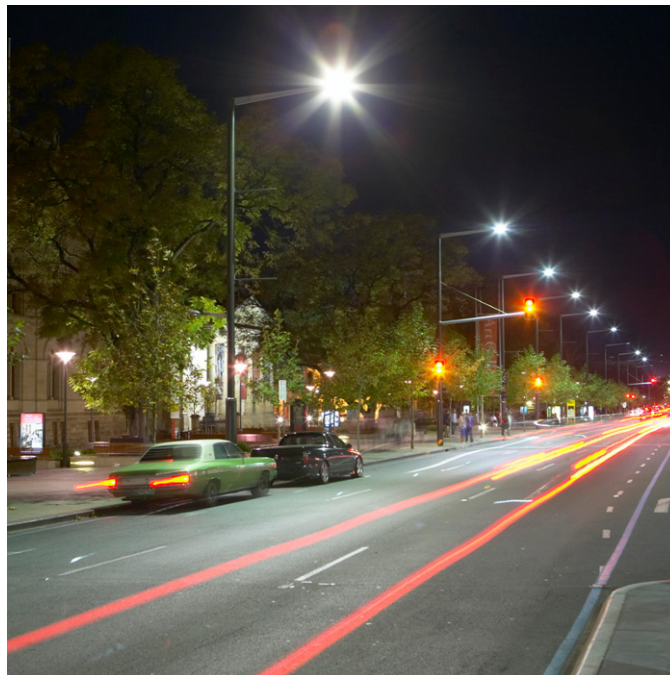




Lighting, Electrical and CCTV

INFRASTRUCTURE AND ASSET MANAGEMENT PLAN



2008

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TABLE OF CONTENTS

TABLE OF CONTENTS	I
TABLE INDEX	II
FIGURE INDEX	II
ABBREVIATIONS	III
GLOSSARY	IV
EXECUTIVE SUMMARY	IX
1 INTRODUCTION	1
1.1 BACKGROUND TO PLAN.....	1
1.2 SCOPE OF THE PLAN	2
1.3 KEY STAKEHOLDERS	3
1.4 RELATIONSHIP WITH OTHER PLANS	3
1.5 PLAN FRAMEWORK	4
2 LEVELS OF SERVICE	6
2.1 INTRODUCTION	6
2.2 LEGISLATIVE REQUIREMENTS	7
2.3 CUSTOMER RESEARCH AND EXPECTATIONS.....	7
2.4 STRATEGIC AND CORPORATE GOALS	8
2.5 CURRENT LEVELS OF SERVICE	10
3 FUTURE DEMAND	14
3.1 DEMAND GROWTH TRENDS.....	14
3.2 OTHER INFLUENCES ON DEMAND.....	15
3.3 IMPACT OF TRENDS ON INFRASTRUCTURE ASSETS	16
3.4 DEMAND MANAGEMENT STRATEGIES.....	17
4 ASSET MANAGEMENT PRACTICES	19
4.1 STANDARDS AND GUIDELINES.....	19
4.2 INFORMATION FLOW REQUIREMENTS AND PROCESSES	19
4.3 RISK MANAGEMENT	20
4.4 ACCOUNTING/FINANCIAL SYSTEMS	27
4.5 ASSET MANAGEMENT SYSTEM.....	27
5 LIFECYCLE MANAGEMENT PLAN	28
5.1 ASSET INFORMATION.....	28
5.2 OPERATIONS AND MAINTENANCE PLAN.....	32
5.3 RENEWAL PLAN.....	34
5.4 ENHANCEMENT / UPGRADE PLAN.....	36
5.5 LIGHTING, ELECTRICAL AND CCTV DISPOSAL PLAN	37
6 FINANCIAL SUMMARY	38
6.1 FINANCIAL STATEMENTS AND PROJECTIONS	38
6.2 KEY ASSUMPTIONS.....	38
6.3 FUNDING STRATEGY	39
6.4 VALUATION FORECASTS.....	39
7 PLAN IMPROVEMENT AND MONITORING	40
7.1 IMPROVEMENT PLAN	40
7.2 PLAN REVIEW AND MONITORING	40
8 REFERENCES	42
9 APPENDICES	43

TABLE INDEX

<i>Table 1.1: Assets Covered by this Plan</i>	2
<i>Table 1.2: Key Plan Stakeholders</i>	3
<i>Table 2.1: Legislative Requirements</i>	7
<i>Table 2.2: 2006-2007 Customer Satisfaction Survey Levels</i>	8
<i>Table 2.3: Current Service Levels</i>	10
<i>Table 3.1: Population Targets and 2007 Actuals</i>	14
<i>Table 3.2: Environmental Sustainability Strategy Impact on Lighting, electrical and CCTV Assets</i>	16
<i>Table 3.3: Summary of issues Affecting Lighting, electrical and CCTV Assets</i>	17
<i>Table 3.4: Summary of issues Affecting Lighting, electrical and CCTV Assets</i>	18
<i>Table 4.1: ACC Consequence Table</i>	23
<i>Table 4.2: ACC Likelihood Table</i>	24
<i>Table 4.3: ACC Risk Rating Matrix</i>	24
<i>Table 4.4: Risk Register - Major Corporate Risks posed to Lighting and Electrical Service delivery</i> ..	26
<i>Table 5.1: ETSA and ACC responsibilities for ACC owned Lighting Assets.</i>	29
<i>Table 5.2: ETSA and ACC Responsibilities for ETSA Owned Lighting Assets</i>	30
<i>Table 5.3: Maintenance & Operation Expenditure Trends</i>	33
<i>Table 5.4: Life Expectancy of Lighting, electrical and CCTV Assets</i>	35
<i>Table 7.1: Improvement Plan</i>	40

FIGURE INDEX

<i>Figure 1.1: Road Map for preparing an Asset Management Plan</i>	5
<i>Figure 2.1: Proposed Pedestrian Lighting Standards</i>	12
<i>Figure 2.2: Proposed Vehicle Lighting Standards</i>	13
<i>Figure 4.1: Risk Management Framework at ACC</i>	21
<i>Figure 5.1: Asset Installation Profile</i>	31
<i>Figure 5.2: Proposed Lighting Improvement Priority</i>	32
<i>Figure 5.3: Projected Capital Renewal Expenditure</i>	36
<i>Figure 6.1: Projected Operating and Capital Expenditure</i>	38

ABBREVIATIONS

AAAC	Average annual asset consumption
ACC	Adelaide City Council
ARI	Average recurrence interval
BOD	Biochemical (biological) oxygen demand
CCTV	Closed Circuit Television
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DoH	Department of Health
EF	Earthworks/formation
IAMP	Infrastructure and asset management plan
IRMP	Infrastructure risk management plan
GPT	Gross Pollutant Trap
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, 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).

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 is 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 **

EXECUTIVE SUMMARY

Overview

This Infrastructure and Asset Management plan focuses on the management of the City of Adelaide's lighting, electrical and CCTV network. This plan specifies the life cycle requirements for effective management, inspection and replacement of this asset group and outlines the financial implications and standards to be adhered to. This plan is intended to demonstrate how Council will achieve this outcome by applying the principles of responsible asset management planning, the object of which is to:

'Deliver the required level of service to existing and future customers in the most cost effective way'

Council plans to operate and maintain the existing lighting, electrical and CCTV network to achieve the following strategic objectives.

- Ensure the lighting, electrical and CCTV network contributes to the strategic objectives of residential, student, worker and visitor growth by providing appropriate lighting, electrical and CCTV services.
- Ensure the lighting, electrical and CCTV network is maintained to a functional standard, based on appropriate risk assessment processes, as set out in this infrastructure and asset management plan.
- Ensure the lighting, electrical and CCTV network renewal program is sufficient to provide the required levels of service based on appropriate life cycle costs.

The contribution of lighting, electrical and CCTV services towards the strategic goals and asset management objectives will be achieved by:

- Ongoing stakeholder consultation to establish and confirm service standards.
- Implementing a program of monitoring, inspections and testing activities to assess asset condition and performance.
- Identifying operational, maintenance, renewal and upgrade requirements and applying risk and economic analysis to establish the most cost effective works programs.
- Ensuring services are delivered at a competitive price and quality.
- Continuously reviewing and improving the quality of Asset Management practices and updating the Infrastructure and Asset Management Plan as a result.

What Council Provides

Council provides a lighting, electrical and CCTV network that provides night time illumination for pedestrian and vehicle safety, electrical infrastructure for city events and activities, security for visitors and residents and contributes to the night time amenity of the City.

This network comprises lighting columns and lamps, wiring, ducting and pits, switchboards as well as CCTV camera surveillance networks.

What does it Cost?

The current lighting, electrical and CCTV network has a replacement value of \$59.8 Million, a written down value of \$44.0 Million and an average remaining life of 29.2 years as at the 2007 revaluation.

The total lifecycle cost of the existing lighting, electrical and CCTV asset category is \$2.67 Million per year. This is the averaged annual level of spend required to ensure all assets are operated and maintained in accordance to current standards and renewed at the end of their useful life. Actual annual expenditure requirements will differ from year to year as specific assets come up for renewal. The total lifecycle cost of this asset group will trend upwards due to significant enhancement spending that increases the asset base.

Levels of Service

This plan is focused on clarifying and defining key elements of service for lighting, electrical and CCTV assets and then identifying and costing future operations, maintenance, renewal and upgrade works required to meet these levels of service. The key target levels of service are presented below. This is the first step towards confirming the levels of service required by the community. The next step is to monitor relevant performance measures and undertake consultation with the community to confirm that these service levels are required and relevant.

Asset Base

Existing Assets

The City of Adelaide currently has lighting, electrical and CCTV network that is provided by Adelaide City Council assets and ETSA assets. The Adelaide City Council owned lighting, electrical and CCTV network is relatively new and has been largely developed since 1980. The ETSA owned network which provides about 50% of the street lighting service comprises predominantly light fittings attached to relatively old stobie poles supporting overhead wire infrastructure. The service level provided by ETSA owned infrastructure generally provides a lower standard or service as lighting services are limited to existing locations of ETSA stobie poles.

Condition and Renewal Needs

Generally, Adelaide City Council owned assets are in good condition with an expected life of 25- 50 years, therefore relatively minimal renewal is required over the next 10 years. Any requirement for additional renewal expenditure will be reviewed on an annual basis in conjunction with the Annual Business Plan and Budget process.

Demand Projections

Growth

There will be significant growth in this asset category through the upgrade of assets, due to the service limitations of the ETSA owned lighting infrastructure and network expansion implemented as part of the enhancement program.

Increase in Levels of Service

During the last 20-25 years there have been significant changes to the lighting levels recommended by Australian Standards and in addition there have been significant increases and changes to pattern of vehicle and pedestrian traffic in the City of Adelaide. Therefore there are still significant portions of the lighting network that do not comply with the recommendations of the current revisions of the Australian Standards. These locations are generally serviced by the ETSA owned assets that also support overhead infrastructure.

Enhancement and Capital programs are in place to underground overhead wires and install lighting services to meet appropriate service levels.

As part of the ongoing improvement process for this plan the outcomes of Council's ongoing safety audits and community consultation on desired levels of service will be used to identify any required changes in level of service and utilised for future revisions of this Infrastructure and Asset Management Plan.

Financial Projections

Operation and Maintenance Trends

This plan does not recommend any significant increase or decrease in operational expenditure. It is recommended that the maintenance plan be reviewed to ensure maintenance expenditure and practices align with service levels.

Renewal Expectations

As the lighting, electrical and CCTV assets are relatively new in comparison to their expected lives, the renewal expenditure is low over the next 10 years.

10-Year Expenditure Forecast

In order to meet the renewal and operational needs of the lighting, electrical and CCTV asset group to provide the

required levels of service the total annual expenditure required is estimated to vary between \$2.39 and \$2.75 Million over the next 10 years.

Conclusion

The main driver for this plan is to determine the ongoing expenditure required to manage the lighting, electrical and CCTV network to provide appropriate levels of service for the community of Adelaide. The expenditure has been determined using all existing information regarding the asset base, its condition and expected service delivery.

This plan is the first step towards an overall integrated management program for the City of Adelaide's lighting, electrical and CCTV assets. It is anticipated that this document will be live and be updated annually as part of the Business Plan and Budget Process of Council. The plan improvements and actions resulting from this initial asset management plan include:

- Integrating this plan with other asset groups to provide an overall integrated renewal plan in line with current financial policy.
- Developing a rolling 3 year programs for the Adelaide City Council Annual Business Plan and Budget process.
- Providing financial forecasts to be incorporated into the Long Term Financial Plan
- Continuing to refine and improve this plan, specifically:
 - Improving the quality and volume of asset data through targeted data collection programs.
 - Engaging the Community and other stakeholders to verify the required levels of service for lighting, electrical and CCTV assets.
 - Continuing to understand industry practices, standards and innovations with regards to lighting, electrical and CCTV infrastructure.

1 INTRODUCTION

1.1 Background to Plan

The format of this plan is based on the Local Government Association Infrastructure and Asset Management Plan template provided by the LGA in 2007 with the plan content based on the superseded 'Lighting and Undergrounding Total Asset Management Plan produced by Adelaide City Council in 1999. This plan has been developed in 2007 by Adelaide City Council and uses improved asset management calculations and techniques to update the previous information held within the 1999 plan.

Adelaide City's lighting, electrical and CCTV network has been a major investment by the community over a long period of time and provides a valuable service to the City. The assets have been acquired and developed over several generations and must be properly maintained and developed to continue to provide adequate service and benefits for generations in the future. This plan demonstrates Council's responsive management of lighting, electrical and CCTV assets (and services provided from these assets), compliance with regulatory requirements and proposed funding requirements to provide the required levels of service.

This plan is intended to demonstrate how Council will achieve this outcome by applying the principles of responsible Asset Management Planning, the object of which is to:

'Deliver the required level of service to existing and future customers in the most cost effective way'

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

The contribution of lighting, electrical and CCTV services towards the strategic goals and Asset Management objectives will be achieved by:

- Ongoing community and other stakeholder consultation to establish and confirm service standards.
- Implementing a program of inspections and monitoring activities to assess asset condition and performance.
- Identifying operational, maintenance, renewal and upgrade requirements and applying economic and risk analysis to establish the most cost effective works programs.
- Ensuring services are delivered at a competitive price and quality.

¹ IIMM 2006 Sec 1.1.3, p 1.3

- Continuously reviewing and improving the quality of Asset Management practices and updating the Infrastructure and Asset Management Plan as a result.

1.2 Scope of the Plan

This infrastructure and asset management plan covers the infrastructure assets shown in Table 1.1.

Table 1.1: Assets Covered by this Plan

Asset category	Dimension
Lighting and Electrical Installations (networks)	523
CCTV Cameras (single network)	38
CCTV Control Sites (SAPOL monitoring locations)	2

Note: Assets not owned by Adelaide City Council have not been included. Adelaide City Council is responsible for the provision of all lighting services however a significant portion of the lighting services are provided to the City of Adelaide by ETSA owned assets. ETSA operates and maintains these assets and charges a tariff to Adelaide City Council to provide this service.

1.3 Key Stakeholders

Key stakeholders in the preparation and implementation of this infrastructure and asset management plan are listed in Table 1.2.

Table 1.2: Key Plan Stakeholders

Stakeholder	Role
Capital Planning Team	The Capital Planning Team is responsible for the production and maintenance of this asset management plan
Asset Manager: Lighting and Electrical (Bruno Castellucci)	Provide professional advice, Review, asset manager sign off.
City Operations (Peter Sossic / Darren Aesche)	Provide input and review of maintenance expenditure and Service Levels
Corporate Planning and Strategy (Clare Mockler / Nicholas Carr)	Annual Business Plan and Budget Process / strategic Management Plan Review
Finance (Mike Carey)	Long Term Financial Plan input
Manager Capital Works	Review and Management Sign Off
Manager Asset Management	Review and Management Sign Off
General Manager City Places and Projects	Executive Management Endorsement, Sign Off and Executive Ownership.
Adelaide City Council Elected Members	Adoption and Asset Management Leadership.
Local Government Association	Advice and training on plan development.

1.4 Relationship with other Plans

This Lighting, electrical and CCTV Infrastructure and Asset Management plan is to be read with the following associated planning documents:

- Annual Business Plan
- Strategic Management Plan
- Long Term Financial Plan
- Lighting Policy and Operating Guidelines
- Undergrounding (Overhead Electricity and Telecommunication Cables) Policy and Operating Guidelines
- Encroachments Policy and Operating Guidelines

- Crime Prevention Through Environmental Design Policy and Operating Guidelines.

1.5 Plan Framework

Key elements of the plan are

- Levels of service – specifies the services and levels of service to be provided by Adelaide City Council.
- Future demand – how this will impact on future service delivery and how this 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
- Monitoring – how the plan will be monitored to ensure it is meeting Council's objectives.
- Asset management improvement plan

A road map for preparing an infrastructure and asset management plan is shown below.

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Figure 1.1: Road Map for preparing an Asset Management Plan

Source: IIMM Fig 1.5.1, p 1.11

2 LEVELS OF SERVICE

This section defines the service levels or performance standards that are required and why they have been selected as relevant to the Adelaide lighting, electrical and CCTV network. The service levels are introduced to support Council's strategic goals and statutory requirements.

2.1 Introduction

A key objective of this Infrastructure and Asset Management plan is to identify the current level of service provided by the asset group. This level of service has been developed over time as a result of customer feedback and consultation and is the level of service seen in the public realm now. The levels of service defined in this section will be used:

- To inform customers of the proposed type and level of service they should expect.
- As a focus for the development of Asset Management strategies to meet these levels of service.
- As a measure of the effectiveness of Council's Asset Management practices and the performance of this plan.
- To identify the costs and benefits of the services offered.
- To enable Council and customers to discuss and assess the suitability, affordability and equality of the existing service level and to determine the impact of increasing or decreasing this level in future.

The adopted levels of service for lighting, electrical and CCTV services are shown below. These standards reflect current industry standards and are based on:

- Legislative Requirements (Section 2.2): Standards, Regulations, Acts and Council By-Laws that impact the way assets are managed.
- Customer Expectations (Section 2.3): Information gained from customers on expected service levels
- Strategic and Corporate Goals (Section 2.4): Provides guidelines for the scope of current and future services offered and defines specific levels of service which the organisation wishes to achieve.

2.2 Legislative Requirements

Adelaide City Council has to meet many legislative requirements including Australian and State legislation and State regulations. These various sources of legislation are included in Table 2.1.

Table 2.1: Legislative Requirements

Legislation	Requirement
Local Government Act, 1999	Sets out the role, purpose, responsibilities and powers of local governments including the requirements to prepare a strategic management plan and long term financial plan supported by infrastructure and asset management plans for sustainable service delivery.
Electricity Act 1996	An Act to regulate the electricity supply industry; to make provision for safety and technical standards for electrical installations; and for other purposes.
Telecommunications Act 1997	System for regulation of telecommunications
Adelaide Park Lands Act 2005	An Act to establish a legislative framework that promotes the special status, attributes and character of the Adelaide Park Lands; to provide for the protection of those park lands and for their management as a world-class asset to be preserved as an urban park for the benefit of present and future generations;
Emergency Management Act, 1994	Requires lifeline utilities to function at the fullest possible extent during and after an emergency and to have plans for such functioning (business continuity plans)

2.3 Customer Research and Expectations

Customer/community levels of service relate to how the community receives the service in terms of safety, quality, quantity, reliability, responsiveness, cost/efficiency and legislative compliance.

Adelaide City Council's knowledge of customer expectations is based on the following:

Customer satisfaction surveys.

Analysis of customer service requests and complaints.

Consultation for specific capital works projects

Feedback from elected members

The annual business plan and budget process

Council undertakes a customer satisfaction survey annually, surveying City of Adelaide residents, businesses, worker, students and visitors. The survey is conducted in two polls, level of satisfaction and level of importance with Council's services. The most recent customer satisfaction with performance levels from 2006-2007 relevant to lighting, electrical and CCTV service provision are presented in Table 2.2.

Table 2.2: 2006-2007 Customer Satisfaction Survey Levels

Survey Question	Performance (Average of user groups)
General feeling of safety in the City	7.14
Beautifying the streets, squares and Park Lands	6.98
Providing safe, effective footpaths for pedestrians	7.18
Providing safe, effective bike paths for cyclists	5.8
Providing safe, effective roads for motor vehicles.	7.18
The provision and maintenance of adequate lighting.	7.12

All of the customer satisfaction indicators outlined in Table 2.2 meet the target of 6.5 (See full report for more detail) with the exception of providing safe, effective bike paths for cyclists. A survey has been conducted in September 2007 to gauge the importance of performance and further analysis will be undertaken in areas where performance does not meet customer expectations. At this stage any issues pertaining directly to lighting, electrical and CCTV infrastructure will be highlighted, particularly if the performance in provision of safe, effective bike paths for cyclists is linked to lighting, electrical and CCTV service provision.

2.4 Strategic and Corporate Goals

In 2008 Council developed and adopted its Strategic Directions which set out Council's vision and path into the future. Council's vision is for:

"A vibrant, prosperous and sustainable Capital City built upon Adelaide's heritage and lifestyle"

To assist Council in achieving this vision, a number of outcomes and strategies were developed. The following strategy links Infrastructure and Asset Management Plans to the strategic outcomes and direction of Council:

Strategy 52: Provide new and maintain existing Council assets and infrastructure in accord with Asset Management Plans and policies.

In addition to this, Council is required by legislation to develop a Corporate Management Plan which describes Council's role in supporting its vision and sets out the key targets and principles that drive the operation of council. The Infrastructure and Asset Management Plans sit within this framework as part of the suite of documents that make up Council's Corporate Management Plan and document the principles and directions for management and maintenance of council's asset base. In order to reflect changes in asset portfolios, asset management practices and emerging strategic directions, these plans are updated annually as part of the annual business plan and budget process.

Adelaide City Council plans to operate and maintain the existing lighting, electrical and CCTV network to meet these goals through the following strategic objectives.

- Ensure the lighting, electrical and CCTV network contributes to the strategic objectives by providing the required lighting, electrical and CCTV services.
- Ensure the lighting, electrical and CCTV network is maintained at a safe and functional standard as set out in this infrastructure and asset management plan.
- Ensure the lighting, electrical and CCTV network renewal program is sufficient to preserve the required levels of service and that this profile is linked to other asset renewal profiles (roads, footpaths etc) to minimise impact on surrounding assets and the community at large.

2.5 Current Levels of Service

Table 2.3: Current Service Levels

Key Performance Criteria	Performance Measure	Performance Target	Performance Measure Process	Current Performance
Customer Satisfaction	Performance rating from customer's satisfaction of Council providing lighting, electrical and CCTV services.	6.5 out of 10 average for areas relevant to lighting, electrical and CCTV service provision	Monitor community satisfaction through annual customer surveys.	6.9 (2007 survey)
Environment	Reduction of extent of overhead electricity and telecommunications cables.	No new additional overhead electrical and telecommunication cables and infrastructure. Ongoing undergrounding program.	Development Approval process. Allocation of funding annually for ongoing undergrounding program projects.	Not currently known Achieved - Ongoing
Environment	Increase "White Light"	Ongoing "White Light" program as per lighting policy.	Allocation of funding annually for ongoing white light projects.	Achieved - Ongoing
Safety	Absence of significant health safety hazards	All significant hazards identified and removed or mitigated within 6 hours where possible. High priority hazards to be acted upon within one week. Medium priority hazards acted upon within one month. Low priority hazards acted upon within one month or within next financial year when cost of remedial works cannot be accommodated within current financial year.	Partial logging of hazards within Pathway system. Processes for monitoring and reporting on this performance target to be developed in future revision of this plan including: Periodic safety and hazard identification audit Document and Track events. Periodic review of internal service provider's performance in carrying out maintenance safely.	Not currently known

Key Performance Criteria	Performance Measure	Performance Target	Performance Measure Process	Current Performance
Safety	Provide CCTV Camera coverage as required by SAPOL and CCTV Management and Strategic Group.	Cameras installed or decommissioned within next financial year as required by the CCTV Management and Strategic Group.	As outlined in Memorandum of Understanding between Adelaide City Council and South Australian Police Department	Achieved - Ongoing
Design Standards	New projects to provide lighting and CCTV infrastructure which is compliant with Australian Standards and Adelaide City Council Urban Elements Design and Construction Standards.	100% project design compliance All non-compliant assets rectified within 3 months of practical completion.	Process to be detailed in future revision of this plan to: Carry out hand over and night time inspection of completed projects and identify outstanding compliance issues.	Not currently measured
Condition	Renew assets as required.	Renew assets at the end of useful life. Undertake regular condition audits to provide information on condition of assets approaching end of life.	Process to be detailed in future revision of this plan.	Not currently measured
Responsiveness	Lighting & Electrical services: Rectify non-ETSA faults within specified time. CCTV faults rectified within specified time.	As per service level agreements, see Section 5.2.3. These service levels are subject to agreement with relevant service providers.	Process to be detailed in future revision of this plan. Logging of faults is currently undertaken in Pathway.	Not currently measured

Note: The data required to monitor and report on Council's specific performance in some areas is not available. Improved collection of this data is listed as a required improvement outcome for this plan and will provide the required data for future revisions of this plan.

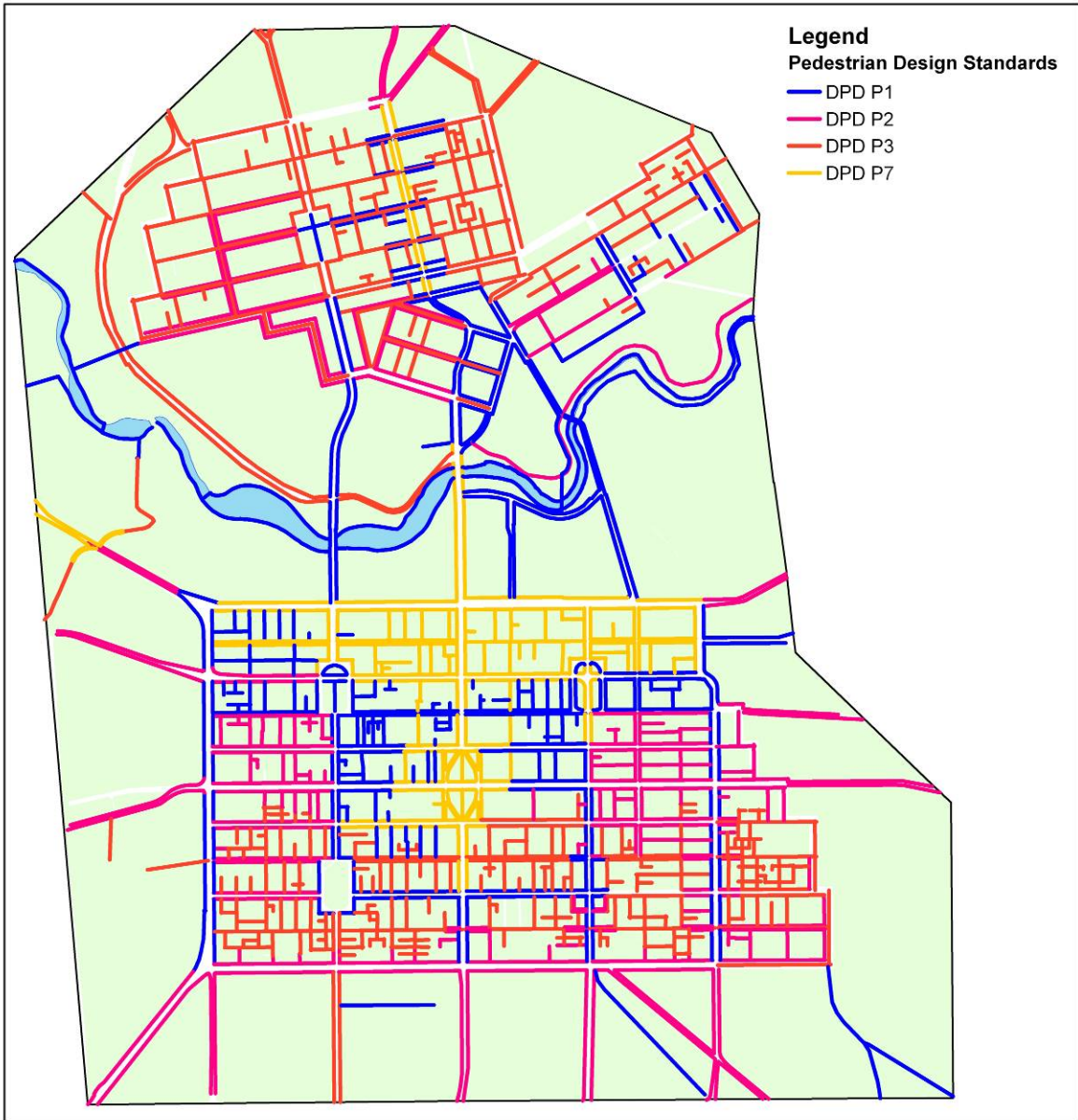


Figure 2.1: Proposed Pedestrian Lighting Standards

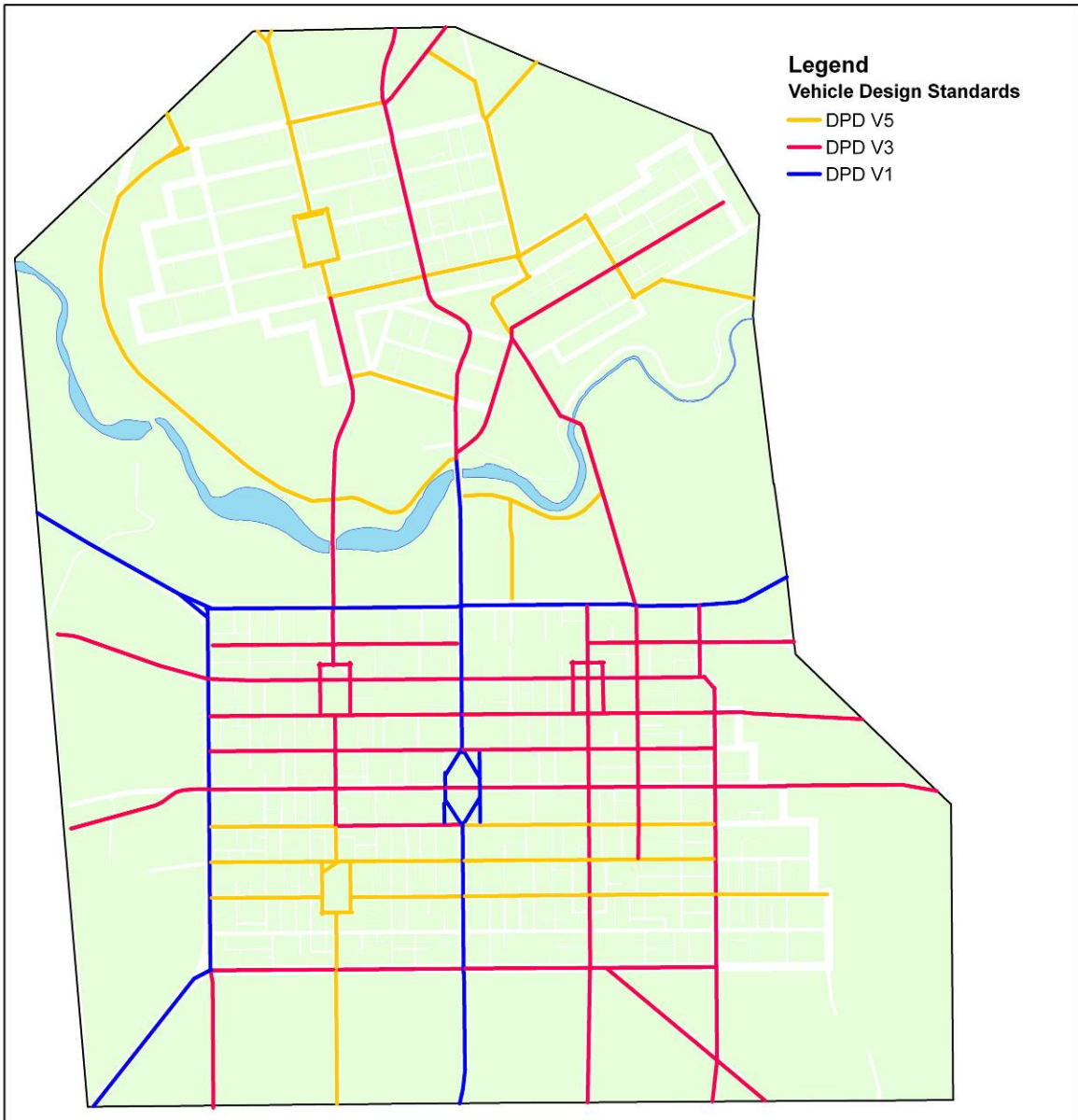


Figure 2.2: Proposed Vehicle Lighting Standards

3 FUTURE DEMAND

This section of the plan analyses the potential factors effecting demand including population growth, social and technology changes. The impact of these trends is examined and demand management strategies recommended as required to modify demand without compromising customer satisfaction.

3.1 Demand Growth Trends

3.1.1 Population Growth

The primary strategy of Council's Strategic Management Plan 2004-07 is to "increase the number of people living, visiting, working and learning in the City to an optimum sustainable level" and has given rise to four growth plans focusing on growth in resident, worker, student and visitor populations.

Growth targets to 2010 have been set for each population area and are summarised as follows.

By 2010:

- Adelaide will have an overnight population of 34,000, including at least 26,000 permanent residents
- Adelaide will have a City workforce of at least 111,000
- Adelaide will have at least 66,000 students in institutional learning
- visitor activity in the City will have grown to generate daily movement counts of at least 140,000 in Rundle Mall

Population figures as at June 2007 are listed in Table 3.1 against the 2010 targets.

Table 3.1: Population Targets and 2007 Actuals

Population	2007 Actual	2010 Target
Residents (overnight population)	18,427	26,000
Workers	108,007	111,000
Students	75,398	66,000
Visitors	129,982	140,000

The achievement of the 2010 targets will be dependent on a number of factors including:

- general economic conditions;
- government policy decisions;
- metropolitan investment decisions;
- consumer preferences; and

- industry trends.

The effectiveness of the projects and programs arising for each of Council's Population Growth Plans, and other Council Strategies aimed at creating the conditions for sustainable activity and quality of life, will also impact on population growth.

Based on recent growth trends:

- the 2010 resident population target appears out of reach, however continued growth is forecast
- the 2010 workforce population target appears achievable
- continued growth of student numbers is forecast
- there will be only marginal growth in visitor numbers.

The increased city populations will significantly increase demand for lighting and security services within the city, with future works required to meet development and the changing patterns and needs of city users. The impacts of student, worker and visitor population growth will largely be concentrated in the northern part of the Central Business Area and Mixed Use Zones.

The City of Adelaide is in a unique situation in comparison to the majority of other Councils as it has no large areas of land available for green field's growth. As a result population growth within the city is expected to drive infill development only. Growth in population and development within the City will however increase the number customers expecting appropriate lighting, electrical and CCTV network performance. This will need to be managed along with other customer expectation issues.

3.2 Other Influences on Demand

3.2.1 Technology Advances

Technology advances applicable to the life cycle management of lighting, electrical and CCTV assets are being made available in the following areas:

- Improved lighting performance, materials, dimming and control equipment.
- CCTV systems, including camera size and picture quality, and
- Integration of renewable energy sources

Council will monitor and investigate advances in technology and introduce them as appropriate.

3.2.2 Legislative and Standard Changes

Legislative change has the potential to significantly affect the Councils ability to meet minimum levels of service, and may require improvements to infrastructure assets. Revisions of the Australian Standards for Lighting, Electrical, CCTV standards and codes will impact significantly on the design standard of assets.

3.2.3 Environment

Adelaide City Council's Environment Sustainability Strategy outlines actions in responses to climate change appropriate for lighting, electrical and CCTV infrastructure as detailed in Table 3.2.

Table 3.2: Environmental Sustainability Strategy Impact on Lighting, electrical and CCTV Assets

Adelaide City Council Environmental Sustainability Strategy	Impact on Lighting, electrical and CCTV Assets
2.1.3 Increase the use of renewable energy 2.4.8 Purchase accredited renewable energy	Renewable energy may come from a mix of new power generation assets or purchase of renewable energy from the power grid. New infrastructure and/or increased operating costs.
5.1.1 Implement a revolving environmental fund for energy improvements to City of Adelaide lighting.	Modification / replacement of assets to improve energy efficiency. Refinement of Service levels and adaptation of assets to minimise over servicing.
2.1.1 Implement a carbon neutral strategy for the City 2.4.1 Implement a strategy that will see council carbon neutral by 2020 4.6 Change purchasing practices to reduce waste. 5.5 Consider environment in project management.	Increase in capital, renewal, maintenance and operational asset costs.

3.2.4 Changes in Customer Expectations

Council staff will continue to monitor customer expectation with regards to lighting, electrical and CCTV assets. Customers expect that public areas, particularly roads and footpaths will be suitable lit throughout dark hours.

It is also expected that a greater emphasis will be placed on renewable energy technologies and initiatives. While this will have no direct impact on the demands placed on our existing lighting, electrical and CCTV network, the design and implementation of these systems need to take into account the overall environmental factors and in the process may drive lighting, electrical and CCTV network improvements indirectly.

Increasingly customers are expecting higher aesthetics from lighting, electrical and CCTV infrastructure, particularly in sensitive areas such as commercial areas, Park Lands, residential and heritage zones.

3.3 Impact of Trends on Infrastructure Assets

The demand for improved aesthetics will see a move from ETSA owned and operated assets provided in conjunction with overhead power supply (typically stobie poles) towards lighting provided by purpose built lighting installations with undergrounding of overhead power supply infrastructure. This trend will see a continued increase in infrastructure that is owned by Adelaide City Council.

Table 3.3 is a summary of the above issues and how they may impact on the management of lighting and electrical assets.

Table 3.3: Summary of issues Affecting Lighting, electrical and CCTV Assets

Issues	Impact on Lighting, electrical and CCTV Assets
Population Growth	Increased Customer Expectations.
Development	Changes in demand for services, including undergrounding and increase in lighting service levels.
Technological Change	Higher use of solar / alternative energy supplies.
Legislative and Standard Changes	No current legislation that will impact on lighting, electrical and CCTV assets. The impact of previous legislative changes are ongoing, as capital and renewal works are designed and constructed to the new standards.
Customer Expectations	Higher level of service required to meet increased customer expectations
Environment	See Section 3.2.3

3.4 Demand Management Strategies

Demand management strategies provide alternatives to the creation of new assets in order to meet demand and look at ways to modify customer demands in order that the utilisation of existing assets is maximised and the need for new assets deferred or reduced. The objective of demand management is to actively seek to modify customer demands for services in order to

- Optimise utilisation/performance of existing assets.
- Reduce or defer the need for new assets.
- Meet organisation’s strategic objectives.
- Deliver a more sustainable service.
- Respond to changing customer needs.

Demand management is practiced constantly to maintain the total demand at reasonable levels. The 5 components of demand management are shown in Table 3.4 with examples relating to Lighting, electrical and CCTV assets. (Note not all demand components are relevant for all assets or plans).

Table 3.4: Summary of issues Affecting Lighting, electrical and CCTV Assets

Demand Component	Lighting, electrical and CCTV Examples
Operation	Temporary, in lieu of permanent, infrastructure for minor event areas.
Regulation	Restrict access
Incentives	Provide incentives to encourage demand in areas with adequate capacity.
Education	Signage to encourage pedestrian use of adequately lit areas.
Demand Substitution	Provide other services such as security/police

Adelaide City Council implements demand management strategies such as:

- Where practical, utilise bundling of overhead cables in lieu of undergrounding to resolve tree clearance issues
- Utilisation of existing infrastructure to implement interim improvements
- Provision of lighting by private parties, including under awning lighting
- Seek external funding/partnership government, non-government and private bodies to implement undergrounding programs (as per undergrounding policy), CCTV camera program, Events infrastructure program and sharing of infrastructure.

4 ASSET MANAGEMENT PRACTICES

This section identifies the strategies, practices and guidelines supporting Asset Management at Adelaide City Council. These activities have no direct impact on the condition or performance of the asset themselves, but provide the tools and functions required to support the maintenance, renewal and enhancement plans. These functions include:

- System planning and monitoring
- System record management
- Asset management planning and policy

4.1 Standards and Guidelines

Asset Management practices and processes are driven by a number of legislative requirements and assisted by developed guidelines.

Local Government Act 1999 (sets out Councils Asset Management responsibility and the requirement to develop asset management plans)

Australian Accounting Standard 27 Financial Reporting by Local Governments 1996 (sets out the asset accounting requirements)

International Infrastructure Management Manual, NAMS (Provides guidance and direction on asset management policy and plan development)

Local Government – Asset Management Template Document (Provides Local Government Organisations with a standard template to adopt for the development of Asset Management Plans)

4.2 Information Flow Requirements and Processes

The key information flows *into* this infrastructure and 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 infrastructure and 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.

Financial projections in this plan are developed in consultation with the Finance Department and are provided to the Finance department for incorporation into the Long term Financial Plan. Both capital and renewal projects identified by this plan will be the basis of rolling 3 year plans that will form the foundation of the Strategic Business Plan and Annual Budget from year to year.

New assets are added to the Hansen asset management system by the Capital Planning team. Every capital project results in a handover file that is checked by the relevant asset manager prior to forwarding to Capital Planning. Hansen and the GIS records are updated to reflect any changes made to the asset inventory. Additionally, data pertaining to the capital expenditure is capture for each asset. Once this is complete, the project is removed from the Works in Progress ledger.

4.3 Risk Management

4.3.1 Overview

Adelaide City Council aims to manage its asset risks in a responsible manner to enable lighting, electrical and CCTV business objectives to be consistently met. The objective of the risk management process with regards to lighting, electrical and CCTV assets is to ensure that

- All significant operational and organisational risks are understood and identified.
- The highest risks that should be addressed in the short to medium term are identified.
- Risk reduction strategies and treatments are identified and applied.

An assessment of risks 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.

All network assets, or groups of assets with similar risk characteristics have been screened considering potential failure modes and events to identify risks.

Risk Management Strategy

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All network assets or groups of assets with similar risk characteristics have been screened considering potential failure modes and events to identify risks.

The adopted Adelaide City Council Risk Management Framework and Methodology presented graphically in Figure 4.1 includes the following components:

- Establishing the internal and external context;
- The identification of major business risks;

- The analysis of identified risk in terms of potential impact and likelihood of occurrence;
- An evaluation of the external and control environment to manage the risk;
- Development of action plans (treatments) to correct identified weaknesses; and
- Monitoring and reviewing the effectiveness of the risk management process.

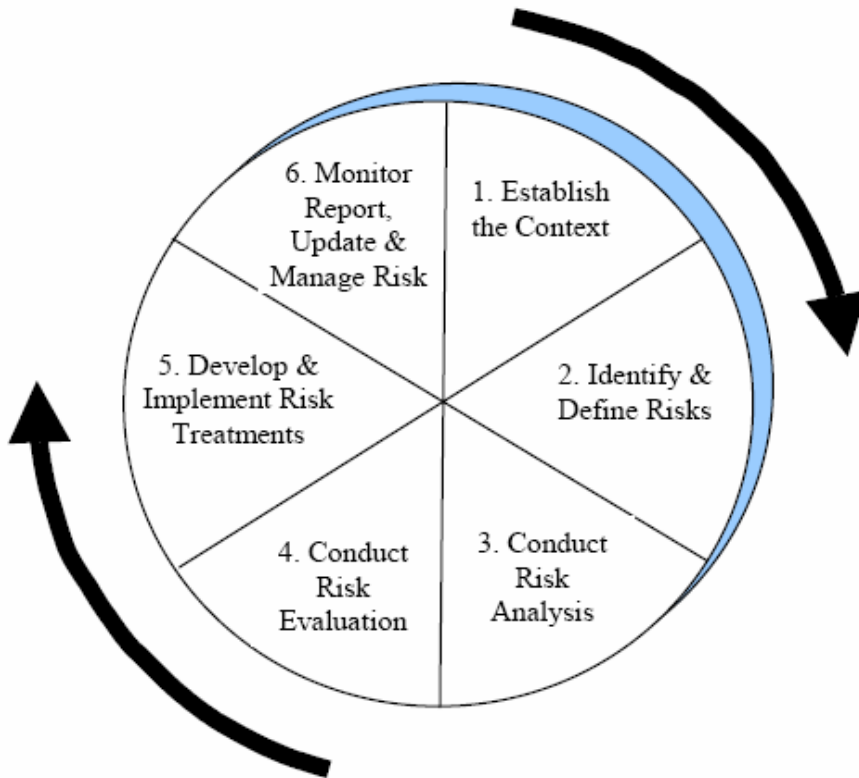


Figure 4.1: Risk Management Framework at ACC

4.3.2 Step 1 - Context - Risk Criteria and consequence of Risk

The key risk management criteria relating to Council assets include:

- Public health and safety.
- Service provision.
- Environmental and legal compliance.
- Security, theft and vandalism.
- Business interruption.
- Financial risk (escalating costs in deterioration).
- Damage through storms, flooding, water damage or fire damage (including arson).
- User group accountability.

The establishment of risk management criteria is one of the most important steps in the risk management process, as it sets the framework for consistent risk decision making.

4.3.3 Step 2 - Risk Identification

Risk identification for lighting, electrical and CCTV assets can be identified from a number of resources such as:

- Routine inspection by Council officers.
- Reports from SAPOL.
- Reports from user groups and occupants.
- Reports and complaints from general public.
- Information obtained from incidents (damage reports, break in reports etc)
- Details from past insurance claims.
- Advice from professional bodies.
- Past experience.

4.3.4 Step 3 & 4 - Risk Analysis and Evaluation

Risk analysis and evaluation determines the likelihood and consequence of events and other risks to Council assets and then uses a risk rating to determine the level of risk for the particular activity or event. These risks are then evaluated against the systems currently in place to determine if they are appropriate as is to mitigate the risk or determines prioritised actions to work towards risk mitigation.

Consequence

Table 4.1 provides a list of various risk categories along with descriptions of the different consequences. This table is used as assistance to the assessor who will identify a hazard and then select the most relevant risk category and consequence severity. It is feasible that a hazard or event could result in any of the consequences listed, but the ones selected should be the one most likely to occur.

Table 4.1: ACC Consequence Table

Risk Category	Consequences			
	Minor	Moderate	Significant	Major
Financial	< \$250,000, or An event that can be managed within divisional budget	\$250k - \$1 million, or An event that can be met out of Council budget without a net Corporate variation	\$1 - \$4 million, or An event that requires a major change to Council budget	> \$4 million
Employee Welfare/Public Safety	Injuries requiring medical attention High incidence of non treatment injuries	Hospitalisation of staff Single permanent disability	Multiple permanent disability to staff Hospitalisation of multiple staff	Death or multiple deaths
Legal	Dispute that may be resolved without legal remedy	Fines or penalties of a minor nature being imposed on the Corporation	Corporation directed to undertake specific activities to remedy breaches in legislation	Major breach of legislation resulting in severe Corporation penalties, fines or imprisonment of Corporation staff Class actions
Environment	Adverse events that can be remedied immediately	Adverse events that are short term and reversible	Significant adverse event causing widespread damage which may be reversed through appropriate remedial action	Major adverse environmental event requiring continuing long term remedial attention
Reputation / Brand Image / Political	Localised community concern	State wide adverse media attention Detrimental inter governmental relationships	Prolonged adverse media attention state wide or national media attention Ongoing disagreement between State Government and Council	Prolonged adverse media campaign Irreparable damage to government relations Lord Mayor / Councillors / CEO forced to resign
Service Delivery	Interruption to service not requiring any further remedial action (i.e. minimal impact on customers)	Interruption to a service that can be immediately remedied with moderate impact on customers	Interruption to services causing significant customer inconvenience	Inability to deliver an essential public service for an extended period

Likelihood

Each possible event must now be subjectively assigned an estimate of likelihood or probability of a hazard occurring. This is achieved with reference to the Likelihood values in Table 4.2.

Table 4.2: ACC Likelihood Table

Likelihood of Occurrence	Descriptor
Almost Certain	Is expected to occur in most circumstances
Likely	Will probably occur in most circumstances
Possible	Might occur some of the time
Unlikely	Could remotely occur some of the time or only in exceptional circumstances

Risk Rating

The overall risk rating is determined by combining the consequences and their likelihood. The following can be used to determine the overall rating for the identified risk.

Table 4.3: ACC Risk Rating Matrix

Likelihood	Consequence			
	Minor	Moderate	Significant	Major
Almost Certain	High	High	Extreme	Extreme
Likely	Moderate	High	High	Extreme
Possible	Low	Moderate	High	Extreme
Unlikely	Low	Low	Moderate	High

Once the risks have been assessed and rated, the most significant risks (those rated as extreme) are isolated for treatment/control. High risks are forwarded to the Asset Management for consideration (may require future budget allocations) while those identified as moderate or low will continue to be monitored and reviewed if circumstances change.

Options to treat risks include (but not limited to)

- risk elimination
- reduction in the cause or likelihood of the event occurring
- reduction in the consequence or severity of the event if it were to occur
- increasing the maintenance regime

- initiating council improvements
- changing operating processes and procedures
- sharing the risk through insurance or contracts
- doing nothing and accepting the risk

Some risks may require substantial capital or operating expenditure before treatment options can be undertaken. In these situations, those responsible must also consider short term controls to mitigate the risk until a solution can be implemented.

Risk Register

The overall risk rating is determined by combining the consequences and their likelihood. Table 4.4 indicates the major corporate risks and the suggested treatment options.

Table 4.4: Risk Register - Major Corporate Risks posed to Lighting and Electrical Service delivery

Risk Identified	Consequence	Likelihood	Risk Rating	Proposed Treatment	Responsibility	Completion Date
Natural Disaster – ie flooding / earthquake	Major	Unlikely	High	Manage through existing systems and procedures.	Emergency Response Plan Recovery Planning: Asset Managers and Capital Planning	Not Applicable
Power Supply Failure	Moderate	Possible	Moderate	Manage through existing systems and procedures.	ETSA Utilities	Not Applicable

4.4 Accounting/Financial Systems

Adelaide City Council operates the Technology One system for management of financial information. This system is managed by the Finance Business Unit. Technology One is interfaced with the Hansen Asset Management System (see below) to enable the transfer of financial asset information between the two systems.

4.5 Asset Management System

Adelaide City Council operates the Hansen system for management of asset information. The asset management system is linked to the finance system via a software interface.

Asset managers are responsible for maintaining data pertaining to their asset area. Capital Planning are responsible for addition or deletion/expiry of new or disposed assets.

Complementing the Hansen database, geographical data is held on all assets. ArcMap software is used to display and edit geographical data.

5 LIFECYCLE MANAGEMENT PLAN

This section presents asset performance and condition information and uses the Asset Management principles and decision making presented in Section 4 to develop broad strategies and specific work programs to achieve the goals and standards outlined in Section 2 and 3.

It presents an analysis of available asset information and the life cycle management plans covering the three key work activities to manage the lighting, electrical and CCTV network;

- Operations and Maintenance Plan: Activities undertaken to ensure efficient operation and serviceability of the assets. This will ensure that the assets retain their service potential over the course of their useful life.
- Renewal Plan: Provides a program of progressive replacement of individual assets that have reached the end of their useful life. Deteriorating asset condition primarily drives renewal needs.
- Enhancement Plan: Provides a program of system enhancements to improve parts of the system performing below target service standards and to develop the system to meet any future demand requirements. Sub-standard asset performance primarily drives asset development needs.

5.1 Asset Information

The lighting, electrical and CCTV asset group comprises four major components:

- Lighting assets owned by Adelaide City Council.
- ETSA owned assets, typically stobie poles with overhead power supply supporting light fittings.
- CCTV networks
- Electrical infrastructure includes underground electrical ducting/cabling network and power supply switchboard for events areas.

5.1.1 Asset Description

Lighting Assets - Adelaide City Council Owned

The City of Adelaide is serviced by a system of public lighting along roads, footpath, Squares and pathways within Park Lands throughout the city precinct. The street lighting provides night time illumination for pedestrian and vehicle safety, security for visitors and residents and contributes to the night time amenity of the city.

Adelaide City Council's lighting assets comprises lighting columns, street lights, above ground and underground cabling and ducts, fuse pits and switchboards. In addition there are a small number of gas street lights in scattered locations. Power supply assets are generally owned by ETSA, however in some cases underground power reticulation infrastructure, mostly in the Park Lands, is owned by Adelaide City Council.

Other forms of lighting owned by Adelaide City Council include:

- lighting of monuments,
- floodlighting of buildings
- floodlighting of the Torrens Lake
- up lighting and bud lighting of trees

- decorative lighting for special occasions and events.

There are numerous types of columns used for street lighting due to the ancillary equipment mounted on lighting columns, for example, traffic signal equipment, banners, street and parking signs, floodlights, power outlets, CCTV security cameras. Predominantly lighting columns are of galvanised steel manufacture with spherical type lights. In special locations, such as ceremonial streets, highly decorative types of painted poles named 'Adepole' and street lights have been installed.

ETSA is involved with the operation and maintenance of Adelaide City Council owned public lighting assets to varying degrees. This involvement is complicated and varies widely across the asset base. A summary of this relationship in general is provided in Table 5.1, however this may vary on a case by case basis.

Table 5.1: ETSA and ACC responsibilities for ACC owned Lighting Assets.

	ETSA Responsibilities	ACC Responsibilities
Power Supply	Provision of electrical service points and distribution network.	Pay tariffs / energy supply charges. ACC responsible for operations and maintenance of metered and non-metered non-mains power supplies, ie Wind, Solar.
Lamp Replacement	Replacement of lamp for all un-metered public lights. An annual tariff is charged for this service	Pay tariffs as applicable. Supply of non-standard lamps to ETSA where lamps are non-standard. Replacement of lamps where non-public or metered lighting installations (eg monument lighting, Rundle Mall)
Light Fittings	None	Maintenance and Renewal.
Light Poles	None	Maintenance and renewal.
Ducting	None	Maintenance and renewal.

ETSA Owned Assets

Approximately 50% of the public lighting service provided within the City of Adelaide is provided by ETSA owned assets to Adelaide City Council at a cost, generally via tariffs. A summary of this relationship is provided in Table 5.2, please note that this is general information and may not apply to all situations. This service is generally provided via lighting attachment to existing overhead power supply infrastructure. ETSA operate and maintain these assets and charge Adelaide City Council a tariff. There is approximately 60 km of overhead powerlines and supporting stobie pole infrastructure within the City of Adelaide. This infrastructure ranges from low voltage to high voltage 66kV cables.

Table 5.2: ETSA and ACC Responsibilities for ETSA Owned Lighting Assets

	ETSA Responsibilities	ACC Responsibilities
Power Supply	Supply energy.	Pay tariffs / energy supply charges.
Lamp Replacement	Replacement of all lamps as required. An annual tariff is charged for this service	Pay tariffs. Supply of non-standard globes to ETSA where applicable.
Light Fitting (including brackets)	Maintenance and Renewal. A tariff is charged for this service.	Pay tariffs. Supply of non-standard fittings to ETSA where applicable.
Light Poles	Maintenance and Renewal	Capital costs where ETSA install at ACC request.
Ducting	Maintenance and Renewal	Capital costs where ETSA install at ACC request.

The service provided by ETSA owned assets is generally not adequate as described in the Lighting Policy primarily due to aesthetics, and the limitations of using existing power supply pole infrastructure for non standard ETSA lighting fixtures, banner poles and traffic signals etc.

Upgrades of this service involve the disposal of existing infrastructure, undergrounding of the associated power supply (continued ETSA ownership) and installation of lighting columns (new lighting assets ACC ownership). This process typically significantly increases the Adelaide City Council asset base while either maintaining or enhancing an existing service. This enhancement process and the impact on the asset base is described later in this plan.

CCTV Network

Adelaide City Council owns and maintains a network of cameras that are monitored by the Police Security Services Division to improve safety for visitors and residents within the City of Adelaide. The Department of Transport, Energy and Infrastructure has limited access to cameras for traffic management purposes. Sites include Rundle Mall, Hindley Street, Victoria Square and the National Soldiers War Memorial. A total of 38 cameras are operated within the public realm. Various other council owned cameras operate within the City of Adelaide, such as Web Cams and within the Markets, however they are not covered by this plan.

Electrical Infrastructure

Power Switchboards, Bollards and Outlets are provided in various locations around the city for events and special occasions.

5.1.2 Asset Condition

Generally, assets are renewed based on age or condition; however with increasing demands on lighting columns for other uses, such as mountings for banners and traffic signal, a greater understanding of condition is required. This area has been identified for improvement in Table 7.1. Installation date information for Adelaide City Council owned assets is available and is summarised in Figure 5.1.

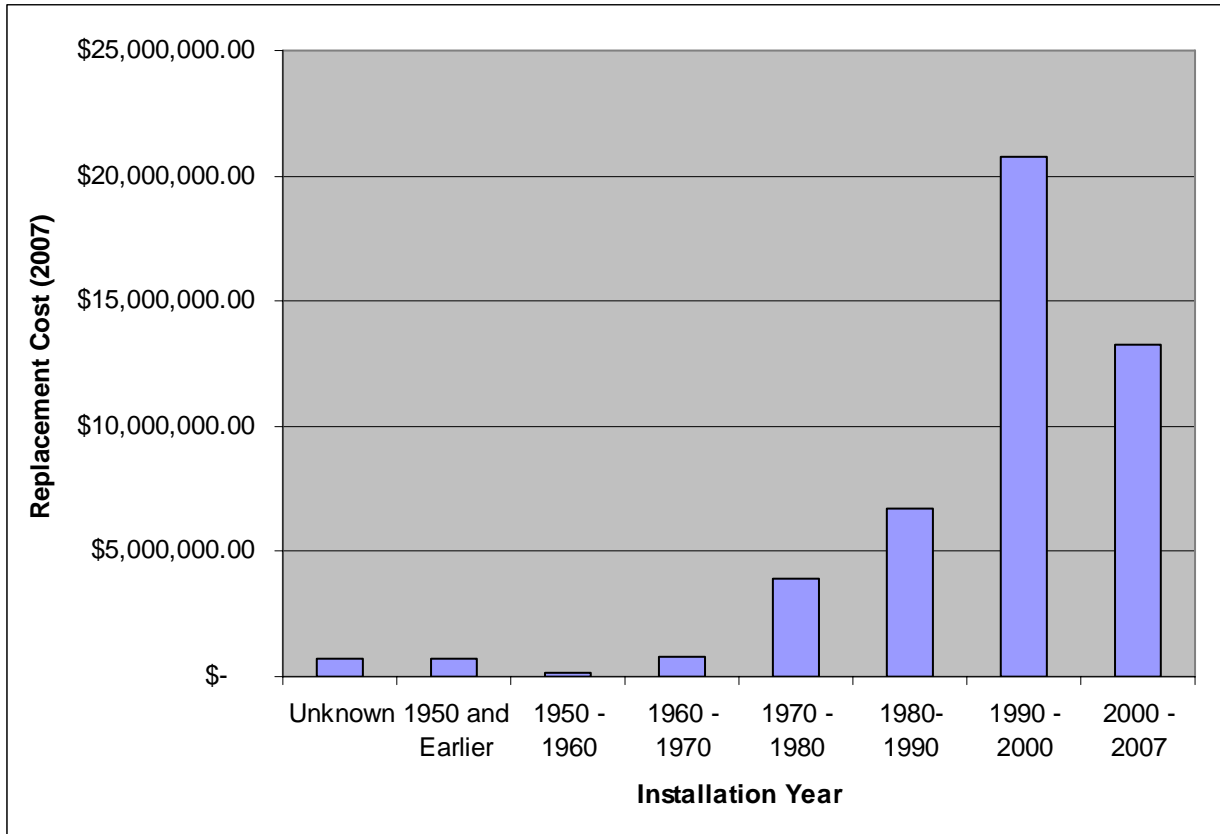


Figure 5.1: Asset Installation Profile

5.1.3 Asset capacity and performance

The design guidelines for the network have been identified and are shown in Figure 2.1 and Figure 2.2.

A qualitative survey has been undertaken by external consultants (DPD in 2006) on behalf of Council to identify improvement priorities for the current lighting network and to define future design standards. (As shown in Figure 5.2). These priorities are assessed and included as appropriate for upgrade as part of the annual business plan and budget process.

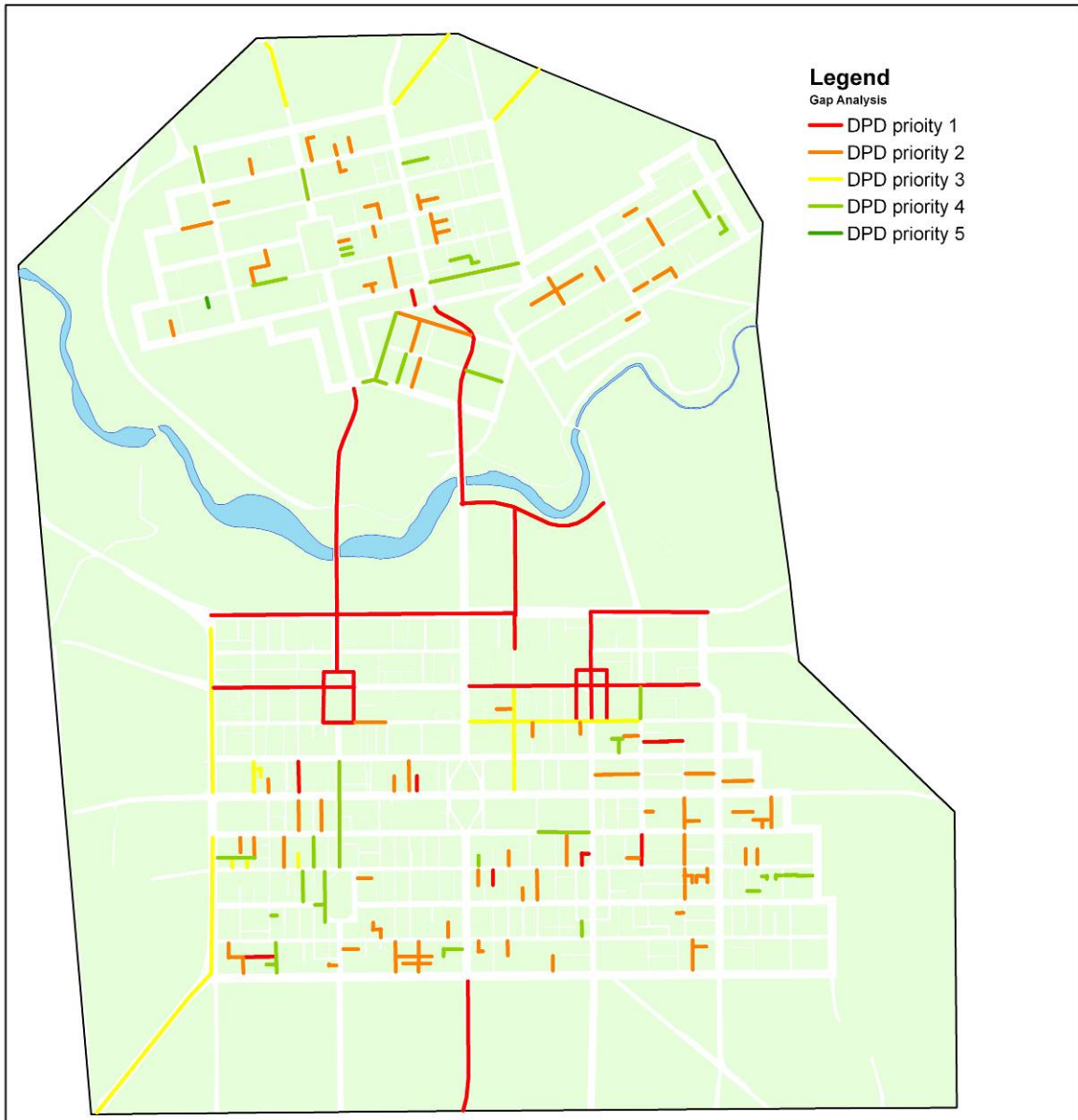


Figure 5.2: Proposed Lighting Improvement Priority

5.2 Operations and Maintenance Plan

5.2.1 Overview

Operations and maintenance strategies optimise the day-to-day activities. Operational and maintenance activities fall into the following categories, each having distinct objectives and triggering mechanisms:

Operations: Activities designed to ensure sufficient utilisation of the asset. These are the regular tasks that are undertaken to ensure the assets achieve their service potential. Operations strategies include activities such as inspections & system monitoring.

Maintenance: Maintenance strategies are designed to enable existing assets to operate to their service potential over their useful life. There are two types of maintenance:

- **Planned Maintenance:** Work carried out to a pre-determined schedule (i.e. tree trimming, night inspections, dome cleaning) or programmed as a result needs identified during inspection.

- **Unplanned Maintenance:** Work carried out in response to reported problems (i.e. replacement of failure of lamp/fitting, damaged light/pole etc)

A key element of asset management planning is determining the most cost effective blend of planned and unplanned maintenance.

The operations and maintenance of the lighting, electrical and CCTV network is undertaken by Adelaide City Council City Wide Services staff, contractors and ETSA.

5.2.2 Operations and Maintenance Strategies

The overall operations and maintenance strategy is intended to retain the current levels of service and mitigate risk while minimising cost. All street lights are inspected at least once every 12 weeks to identify faults, with high priority zone 1 inspected every month. Tree trimming is undertaken on a scheduled basis.

5.2.3 Operations and Maintenance Standards and Specifications

All materials used in the maintenance and repair of the lighting, electrical and CCTV system will comply with all relevant technical standards. All maintenance work undertaken will be in accordance with:

- Council's standard specification and construction standards.
- Appropriate Transport and Traffic Regulations.
- ETSA Service Rules and Regulations
- Occupational Health Safety and Welfare Act and Regulations.

Draft service levels for maintenance undertaken by City Wide Services is outlined in the following documents:

[ACC2001/11694: Service Standards - Lighting and Electrical](#)

[ACC2001/5541: Service Standards -Closed Circuit TV Network Maintenance](#)

ETSA are responsible for lamp replacement within 5 working days of receiving a complaint from Adelaide City Council or the Public.

5.2.4 Operations and Maintenance Program

The Operations and Maintenance expenditure trends and forward expenditure forecasts is shown in Table 5.3.

Table 5.3: Maintenance & Operation Expenditure Trends

Year	Maintenance Budget		
	ETSA Tariffs	Energy	ACC Operations
2006/07	\$383 351	\$556 585	\$286,993

Maintenance is funded from Council's operating budget and grants where available. This is further discussed in Section 6.3.

Future revisions of this infrastructure and asset management plan will include linking the expected maintenance expenditures with defined required service levels to enable an analysis of the appropriateness of maintenance and operations expenditure.

5.3 Renewal Plan

5.3.1 Overview

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 existing service potential. Work over and above restoring an asset to original service potential is considered upgrade or enhancement and is not considered within the renewal plan discussed in this document. Due to significant changes primarily to lighting standards and associated electrical standards, additional funds are allocated as part of the annual business and budget process to meet the upgrade/enhancement associated with renewal work.

Required level of expenditure on the renewal program for lighting, electrical and CCTV will vary from year to year and will reflect:

- the age of the system
- the condition profile of the system
- the ongoing maintenance demand

Historically, renewal works have been minimal, with capital works on lighting, electrical and CCTV assets being driven by installation of new assets and upgrades to existing services. The lighting, electrical and CCTV asset base is relatively new (see Figure 5.1) and as such renewal expenditure has been minimal.

5.3.2 Renewal Strategy

The general renewal strategy is to renew assets when justified by:

- Risk – When the condition and risk of failure and associated impact justifies action (eg light pole can no longer provide required service, probable damage to property/person as a result of inaction)
- Asset performance – When the asset fails to meet the required levels of service due to condition or age. Non-performing assets are identified by monitoring asset reliability, capacity and efficiency during planned maintenance and inspections. Indicators of non-performing assets are repeated lamp outages, wiring failures etc.
- Economics – When it is no longer economically viable to continue to maintain the asset.

Assets requiring renewal are identified from records of installation and remaining life obtained from the asset register through the '*Renewal Model*'. The renewal model is based on renewing assets within or at the expiration of their useful life. Remaining useful life is based on installation date and expected life in the instances where no condition data exists or may be adjusted based on available condition information. The expected lives used for calculating the replacement year is shown in Table 5.4. The renewal model follows the following principles:

- Where practical, lighting, electrical and CCTV infrastructure renewals are aligned with other capital works. This may result in an asset being renewed slightly before or after expiration of useful life.
- Priority is assigned based on risk and location.

Where it is proposed that an asset is renewed after the expiration of its useful life, it is inspected to verify the accuracy of remaining life estimate and to confirm that the asset can continue to provide adequate service prior to renewal.

Table 5.4: Life Expectancy of Lighting, electrical and CCTV Assets

Asset category	Expected Life
Light Globes	N/A- globes are replaced on a routine or as required basis
Light Fittings	30 Years
Light Poles	25 - 30 Years
Electrical Infrastructure, wiring, switchboards	30 Years
Conduits and Pits	50 Years
CCTV Cameras, Monitoring Equipment	3-5 Years

Age and available condition information has been used in conjunction with the asset expected life to model the remaining life and expiration date of assets.

5.3.3 Impact of Deferring Renewal Works

Renewal works identified in terms of renewal strategies may be deferred if the cost (or aggregate cost) is beyond the current financial ability to fund it. This can occur when there are short term renewal profile peaks or higher priority works are required on other infrastructure asset classes.

When renewal works are deferred, the impact of the deferral on the systems ability to still provide the required level of service will be assessed. Although the deferral of some renewal works may not impact significantly on the short-term operation of the assets, repeated deferral will create a liability in the longer term.

5.3.4 Renewal standards and Specifications

The standards and specifications for renewal works will reflect the best current technologies, national standards and legislative requirements. All renewal work will be carried out in accordance with the following Standards and Specifications:

- Council's Urban Elements Catalogue (contains specifications and construction standards)
- Lighting Policy
- Undergrounding, Cabling and Communication Policy
- Building Code of Australia

5.3.5 Renewal Program Expenditure

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised in Figure 5.3. Note that all costs are shown in current 2007 dollar values.

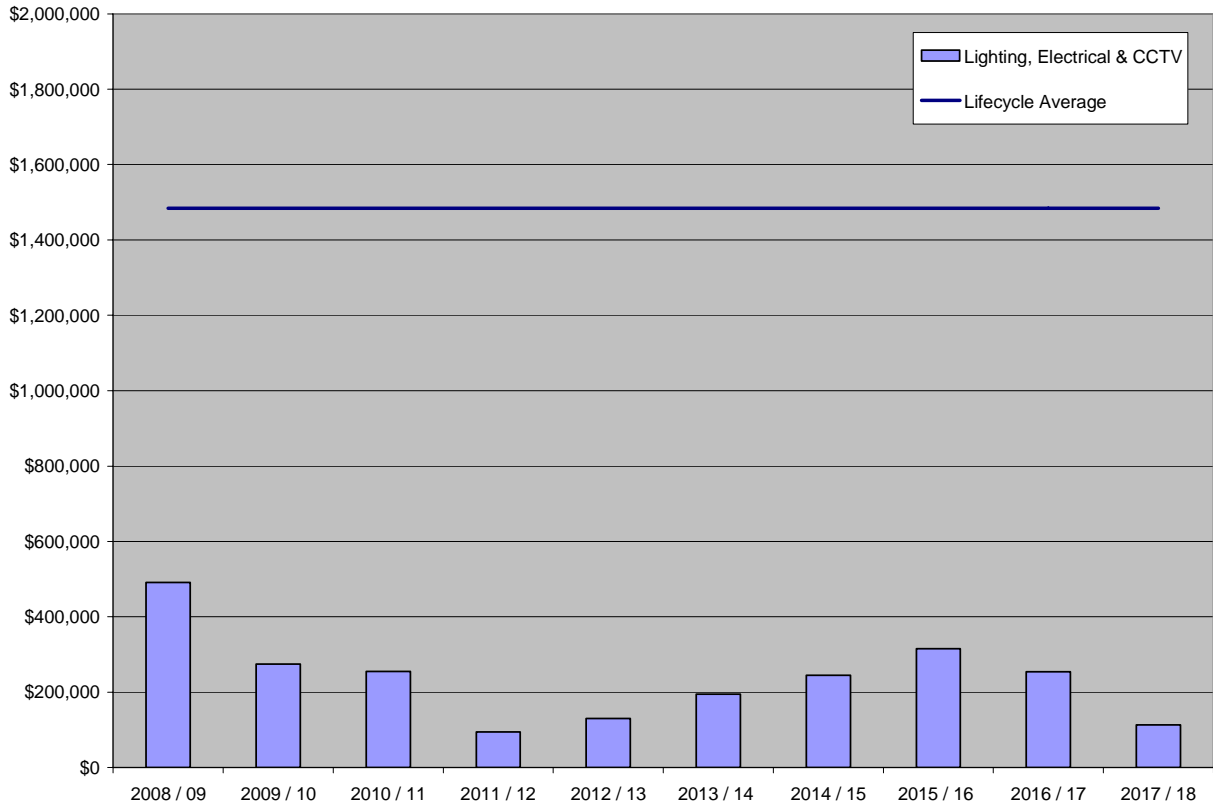


Figure 5.3: Projected Capital Renewal Expenditure

This renewal profile is based on renewing assets at the end of their useful life. Over time lighting, electrical and CCTV projects within the enhancement plan will significantly impact on this renewal profile, as the asset base expands so will the required renewal spend over the lifecycle of the assets.

Renewals are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.3.

Over the lifecycle, renewal costs for lighting electrical and CCTV assets averages out to \$1.5 Million per year. Renewal expenditure over the next 10 years is significantly lower than the lifecycle average due to the current condition of assets currently not requiring renewal.

5.4 Enhancement / Upgrade Plan

5.4.1 Overview

Asset enhancement 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. Upgrades of existing assets to meet new standards are considered as part of the renewal program. For lighting, electrical and CCTV assets this is generally driven by increasing lighting standards in addition to growth, social or environmental needs. Enhancement projects are driven from the objectives of Council's Strategic Management Plan (see Section 2.4).

There are three major ongoing programs for lighting, electrical and CCTV assets within the enhancement plan. In addition to this there are several one-off enhancement projects which include creation or upgrade of lighting, electrical and CCTV assets.

Undergrounding Program

There is approximately 60km of undergroundable overhead power line and communication infrastructure within the City of Adelaide. This infrastructure primarily is owned by ETSA. The Undergrounding Policy outlines the process for project prioritisation which is based on various funding schemes that encourage external funding contributions. Based on 2006 figures it is estimated that it will cost \$130.1 Million to underground all eligible overhead infrastructure. Project selection and prioritisation is outlined in the Undergrounding (Overhead Electricity and Telecommunications Cables) Policy and Operating Guidelines.

Lighting Policy Program

The objectives of the Lighting Policy are:

- The built up areas of the City will be contrasted with their surrounding Park Lands by using differing lighting treatments.
- A unified suite of multi-function lighting poles and components (the '*Adepole*' suite) will be used to establish a consistent, distinctive and attractive style in the City's public lighting.
- Localities within the City will be differentiated through varied lighting treatments.
- Lighting effects will be used to create a nightscape postcard image for the City.
- Design work for improvements to streets and public places will involve the coordinated design of street lighting that reflects street hierarchy and purpose, and improves public safety and the perception of safety in the city.
- Lighting effects will be used to define the Gateways to the City.
- Temporary infrastructure will be established to support special event illuminations.
- Use of photo-voltaic powered lighting will be progressively increased.
- The construction of new verandahs, awnings and other structures covering the area over the footpath will require the installation of lighting to illuminate the footpath for safety reasons and to contribute to the amenity of the public realm.
- The Park Lands will be illuminated in areas where there is a high level of use and adequate levels of surveillance.

City Safety Program

The City Safety Program is a funding source for 'hot spot' improvements that improve safety for city users. Projects under this program typically involve lighting, electrical and CCTV alterations and where possible existing infrastructure is utilised. Projects within the program are reviewed annually as part of the Annual Business Plan and Budget process by the Social Development and Asset Management department.

5.4.2 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 5.3.4.

5.5 Lighting, electrical and CCTV Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for disposal in this plan are predominantly owned by ETSA and have no impact on the Adelaide City Council asset base.

6 FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this infrastructure and 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 in Figure 6.1 for projected operating (operations and maintenance) and ongoing capital expenditure (renewal and upgrade/expansion/new assets). Individual enhancement projects have not been included but are detailed in Appendix A.

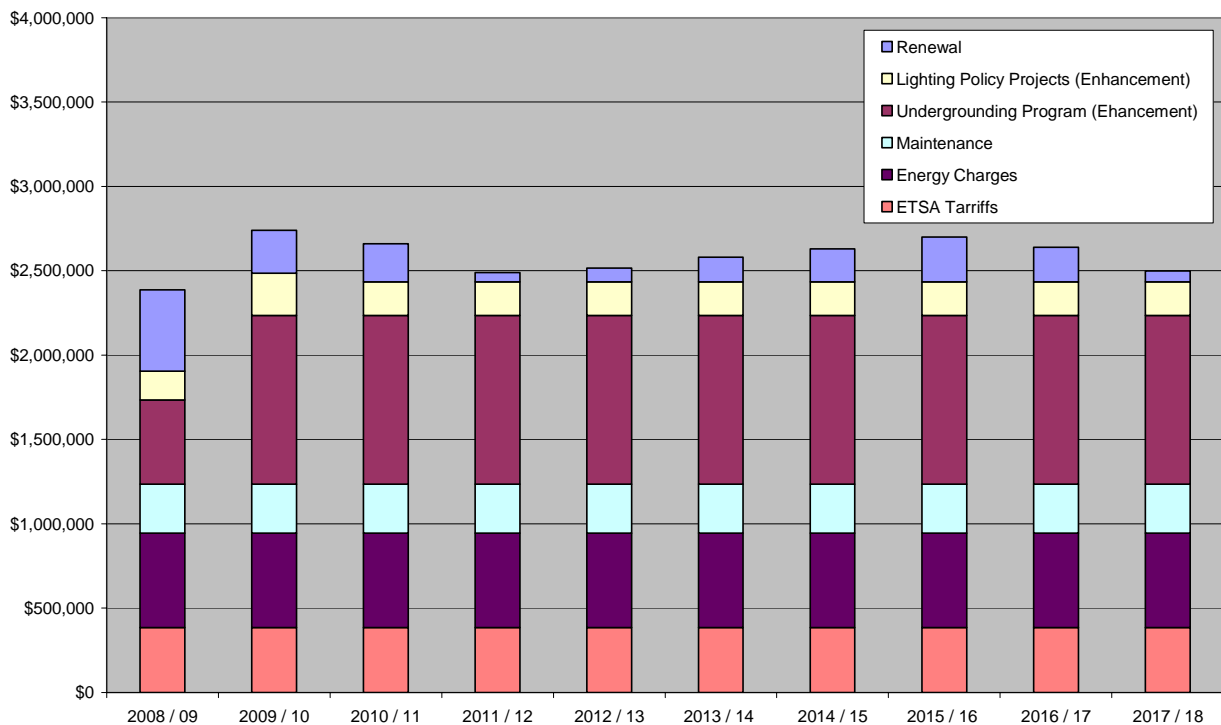


Figure 6.1: Projected Operating and Capital Expenditure

6.1.1 Life Cycle Costs

Life cycle costs (or whole of life costs) are the average annual costs that are required to sustain the service levels. Life cycle costs include maintenance but not asset consumption (depreciation) expense.

Over the life cycle, maintenance, operations and capital renewal costs for the current asset base average out to \$2.67 Million per year. The life cycle cost will increase annually to reflect additions to the asset base as a result of the enhancement programs outlined in Section 0.

6.2 Key Assumptions

The following general assumptions have been made when preparing the expenditure forecasts:

- Existing assets will remain in Council ownership throughout the planning period.
- All expenditure is stated in dollar values as at June 2007 with no allowance made for inflation over the planning period.

- Asset renewal costs in years 1 to 3 are generally based on staff assessment of renewal needs, and from year 3 on, the costs are based on the life expectancy of the asset and the proposed alignment with other asset groups.
- Future ETSA energy and tariff charge increases have not been considered.
- Maintenance costs are based largely on historical expenditure and assume there are no significant increases in service requirements or contractor/material rates.
- Assets values were adopted from the 2006-07 Adelaide City Council Infrastructure Asset Revaluation figures.
- Renewal figures are based on Brown-fields Costs.
- Lifecycle costs are averaged over 100 years.

6.3 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.

Capital renewal costs and maintenance costs are funded from general revenue. Major projects may attract external funding, such as from PLEC (Power Line Undergrounding Committee), which is sourced on a case by case basis.

6.4 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 transferred to Council. At this stage there are no planned future disposals (refer Section 5.5). There is significant asset growth planned (refer Section 0), therefore it is anticipated there will be significant growth in asset valuation. In 2002 lighting, electrical and CCTV assets were valued with a replace value of \$18.9 Million, and \$59.8 Million in 2007.

Based on the current enhancement programs it is anticipated there will be significant growth in assets resulting in an increase in depreciation expense. This increase has not been modelled but has been identified for inclusion in future plans.

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. This plan will be updated to include projected depreciated replacement cost as these figures become relevant. In 2006 – 2007 lighting, electrical and CCTV depreciation was \$1.3 Million.

7 PLAN IMPROVEMENT AND MONITORING

This section outlines the improvement and monitoring program to enhance future revisions of this plan and associated AM plan strategies and financial projections.

7.1 Improvement Plan

The asset management improvement plan was generated from a gap analysis of the current situation and information available for the development of this plan. The proposed infrastructure and asset management improvement plan tasks are shown in Table 7.1.

Table 7.1: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1.	Update and revise plan to reflect changes in asset portfolio and business practices.	Capital Planning	Internal	Annual – part of Business Plan and Budget Process
2.	Review of maintenance practices to ensure alignment to service level requirements	Capital Planning, City Wide Services, Asset Management	Internal	Annual – part of Business Plan and Budget Process
3.	Ongoing rolling program of data collection.	Capital Planning	Internal, Existing programs	Ongoing
4.	Develop and review detailed risk analysis and planning for critical assets.	Capital Planning, Asset Management	Internal	June 2009
5.	Review service levels and commence Internal and Elected Member consultation on service level provision.	Capital Planning, Asset Management	Internal	June 2009
6.	Community consultation on service level provision.	Capital Planning, Corporate Planning and Performance	TBC	June 2010

7.2 Plan Review and Monitoring

7.2.1 Plan Review

Once adopted, this plan will form part of the formal suite of plans required under the Local Government Act. This plan will remain current until replaced by an updated plan adopted in conjunction with the adoption of any New Strategic Management plan as required under the Local Government Act. At present this must occur within 2 years of a new Council being elected.

The Infrastructure and Asset Management Plan is a living document which is relevant and integral to the daily Asset Management activities at Council. To ensure the plan remains useful and relevant, the following process of AM plan monitoring and review activities will be undertaken:

- Formal adoption of the plan by Council in conjunction with the Strategic Management Plan
- Review and formally adopt levels of service
- Revise Plan annually to incorporate and document changes to work programs, outcomes of service level reviews and new knowledge resulting from the AM improvement program. (To be adopted as part of the Annual Business Plan and Budget Process each year)
- Quality assurance audits of AM information to ensure the integrity and cost effectiveness of data collected. (ongoing)

7.2.2 Plan Monitoring

The following indicators will be monitored to measure the effectiveness of this Plan.

- Compliance with legislative requirements – Audit of plan in comparison to Local Government Act, 1999 Requirements
- Quality of Services Delivery – Increasing or 100% compliance with service targets.
- Quality of Risk Management – No events occurring outside the risk profile.
- Benchmarking with comparable Councils – Maintain performance of Asset Management practices in comparison to other Local Government Organisations.

8 REFERENCES

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

9 APPENDICES
