenance includes reactive, planned and cyclic maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold.

Maintenance expenditure trends are shown below in Table 5.3.1

Table 5.3.1 Maintenance Expenditure Trends

Year	Maintenance Expenditure
2009/10	\$204,414
2010/11	\$286,975
2011/12	\$398,021

Planned maintenance work is **30 %** of total maintenance expenditure.

Maintenance expenditure levels are considered to be inadequate to meet required service levels. Future revision of this asset management plan will include linking required maintenance expenditures with required service levels.

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

5.3.2 Standards and specifications

Maintenance work is carried out in accordance with the following Standards and Specifications.

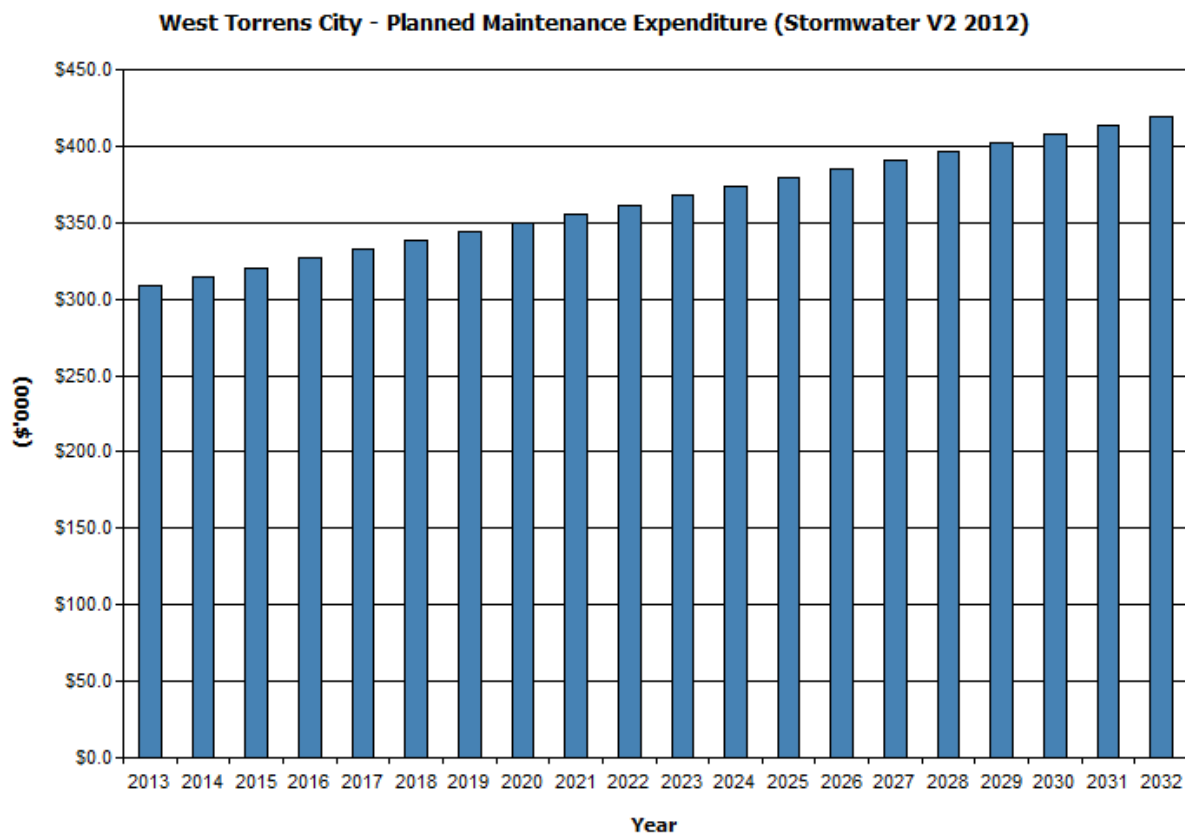
- Australian Standards

5.3.3 Summary of future maintenance expenditures

The definition of planned maintenance used in this IAMP is “The actions performed to retain an item/asset in its desired condition standard, by providing systematic inspection, detection & prevention of early failure. It is maintenance conducted on a regular basis to ensure reliability or to sustain the design life of the asset, and includes maintenance specified by regulatory requirements or Australian Standards.”

Future maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Fig 4. Note that all costs are shown in current 2012 dollar values.

Graph 5.3.3 Planned Maintenance Expenditure



Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded is to be included in the risk assessment process in the infrastructure risk management plan.

Maintenance is funded from Council's operating budget and grants where available. This is further discussed in Section 6.2.

5.4 Renewal/Replacement Plan

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.

5.4.1 Renewal plan

Assets requiring renewal are identified from estimates of remaining life obtained from the asset register worksheets on the '*Planned Expenditure template*'. Candidate proposals are inspected to verify accuracy of remaining life estimate and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed below in Table 5.4.1.

Table 5.4.1 Renewal Priority Ranking Criteria

Criteria	Weighting
Social Impact	15%
Financial Impact	15%
Environmental Impact	20%
Structural Impact	50%
Total	100%

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost.

5.4.2 Renewal standards

Renewal work is carried out in accordance with the following Standards and Specifications.

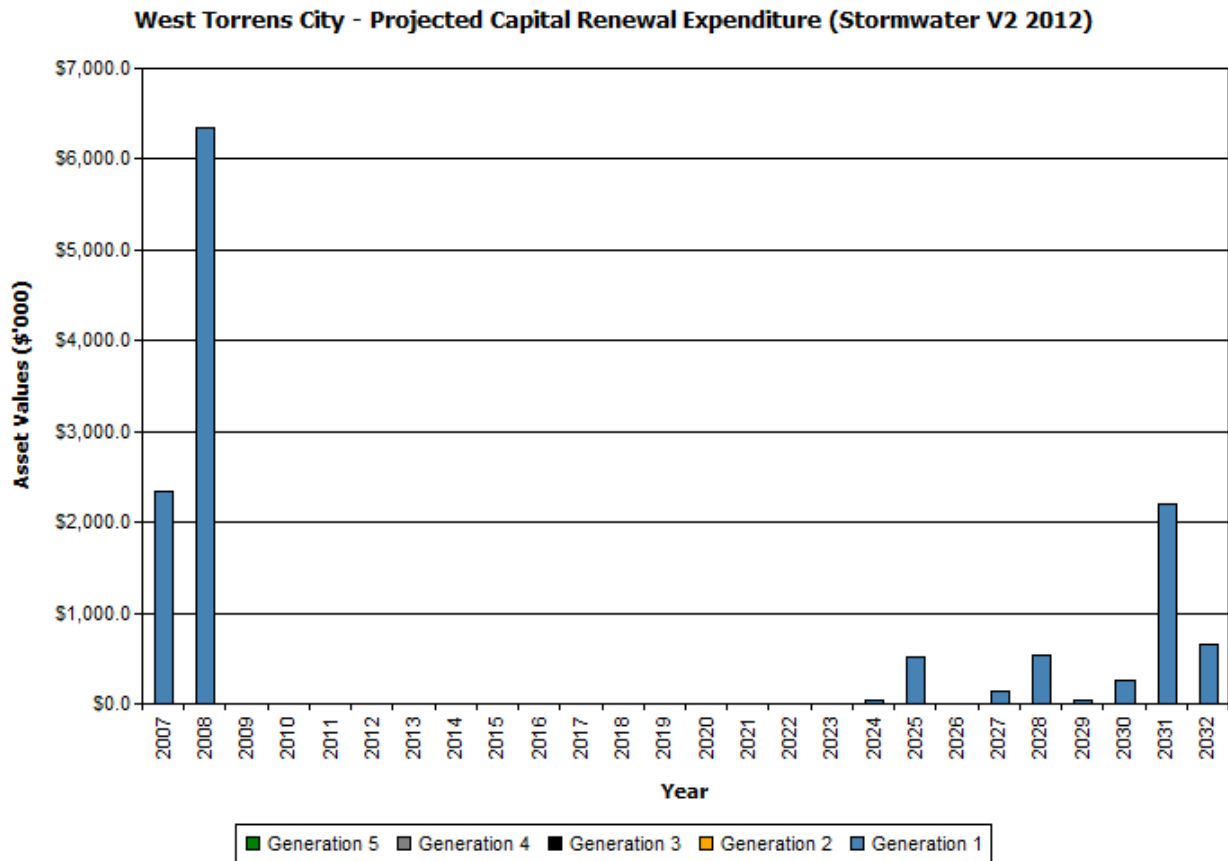
Standard	Comment
AS/NZS 3500.3 : 2003	Sewer and Stormwater
AS/NZS 1254 : 2002	PVC Stormwater Pipe
AS/NZS 3725 : 2007	Buried Concrete Pipe Design and installation
AS/NZS 4058 : 2007	Precast Concrete Pipe Construction
AS/NZS 4139 : 2003	FRC Pipe Construction

5.4.3 Summary of future renewal expenditure

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised below in Graph 5.4.3 Note that all costs are shown in current 2012 dollar values.

The projected capital renewal program is shown in Appendix B.

Graph 5.4.3 Projected Capital Renewal Expenditure



Deferred renewal, i.e. those assets identified for renewal and not scheduled for renewal in capital works programs are to be included in the risk assessment process in the risk management plan.

Council, in recent time, has been required to renew a section of box culvert located on an arterial road due to the poor quality of product rather than age. A program based on risk has been developed to identify any further box culverts that may require renewal. Subsequent to completing this program, a schedule of works will be incorporated into future revisions of this Plan.

On odd occasions where renewal of a length of pipe or associated drainage asset is required, it has been driven from root damaged rather than age related distress. Renewals to date have therefore been undertaken on a reactive basis. The majority of renewals identified in this update IAMP are renewals required on the Anzac Highway stormwater network. Their actual physical condition will be verified on site as they have been based on the assets end of life rather than condition.

Renewals are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.2.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development.

5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed below in Table 5.5.1

Table 5.5.1 New Assets Priority Ranking Criteria

Criteria	Weighting
Social Impact	15%
Financial Impact	15%
Environmental Impact	20%
Capacity Impact	50%
Total	100%

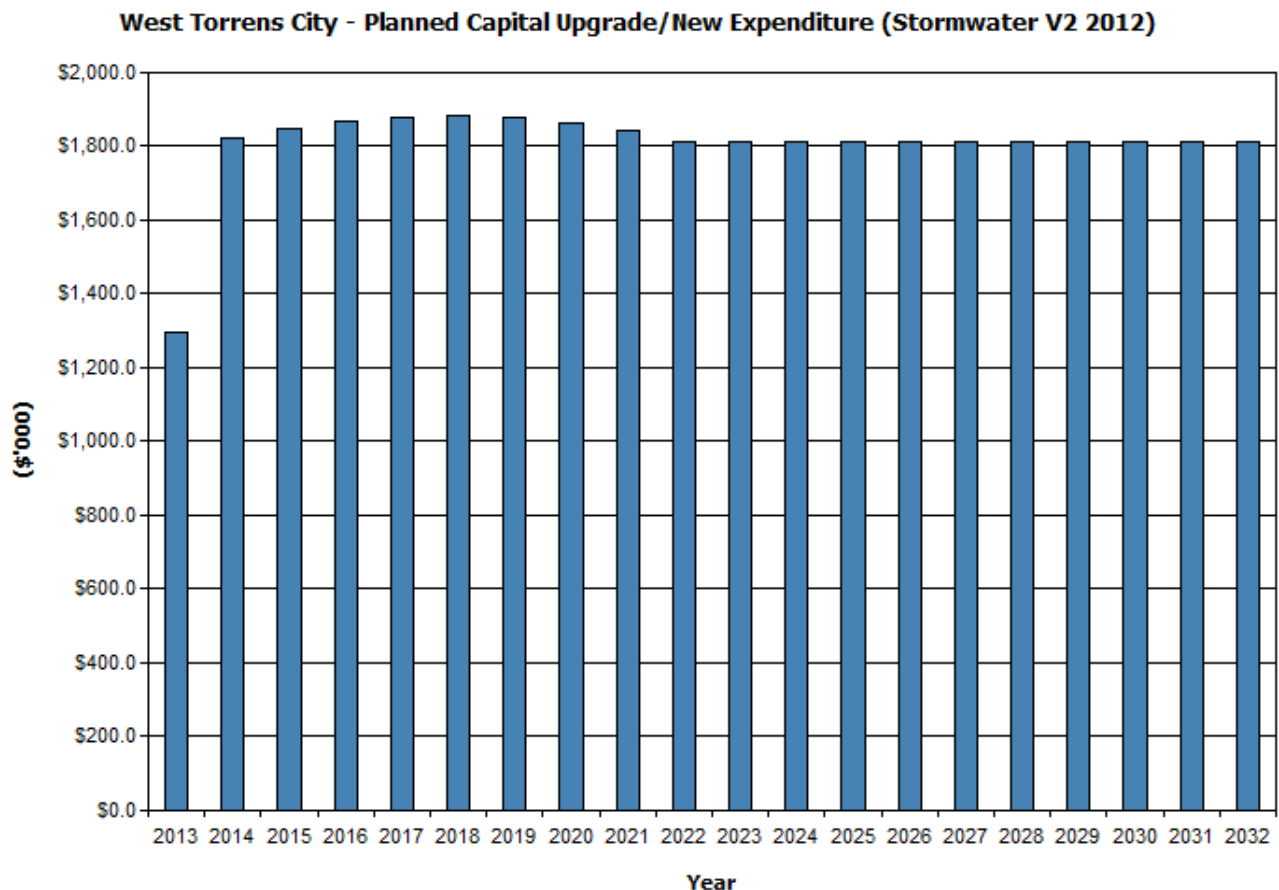
5.5.2 Standards and specifications

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

5.5.3 Summary of future upgrade/new assets expenditure

Planned upgrade/new asset expenditures are summarised in Graph 5.5.3 on the next page. The projected upgrade/new capital works were derived from Figures 2.5 and 2.6 found within “Initial Urban Stormwater Master Plan, No. 2003, Appendix C. A program of works will be developed and will be included in future revisions of this IAMP. The planned upgrade/new capital works program is shown in Appendix C. All costs are shown in current 2012 dollar values.

Graph 5.5.3 Planned Capital Upgrade/New Asset Expenditure



New assets and services are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.2.

5.6 Disposal Plan

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

During the preparation of this plan no disposal were identified, however subsequent to investigating the underground drainage system in Anzac Highway that has been identified for renewal, a disposal plan will be developed should the investigation determine its replacement. Accordingly this IAMP will then be updated.

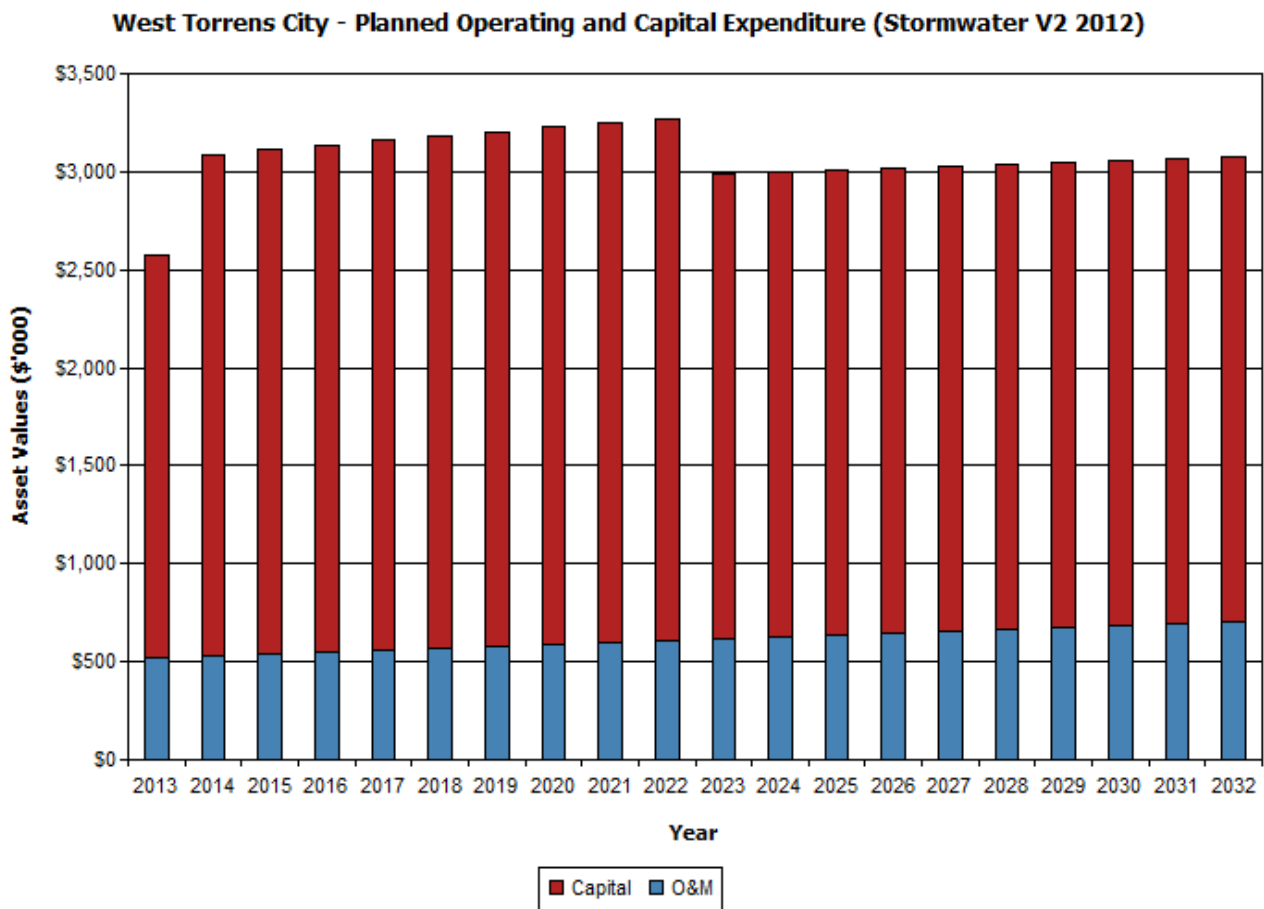
6. FINANCIAL SUMMARY

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.

6.1 Financial Statements and Projections

The financial projections are shown below in Graph 6.1 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets).

Graph 6.1 Planned Operating and Capital Expenditure



Note that all costs are shown in current 2012 dollar values.

6.1.1 Sustainability of service delivery

There are two key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs and medium term costs over the 10 year financial planning period.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include maintenance and asset consumption (depreciation expense). The **annual average life cycle cost** for the services covered in this asset management plan is **\$1,187,660**.

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The **life cycle expenditure** at the **start of the plan** is **\$1,020,153**.

A gap between life cycle costs and life cycle expenditure gives an indication as to whether present consumers are paying their share of the assets they are consuming each year. The purpose of this stormwater asset management plan is to identify levels of service that the community needs and can afford and develop the necessary long term financial plans to provide the service in a sustainable manner.

The life cycle gap for services covered by this asset management plan is **\$531,791 per annum**. The **life cycle sustainability index** is **0.66**.

Medium term – 10 year financial planning period

This asset management plan identifies the estimated maintenance and capital expenditures required to provide an agreed level of service to the community over a 20 year period for input into a 10 year financial plan and funding plan to provide the service in a sustainable manner.

This may be compared to existing or planned expenditures in the 20 year period to identify any gap. In a core asset management plan, a gap is generally due to increasing asset renewals.

Fig 8 shows the projected asset renewals in the 20 year planning period from the asset register. The projected asset renewals are compared to planned renewal expenditure in the capital works program and capital renewal expenditure in year 1 of the planning period as shown below in Graph 6.1.1 and Table 6.1.1 on the next page shows the annual and cumulative funding gap between projected and planned renewals.

Graph 6.1.1 Projected and Planned Renewals and Current Renewal Expenditure

West Torrens City - Projected & Planned Renewals and Current Renewal Expenditure (Stormwater V2 2012)

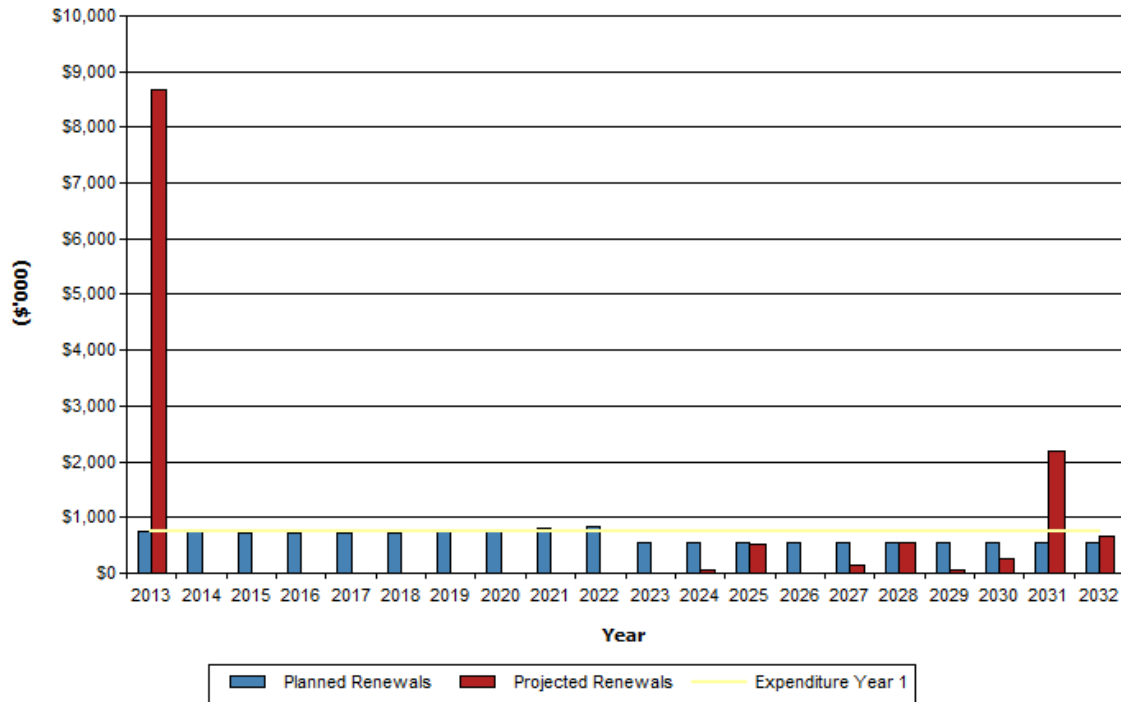


Table 6.1.1 below shows the gap between projected and planned renewals.

Table 6.1.1 Projected and Planned Renewals and Expenditure Gap (\$'000)

Year	Projected Renewals	Planned Renewals	Renewal Funding Gap	Cumulative Gap
2013	8,686.01	754.07	7931.94	7931.94
2014	0.00	738.40	-738.40	7193.54
2015	0.00	724.17	-724.17	6469.37
2016	0.00	718.14	-718.14	5751.24
2017	5.30	719.96	-714.66	5036.58
2018	0.00	729.53	-729.53	4307.04
2019	0.00	747.00	-747.00	3560.04
2020	0.00	772.73	-772.73	2787.31
2021	0.00	804.51	-804.51	1982.80
2022	0.00	848.96	-848.96	1133.84
2023	0.00	556.00	-556.00	577.84
2024	45.20	556.00	-510.80	67.04
2025	523.21	556.00	-32.79	34.26
2026	\$2.30	556.00	-553.70	-519.44
2027	146.90	556.00	-409.10	-928.54
2028	534.07	556.00	-21.93	-950.47
2029	47.26	556.00	-508.73	-1459.21
2030	262.05	556.00	-293.95	-1753.16
2031	2,202.32	556.00	1646.32	-106.84
2032	662.78	556	106.78	-0.06
Total	\$13,117.40	\$13,117.47	\$-0.06	\$41,115.12

Note all costs are shown in 2012 dollar values

Providing services in a sustainable manner will require matching of projected asset renewals to meet agreed service levels with planned capital works programs and available revenue.

A gap between projected asset renewals, planned asset renewals and funding indicates that further work is required to manage required service levels and funding to eliminate any funding gap.

Council will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and commit to a lending program which incorporates the footpath assets..

Council's long term financial plan covers the first 10 years of the 20 year planning period. The total maintenance and capital renewal expenditure required over the **10 years is \$1,210,670.**

This is an average expenditure of **\$1,091,160.** Estimated maintenance and capital renewal expenditure in year 1 is **\$1,063,150.** The **10 year sustainability index is 0.91.**

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets. The funding strategy is detailed in the Council's 10 year long term financial plan.

Achieving the financial strategy will require Council to commit to a loan program that will result in loan liabilities increasing from \$12.91 million to \$50.15 million which will incorporate all infrastructure assets. A significant but manageable increase is demonstrated in Table 6.2 below. Interest rate borrowings ranging from 6.25 to 6.75 per cent have been estimated, along with a 15 year borrowing term.

Loan repayments as a percentage of rates is the benchmark that is best used to assess a Council's relative indebtedness. The projected percentages for West Torrens based on the projected loan program are as shown below in Table 6.2:

Table 6.2 Projected Loan Repayments (\$)

Financial Year	Projected Loan Repayments \$	Loan % of Rates
2009/10	2,485,768	7.6
2010/11	2,280,570	6.1
2011/12	2,219,539	5.5
2012/13	2,219,539	5.2
2013/14	2,219,539	4.8
2014/15	2,864,981	5.8
2015/16	3,538,637	6.7
2016/17	4,105,045	7.3
2017/18	4,848,604	8.1
2018/19	4,734,718	7.4
2019/20	4,892,841	7.1
2020/21	5,580,316	7.6

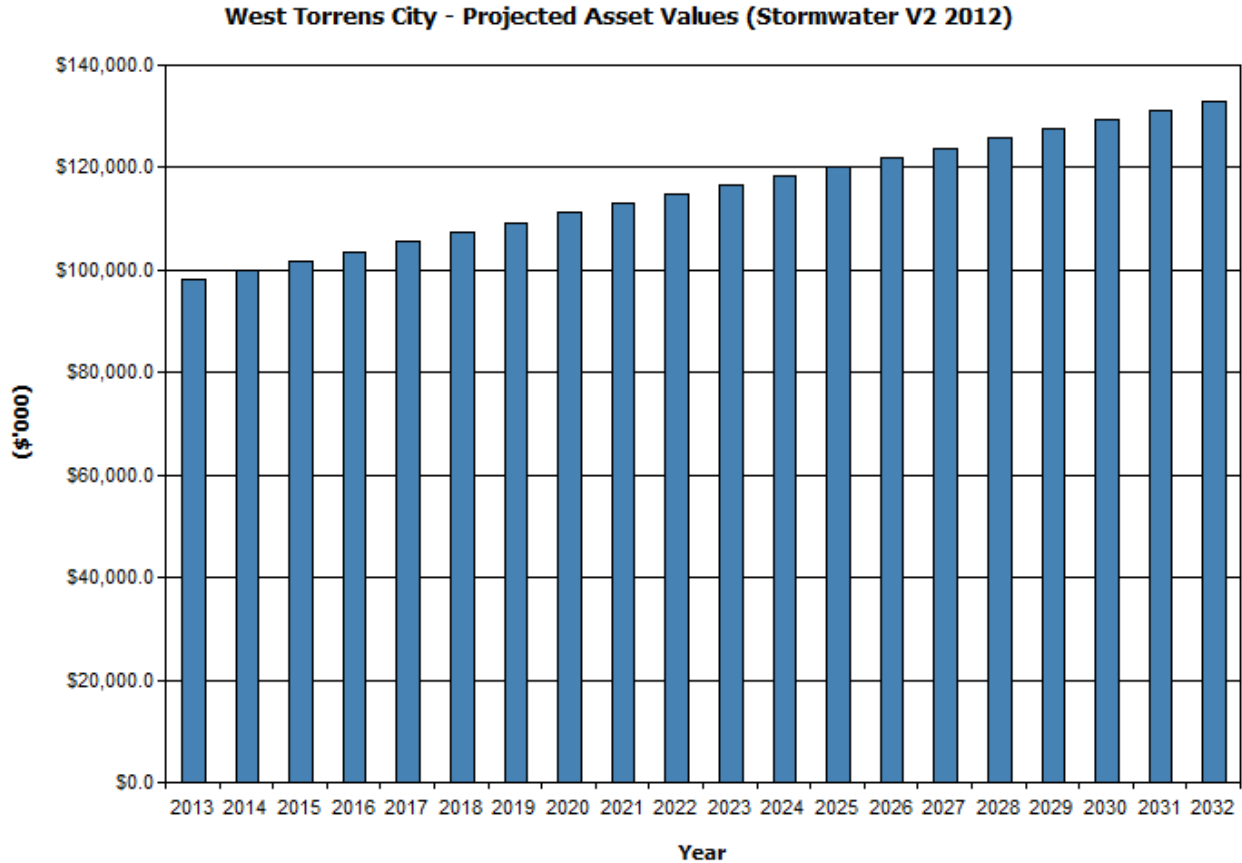
Data Source: City of West Torrens - Adopted budget and annual business plan 2012/13

A percentage between zero and 25 per cent would normally be considered as being reasonable. Metropolitan councils in South Australia ranged from 0.0 per cent to 24.1 per cent in 2008/2009.

6.3 Valuation Forecasts

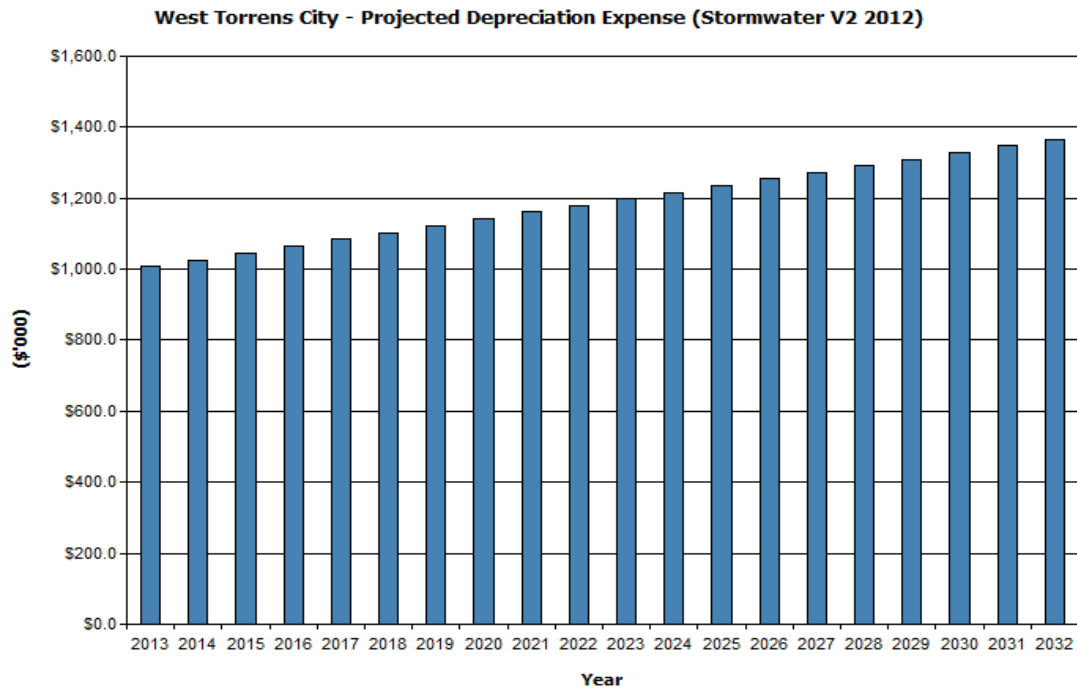
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Graph 6.3 below shows the projected replacement cost asset values over the planning period in current 2012 dollar values.

Graph 6.3 Projected Asset Values



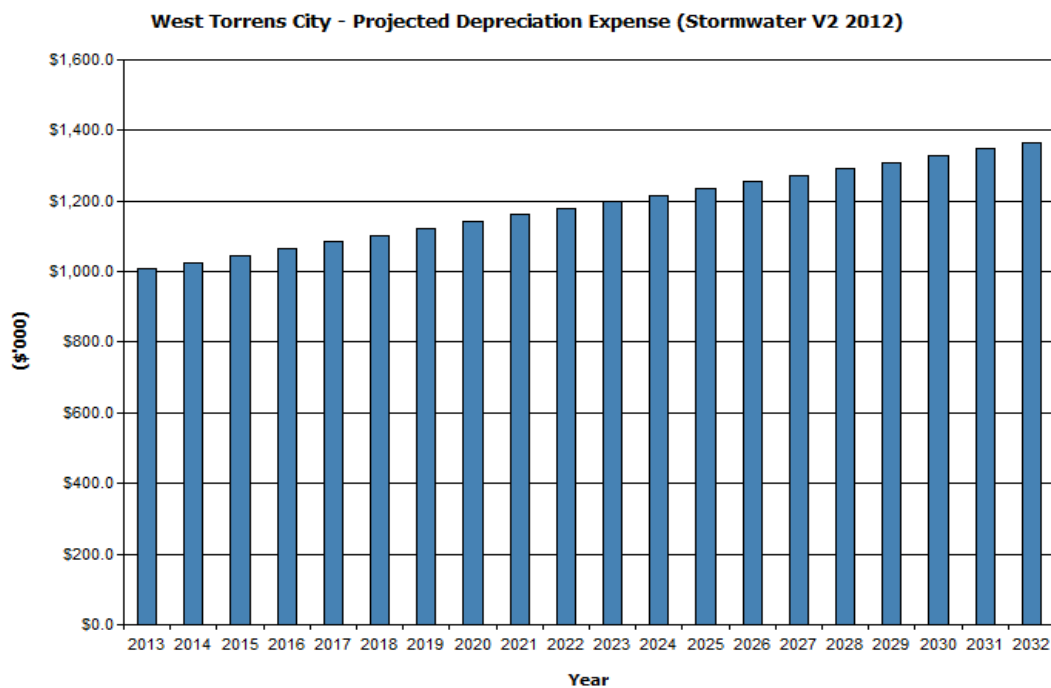
Depreciation expense values are forecast in line with asset values as shown below in Graph 6.3.1

Graph 6.3.1 Projected Depreciation Expense



The depreciated replacement cost (current replacement cost less accumulated depreciation) will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown below in Graph 6.3.2.

Graph 6.3.2 Projected Depreciated Replacement Cost



6.4 Key Assumptions made in Financial Forecasts

This section 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. 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 asset management plan are:

- The costs are based on industry standard estimated rates for maintenance and renewal and may not directly compare to Councils internal service provision actual costs.
- All figures are based on 2012 rates and are not adjusted by the inflation rate for the particular year of works.
- The figures compare to an annual reported depreciation figure of **\$988,846**.
- Nil growth.
- Present service levels to remain constant over the life of the plan.
- Accuracy of future financial forecasts may be improved in future revisions of this asset management plan by the following actions.
- Regular 5 yearly condition survey of the stormwater network.
- Shift from straight line depreciation method into asset consumption based depreciation.
- Defining community level service
- Consider improved condition rating system to address serviceability and remaining useful life.

6.5 Confidence Levels

Confidence in the data used as the basis for these forecasts has been assessed using the grading system as seen below in Table 6.5.

Table 6.5 Data Confidence Grading System

Grade	Definition
A	Very reliable. Data based on sound records, procedures, investigations and analysis that is properly documented and recognised as the best method of assessment.
B	Reliable. Data based on sound records, procedures, investigations and analysis that is properly documented but has some minor shortcomings, such as age.
C	Uncertain. Data based on records, procedures, investigations and analysis which is incomplete, unsupported, or extrapolated from a limited sample.
D	Very uncertain. Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

The overall confidence level has been based assessed as C.

To improve confidence in the figures, the following steps could be undertaken:

- In order to keep track on works and ensure all data on assets is meaningful and reliable all works and activities associated with a particular asset should be consistently attributed to the asset listed in Conquest.
- Validate age of assets.
- Develop condition rating methodology.

7. ASSET MANAGEMENT PRACTICES

7.1 Accounting/Financial Systems

Council uses 'Finance One' as its corporate finance system and is administered through the Finance Department.

Guidance in recognising and reporting on assets is provided by;

- Local Government Act 1999
- Local Government (Financial Management) Regulations 1999
- AASB Accounting Standards

Council adopted a Capitalisation of Assets Policy (CPP.48) on 4 November 2008. In summary, for footpath, assets will be capitalised when:

- It is probable that the future economic benefits embodied in an asset will eventuate; and
- The asset possesses a cost that can be measured reliably, and its value, at the time of Council gaining control over the asset, is in excess of:

Stormwater - new construction/renewals	\$10,000
---	-----------------

Where the value of individual assets falls below the asset threshold for capitalisation, but the assets form part of a network or asset group, consideration will be given to capitalising the individual asset based on whether the aggregate value of those assets exceeds the capitalisation threshold. Assets to be considered will be referred to the Manager Financial Services for a determination.

Acquisition costs of assets with less than these values will be treated as operating expenses.

Changes to the financial system should be in the way of amending the chart of accounts to identify operational costs, maintenance cost and capital cost.

7.2 Asset Management Systems

Asset Management information systems are defined as the system that support asset management processes and manipulate the relevant data. This includes the following asset management functions:

- Asset registers
- Financial systems
- Maintenance management systems
- Capital works programming
- As constructed plans
- Geographical information systems
- Advanced applications such as deterioration modelling
- Future demand analysis

The City of West Torrens uses “Conquest” as its Asset Management System.

Currently there is no integration of Conquest with the ‘Finance One,’ Council’s corporate finance system. Capital expenditure is currently partially uploaded via CSV files and manually posted.

Conquest is administered through the City Assets business unit and has a full time coordinator responsible for its development and implementation together with one full time and one part time officer. In addition, the Asset Accountant, located within the Finance Department also has administrative responsibilities.

It is apparent through the development of this asset management plan that better integration is required with the finance system. Also, it is suggested that it would be appropriate to review the use of the Asset Management System to generate and report on proactive maintenance works programs.

7.3 Information Flow Requirements and Processes

The key information flows *into* this asset management plan are:

- The asset register data on size, age, value, remaining life of the network;
- The unit rates for categories of work/material;
- The adopted service levels;
- Projections of various factors affecting future demand for services;
- Correlations between maintenance and renewal, including decay models;
- Data on new assets acquired by council.

The key information flows *from* this asset management plan are:

- The assumed Works Program and trends;
- The resulting budget, valuation and depreciation projections;
- The useful life analysis.

These will impact the Long Term Financial Plan, Strategic Business Plan, annual budget and departmental business plans and budgets.

All capitalised expenditures are to be recorded in Council’s asset register and shall be properly identified, recorded and classified. For each asset, a determination shall be made of its total life, remaining useful life, cost for accounting purposes and method of depreciation.

All asset recorded in the fixed asset register should be correctly allocated to their specific asset class, asset category and asset group.

Assets acquired by Council shall be recorded using the cost method of accounting which is the fair value given as consideration plus costs incidental to acquisition including architect’s fees, engineering fees and all other costs incurred in preparing the asset ready to use.

The cost of assets constructed by Council shall include the cost of all materials used in construction, direct labour employed, contractor cost and an appropriate allowance for Council overheads.

7.4 Standards and Guidelines

- City of West Torrens, Asset Management Policy, 7 November 2007
- City of West Torrens, Capitalisation of Assets Policy, 6 March 2012
- City of West Torrens, Impairment of Assets Policy, 6 March 2012
- City of West Torrens, Revaluation of Assets Policy, 6 March 2012
- City of West Torrens, Annual Budget Policy, 4 March 2008
- City of West Torrens, Treasury Policy, 6 March 2012
- Local Government Act 1999
- Local Government (Financial Management) Regulations 1999
- AASB Accounting Standards
- City of West Torrens, Transport Strategy, September 2009
- International Infrastructure Management Manual – 2006
- IPWEA, Condition Assessment and Asset Performance Guideline, Stormwater, PN 5 - 2011

8. PLAN IMPROVEMENT AND MONITORING

8.1 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required cashflows identified in this asset management plan are incorporated into council's long term financial plan and Strategic Management Plan;
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan;

8.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown below in Table 8.2.

Table 8.2 Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Develop an inspection program to log defects and manage routine maintenance.	City Assets	Operational	2013/14
2	Develop financial expenditure category identification	Finance Unit	Operational	2013/14
3	Undertake consultation exercise with stakeholders to determine appropriate levels of service.	Communication Unit/ City Assets	Budget Allocation	2014/15
4	Develop a Data Management Executive Standard	GIS Coordinator		2013/14
5	Develop the use of Conquest for proactive/cyclic and maintenance works, including recording all costs against each asset.	Asset Management Unit	Budget Allocation	2013/14
6	Documentation of accountabilities and responsibilities for Councils asset management system.	Asset Management Unit	Operational	2013/14
7	Review useful life of stormwater asset components	City Asset	Budget Allocation	2013/14
8	Develop criteria for prioritising new stormwater works.	City Assets	Operational	2013/14
9	Allocate resources to adequately collect, input and maintain data in the asset management and cost centre systems.	City Assets City Works	Budget Allocation	2012/13

8.3 Monitoring and Review Procedures

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

The Plan has a life of 4 years and is due for revision and updating within 2 years of each Council election.

REFERENCES

City of West Torrens Community Plan, “Towards 2025”, November 2011

City of West Torrens Adopted Budget and Annual Business Plan 2012/13

City of West Torrens Asset Management Strategy Review, June 2005

City of West Torrens Strategic Plan, June 2005

DVC, 2006, ‘Asset Investment Guidelines’, ‘Glossary’, Department for Victorian Communities, Local Government Victoria, Melbourne,
<http://www.dvc.vic.gov.au/web20/dvclgv.nsf/allDocs/RWP1C79EC4A7225CD2FCA257170003259F6?OpenDocument>

IPWEA, 2006, ‘International Infrastructure Management Manual’, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au

APPENDICES

- Appendix A Projected Maintenance / Renewal / New / Upgrade Expenditure Trends (2013 – 2022)
- Appendix B Projected Stormwater Assets 10 year Capital Renewal Works Program
- Appendix C Projected Upgrade/Expansion/New 10 year Capital Works (2013 – 2022)

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Appendix A - Projected Maintenance / Renewal / New / Upgrade Expenditure Trends

Activity	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Projected Maintenance	\$309,080	\$314,820	\$320,650	\$326,530	\$332,450	\$338,380	\$344,300	\$350,170	\$355,990	\$361,710
Projected Renewal	\$754,072	\$738,396	\$724,171	\$718,137	\$719,957	\$729,534	\$747,003	\$772,732	\$804,511	\$848,958
Projected Capital New/Upgrade.	\$1,295,928	\$1,821,104	\$1,848,289	\$1,867,284	\$1,878,410	1,881,760	1,877,203	\$1,864,383	\$1,845,553	\$1,814,072
Total	\$2,359,080	\$2,874,320	\$2,893,110	\$2,911,951	\$2,930,817	\$2,949,674	\$2,968,506	\$2,987,285	\$3,006,054	\$3,024,740

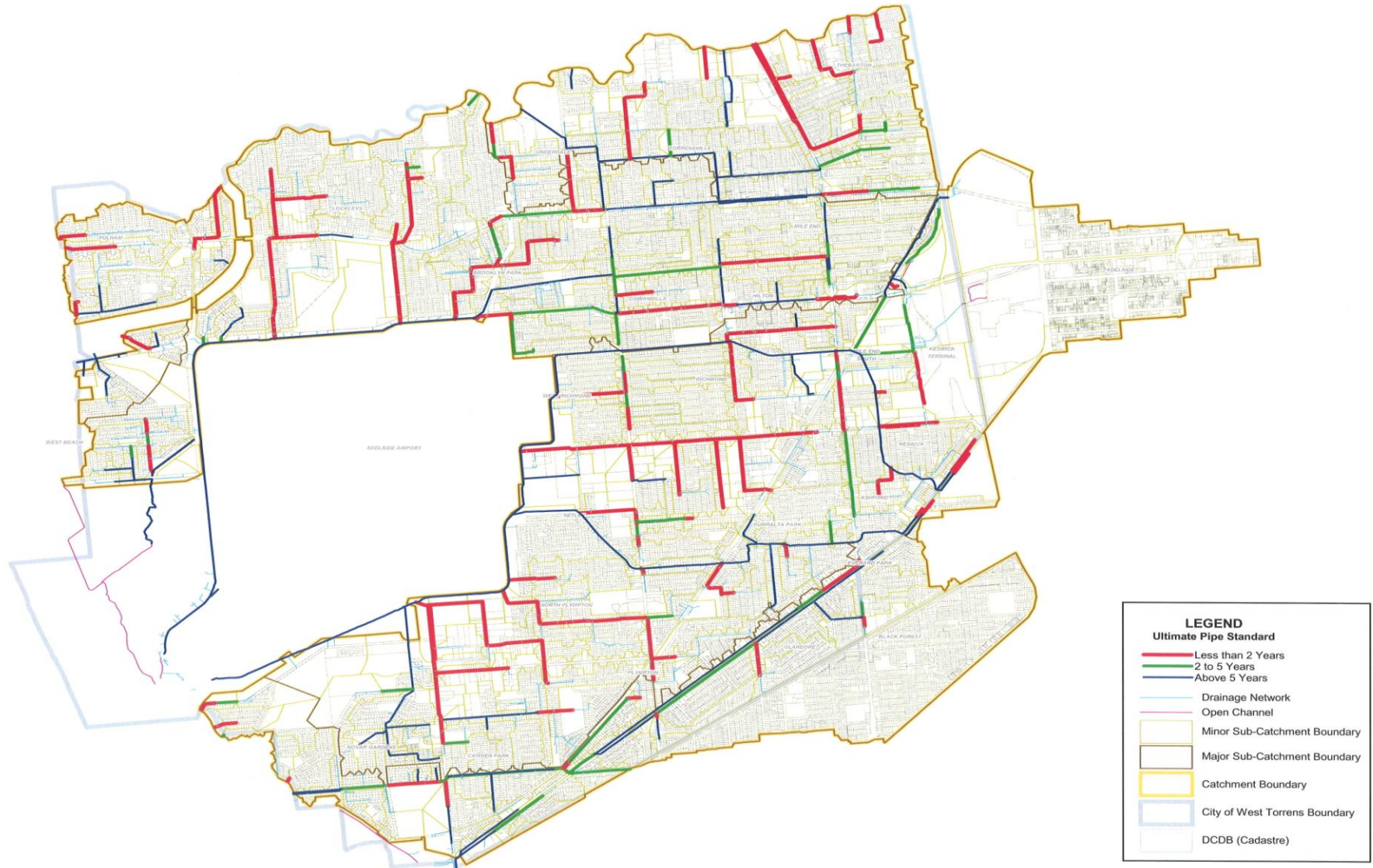
Appendix B - Projected Stormwater Assets 10 year Capital Renewal Works Program

CITY OF WEST TORRENS - RENEWAL PROGRAM (Side Entry Pits)			
Assets Name	Location	Renewal Cost	Useful Life (Years)
Side Entry Pits	Anzac Highway	\$491,958	70
Total		\$491,958	

CITY OF WEST TORRENS - RENEWAL PROGRAM (Box Culverts)			
Assets Name	Location	Renewal Cost	Useful Life (Years)
Box Culverts	Anzac Highway	\$8,140,487	70
Total		\$8,140,487	

CITY OF WEST TORRENS - RENEWAL PROGRAM (Junction Boxes)			
Assets Name	Location	Renewal Cost	Useful Life (Years)
Junction Boxes	Anzac Highway	\$58,882	70
Total		\$58,882	

Appendix C - Projected Upgrade/Expansion/New 10 Year Capital Works



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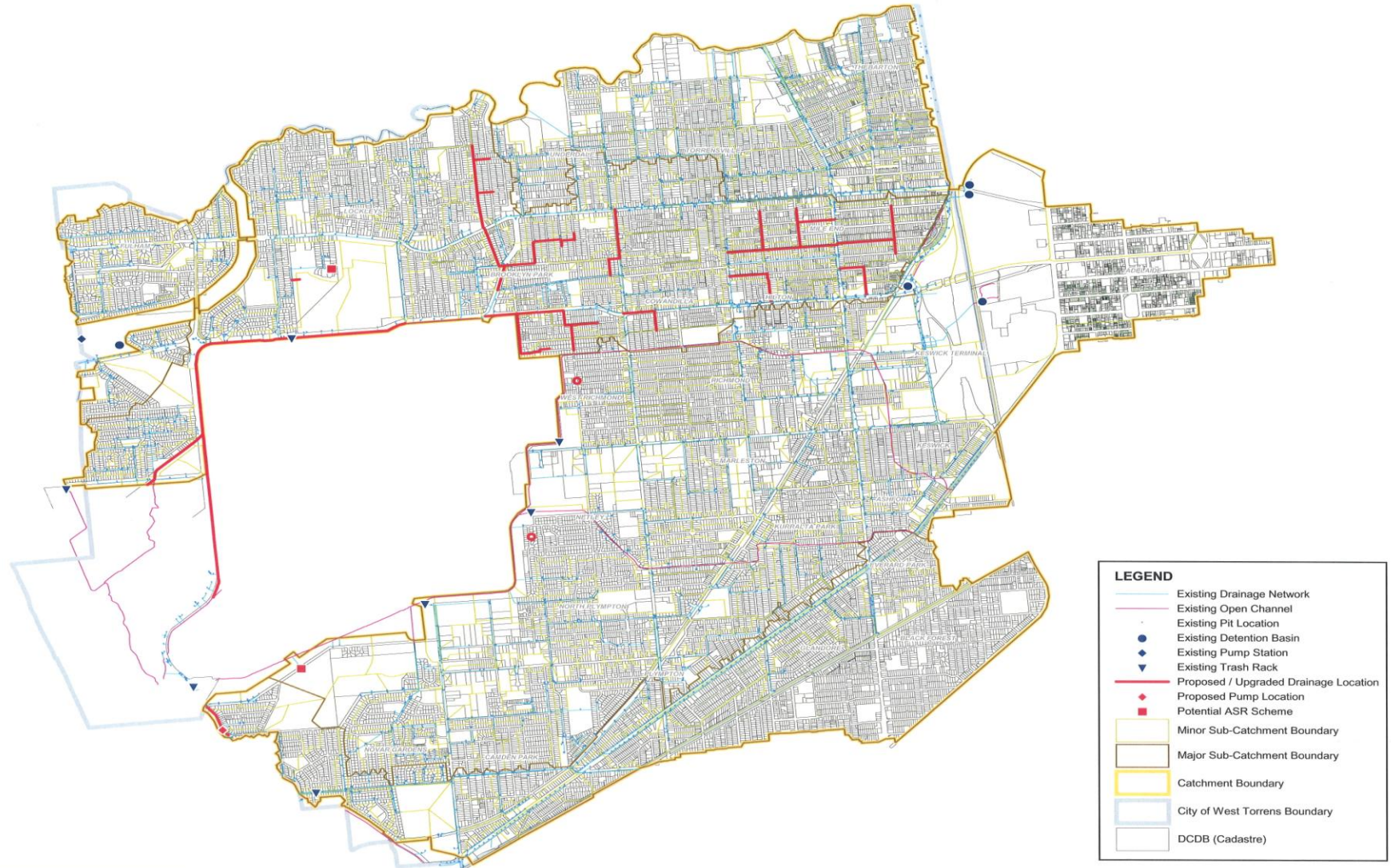
MAP DETAILS

Cadastral Data: City of West Torrens
 Drainage Data: City of West Torrens
 Catchment Mapping: Tonkin Consulting
 Job Number: 2002.0314
 Filename: Figure25.wor
 Drawn: Tina Freeman
 Date: 30/10/2003



City of West Torrens
Urban Stormwater Master Plan
EXISTING DRAINAGE SYSTEM CAPACITY

Figure 2.5



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MAP DETAILS

Cadastral Data: City of West Torrens
 Drainage Data: City of West Torrens
 Catchment Mapping: Tonkin Consulting
 Job Number: 2002.0314
 Filename: Figure26.wor
 Drawn: Tina Freeman
 Date: 30/10/2003



City of West Torrens
Urban Stormwater Master Plan
EXISTING & PROPOSED
STORMWATER INFRASTRUCTURE

Figure 2.6